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MYSIDE BIAS SHIFTING IN THE WRITTEN ARGUMENTS OF FIRST YEAR
COMPOSITION STUDENTS

by

Lezlie Christensen Branum

A dissertation submitted in partial fulfillment
of the requirements for the degree
of

DOCTOR OF PHILOSOPHY

in

Education
(Curriculum and Instruction)

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2022

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ABSTRACT

Myside Bias Shifting in the Written Arguments of First Year Composition Students

by

Lezlie Christensen Branum, Doctor of Philosophy

Utah State University, 2022

Major Professors, Amy Wilson-Lopez, Ph.D., and Amy Piotrowski, Ph.D.
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This dissertation reports the findings of a study conducted to research how First Year Composition (FYC) students shifted their Myside bias in written arguments as they navigated a curriculum designed to combat it. An additional learning outcome built into the curriculum was rhetorical awareness. I utilized Linda Flower's social cognitive theory of writing as the construction of negotiated meaning as a lens through which to conceptualize, analyze, and organize the study's data and findings. This framework, which highlighted how students interpreted, negotiated, and reflected upon their arguments, underscored the dynamic and highly individualized ways in which Myside bias shifted. The research questions asked were: (1) When participating in a curriculum centered around rhetorical awareness, do students in First Year Composition courses shift their Myside bias? (2) If so, how?

To answer these questions, I used a multiple case study design to follow seven college writers' navigation of a First Year Composition course on researched argument

writing. Pre- and post-surveys, written arguments, classroom audio recordings, student drawings, and interviews were collected over the period of a semester. Data were analyzed using constant comparative analysis. Additionally, the three primary sources (pre- and post-surveys, arguments, and interviews) were each analyzed with methods most appropriate for source type. The study resulted in several findings: (1) a generalized reduction of myside bias occurred across cases over time, particularly in written products, though contradictory results and some increases were demonstrated in certain students' argument schemas; (2) 16 factors, including identity, epistemological beliefs, goals, reflection, and dialogue, were shown to affect myside bias shifting; (3) no two students demonstrated identical trajectories in myside bias shifting; and (4) how students interpreted argumentation itself, and a given rhetorical context, affected how they negotiated myside bias. These results are significant because they underscore the sociocultural aspects of myside bias, a subject that has previously been subordinated to the cognitive aspects of the phenomenon. The results from this research have important implications for FYC educators, writing program administrators, secondary teachers of argument, curriculum designers, secondary and postsecondary students, and policymakers.

(496 pages)

PUBLIC ABSTRACT

Myside Bias Shifting in the Written Arguments of First Year Composition Students

Lezlie Christensen Branum

This dissertation reports on research conducted to better understand how college student writers learned to work against their own biases as they researched and wrote arguments. I conducted a review of former studies to design a curriculum that would help students avoid bias and increase their ability to write arguments tailored to specific readers in ways that accomplish their goals. This review also informed the kinds of data to be collected and analyzed in order to accomplish the research goal, which was to understand whether and how each of seven students enrolled in a composition course reduced their biases. I collected written arguments, drawings, and classroom discussions of these students and administered surveys, and participants underwent interviews, to study the effect of the curriculum and instruction. This dissertation reports findings on how each student writer's bias shifted differently over the course of the semester, and the role identity played in bias shifting. Results include the observation that the curriculum was effective at reducing bias in student arguments, though to various degrees and for differing reasons, based on a variety of contextual factors. Unlike experimental studies of bias, this study provides rich details about seven individual students' experiences in a course designed to reduce bias. Implications include researched evidence upon which teachers, administrators, curriculum designers, and policymakers may base future decisions upon regarding the teaching of argumentation.

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Second, I would like to thank my committee members, Dr. Sylvia Read, Dr. Steve Camicia, and Dr. Jessica Rivera-Mueller, who asked excellent questions, provided helpful resources on methodological and content-based issues inherent to myside bias and composition, and guided me through their feedback.

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Lezlie Christensen Branum

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CHAPTER I

INTRODUCTION

Several years ago, I planned an activity for use in my English 2010: Persuasive Writing in an Academic Mode course that I imagined would open my students' minds to alternate perspectives. I had struggled to find ways to encourage them to consider and address counterarguments, use evidence to back the reasons they used to support their claims, and approach argument writing as a problem-solving activity rather than a debate—with mixed results. As the second semester of a First Year Composition (FYC) sequence required of all students at my university, English 2010 aims to teach critical thinking, reading, and writing skills through the construction of arguments. At this point in my teaching career, I had learned that, before I could teach my students to write arguments, I would first need to help them unlearn much of what they knew about writing them, such as the primacy of the five-paragraph essay.

My hopes were high for the dialectical thinking activity I had planned for that day. I placed five signs around the room at the outset of class: “I Completely Agree,” “I Mostly Agree but Have a Point of Disagreement,” “I Agree and Disagree,” “I Mostly Disagree but Have a Point of Agreement,” and “I Completely Disagree.” I then presented a claim to my students—one I knew was a hot-button and local issue—and asked them to write an argument in five minutes regarding their position on the matter and three reasons supporting it. The argument: “People on USU’s campus should be allowed to carry concealed weapons,” reflected the policy on our Western state campus. I then asked students to stand up and move to the area of the room which best reflected their stances.

What I saw happen, in section after section of English 2010 that day and in semesters since, only partially surprised me. Around 85% of students in each class crammed into one corner, with a few bold stragglers situating themselves in other locations. Often, no one sat on the polar opposite side of the room.

The goal of the activity was to then engage in a discussion, laptops open, in which we collectively worked to investigate the issue; my desire was for students to realize the complexity involved in research and argument. We listed reasons backing each stance and located various types of evidence supporting and contradicting those reasons. Our discussion provided a natural way to discuss source credibility, evidence quality and type, evidence weight in decision-making, and logical fallacies as these issues arose in our collaborative investigation.

I believed the eye-opening aspect of the activity would stem from a twist: students were encouraged to relocate to other areas of the room if they heard evidence causing them to question their original position. My desire was not to woo them into any particular classroom location; rather, I hoped to see *movement*. I hoped for *them* to see movement. My goal was to encourage them to interrogate their own epistemologies enough to feel comfortable questioning—to move to a mental space that could withstand temporary ambiguity.

Unfortunately, every time I have attempted this activity—in all its multiple incarnations aimed at improvement—students rarely, if ever, move.

This and other experiences teaching composition led me on a quest to understand why college writers operate in such a way and what I might be able to do about it. The

term commonly used to describe my students' behavior is, appropriately, "myside bias," and this was the phenomenon examined in this study.

To nurture students' ability to wield argumentative discourse, educators must provide a path that moves beyond what Apple (2004) has critiqued as a drive "to reduce student action to identifiable forms of overt behavior" in the service of educator learning assessment (p. 102). Argument must be taught in a way that promotes critical thinking and transfer of learning to various rhetorical contexts. Supporting student growth through curriculum designed to develop literate action as a "socially situated problem-solving process" (Flower, 1994, p. 2) is a key concern for composition researchers and practitioners alike because developing these capacities is of enormous value to students in academic and other social contexts.

Statement of the Problem

Written argument is a genre with which postsecondary students must be familiar due to its ubiquity across the disciplines. Wolfe's (2011) study of writing tasks across the university curriculum, for example, found that nearly 60% of college writing assignments require students to write an argument. However, the 2012 National Assessment of Educational Progress (NAEP) Writing Report Card (National Center for Education Statistics, 2012) suggests that only 27% of secondary students write argumentative essays proficiently. Argumentative essay writing is already riddled with challenges for high school students; these challenges become compounded once they begin writing in postsecondary contexts.

State and national assessments have catalyzed a dramatic increase in argumentative writing research. Within the composition field over the past three decades, the phenomenon known as “myside bias” is accruing a growing body of empirical research (Castelain et al., 2016; Felton et al., 2015; Gol, 2013; Klaczynski, 2000; Mason & Scirica, 2006; E. M. Nussbaum, 2008; Stanovich & West, 2007, 2008a, 2008b; Toplak & Stanovich, 2003; Trouche et al., 2016; Wolfe, 2012; Wolfe & Britt, 2008, Wolfe et al., 2009). “Myside bias” was a term originally coined by Perkins (1989), who defined it as biased reason generation in support of a favored position, or the propensity to generate reasons supporting a claim with which the writer “sides” before consideration of alternate positions and reasoning on the issue. Subsequent scholarship has added to this original definition: a feature of evaluating and producing written arguments, myside bias is demonstrated when “people evaluate evidence, generate evidence, and test hypotheses in a manner biased towards their own opinions” (Stanovich & West, 2007, p. 226). Myside bias is now featured as an important topical issue in writing research handbooks and argumentation literature reviews (MacArthur et al., 2016; Newell et al., 2011). This research interest is likely due to the large number of studies finding myside bias to be a prevalent critical-thinking problem across a wide range of populations and contexts (Baron, 1995; Felton et al., 2015; Gol, 2013; Song & Ferretti, 2013; Stanovich & West, 2008a, 2008b; Wolfe & Britt, 2008).

The implications of myside bias in postsecondary writing contexts should be clear to educators across the curriculum. Described as a “sin against reasonableness” (Ferretti & Fan, 2016), myside bias obscures open-minded and critical thinking and is therefore

antithetical to the objectives of many tertiary writing tasks. It is particularly troublesome for educators of First Year Composition (FYC) courses because they are often tasked with preparing college students for academic writing tasks across the disciplines.

A central learning objective of FYC courses is to nurture the habits of mind that strengthen critical thinking and communication abilities (Council of Writing Program Administrators, 2012). Appropriately, the inaugural study of the effects of postsecondary schooling on informal reasoning skills in argumentation concluded that “professors in particular subject areas” do little to prepare students for thinking through complex and open-ended issues (Perkins, 1985). In this study, Perkins concluded:

The essay assignment is perhaps the only frequently assigned task in which students might practice for themselves such investigative thinking. However, several limitations are immediately apparent. Most courses call for an essay only once a term. Many students meet the demand by papers that summarize and, perhaps, synthesize, without really developing an argument. (p. 569)

This call for exercise and instruction in argument writing positions the FYC classroom, where prolific essay writing is the singular focus of course activity, as a particularly valuable context in which to study myside bias. Students in these courses gain experience in developing research questions on subjects of their own interest, while collecting, analyzing, using, and citing sources from electronic research databases and other internet- and print-based sources, to write arguments based on these processes.

FYC courses are also valuable spaces to study myside bias because a majority of students enrolling in them are emergent adults between the ages of 18-29. Several studies indicate that emergent adulthood is a particularly formative life stage in which human beings are especially malleable. On the social front, emergent adults are heavily invested

in identity exploration as they select majors, careers, and begin building their independent lives (Arnett, 1994, 2000, 2015, 2016). Thompson (2014) has suggested that emergent adulthood is a distinct cognitively developmental period in which the brain is undergoing remodeling for higher-order cognitive functions. Educational experiences, then, may help to strengthen synaptic connections and the functions they support, suggesting that the brains of emergent adults are literally reshaped by their tertiary educational experiences. As thinking processes change through early adulthood, evidence suggests that students transition from believing in absolutes with a single truth to more complex thinking and consideration of multiple, broader viewpoints (Perry, 1970, as cited in Dachner & Polin, 2016).

As a barrier to critical thinking, myside bias inhibits informal reasoning skills which are central not only in academia but in everyday decision-making processes (Baron, 1995; Baron et al., 1993; Perkins, 1985). Similarly, understanding how to mitigate myside bias has important implications beyond academic contexts. The ability to reason through evidence in the pursuit of balanced argument formulation, while reflecting upon one's assertions and growing epistemologically sophisticated, holds promise for influencing how students consume and produce arguments in other contexts (Clark & Hernandez, 2011).

Increased student interactions with argument, including those in advertising, news, and social media, have precipitated renewed attention to building balanced argumentation skills. The 21st century poses a challenge in the increasing ease and pace of production, dissemination, and accessibility of arguments and pseudo-arguments. The

Pew Research Center recently reported that 92% of teens go online daily, 24% are online “almost constantly,” and that this modern “frenzy of access” is largely facilitated by widespread access to mobile smartphone devices (Lenhart, 2015). Whether young adults are seeking entertainment or information, they face the task of evaluating claims more frequently than any former generation. More troublingly, they do so within what many technology researchers and ethicists have recently testified before the U.S. House and Senate has become an “economy of misinformation” (Americans at Risk, 2019, p. 1) fueled by social media platforms’ use of A.I. algorithms designed to maintain user attention for profit (Americans at Risk, 2019; U.S. Senate Committee on Commerce, Science, & Transportation, 2019).

The inability, or unwillingness, to critique preexisting attitudes or consider the possible value in alternate ideas “hinders constructive discourse and fosters polarization” (Knobloch-Westerwick, Johnson, et al., 2015, p. 576). For both educational and civic reasons, teachers should understand the factors implicated in myside bias and adopt strategies to help students not only recognize their own biases, but to better understand how biases are enacted in discourses that involve multiple perspectives and the contexts that shape those perspectives. As research in the increasing polarization of political parties in the U.S. demonstrates, myside bias prohibits productive democratic discourse; recently, several researchers have voiced concerns with this trend (Knobloch-Westerwick, Johnson, et al., 2015a Knobloch-Westerwick & Lavis, 2017; Winter et al., 2016; Wolfe, 2012).

Crucial traits of readers and writers engaged in argument include open-

mindedness, an affinity for perspective-taking and reason, and the ability to negotiate ambiguity. Hansen (2010) has argued that this kind of “cosmopolitanism” enables human beings to “create not just ways to tolerate differences between them but also ways to learn from one another, however modest the resulting changes in their outlooks may be” (p. 4). Given the current state of U.S. national discourse, never has a goal been more worthy. For these reasons, and to contextualize the current study, I begin by discussing the difficulties inherent in defining myside bias.

Perkins (1989) originally defined “myside” bias as the generation of more reasons supporting a claim one supports than reasons supporting another side. Since then, researchers have expanded the original definition in several ways. Researchers, for example, have defined the phenomenon as both biased production and evaluation of arguments and found substantial evidence of it in several exploratory studies conducted in both elementary (Baron et al., 1993) and postsecondary (Baron, 1995) school contexts, as discussed further below. Others investigating postsecondary writing have defined the construct as the failure to reference otherside arguments in written essays (Wolfe, 2012; Wolfe & Britt, 2008; Wolfe et al., 2009). Stanovich and colleagues (MacPherson & Stanovich, 2007; Stanovich & West, 2007, 2008a, 2008b; Toplak & Stanovich, 2003) have defined myside bias as the degree to which postsecondary participants evaluate evidence, generate evidence, and test hypotheses consistently with formulated opinions. Mercier (2016) defines it as a tendency to find arguments defending one’s position.

However, definitional clarity is thwarted by conflation in research practice with two other similar concepts: confirmation bias and belief bias. The three biases have been

defined and operationalized similarly and differently throughout the literature. For example, Trouche et al. (2016) reference “the confirmation bias or myside bias” (p. 2122), as if the two are identical. However, Felton et al. (2015) distinguish between them, asserting that “confirmation bias concerns how we take in arguments and evidence to form our beliefs, while my-side bias concerns how we use arguments and evidence to present our beliefs to others” (p. 318). Others have posited a taxonomy of sorts, defining myside bias as a “subclass of confirmation bias related to actively open-minded thinking” (Stanovich et al., 2013, p. 259). Further complicating matters is the similar conflation of belief bias with myside bias (McCrudden & Barnes, 2016) or the insistence upon their differentiation (MacPherson & Stanovich, 2007).

Because of the various ways that myside bias has been defined and operationalized and its conflation with both confirmation and belief biases, a composite definition guides this study. Myside bias is herein discussed as a behavior in which one gathers, evaluates, or generates evidence or arguments, or tests hypotheses, in support of instantiated opinions or beliefs.

I elected to operationalize myside bias by looking at all four components of the phenomenon: gathering, evaluating, hypothesizing, and generating. I chose to utilize this comprehensive definition due to my own observation, over years of teaching argumentation, of the role each behavior has seemed to play in students’ myside bias in argumentation. By including all four types in the current study, my goal was to reach a better understanding of the role each plays within myside bias—including any potential relationships between behaviors—to arrive at a fuller understanding of the phenomenon.

Purpose of the Study

The purpose of this study was to investigate whether and how students attending a FYC course shifted their myside biases while working through a curriculum designed to counter myside bias and build rhetorical awareness in written arguments. To assess myside bias shifting, I examined how students negotiated multiple and often dissonant voices from reading research studies and their own experiences in order to construct written arguments. These voices included the students' own, as well as those of past and present teachers, classmates, texts, community members, family, and friends. In this course, students learned to research and write argumentative essays featuring several of the genre's textual conventions: counterargument, rebuttals and concessions. Grounded in social cognitive theories of writing, this course blended explicit instruction and instructor feedback with regular collaborative peer dialogue and student reflection on the purposes, strategies, and rhetorical situations in which arguments were written. Thus, this study sought to assess myside bias shifting over time and to identify how and why such shifts occurred.

Research Questions

This study investigated the following research questions:

1. When participating in a curriculum centered around rhetorical awareness, do students in First Year Composition courses shift their myside bias?
2. If so, how?

Significance of the Study

This study is significant because it adds to the research on curricular and instructional strategies in FYC courses tasked with the teaching of researched argument writing. Specifically, this study provides insight into how students negotiate myside bias as well as how (and indeed whether) rhetorical awareness assists in this process and develops over time.

Empirical research on myside bias has grown over the past three decades (Britt et al., 2007; McCrudden & Barnes, 2016; Stanovich & West, 2007; Toplak & Stanovich, 2003; Wolfe, 2011; 2012; Wolfe & Britt, 2008; Wolfe et al., 2009) but has been conducted through primarily experimental or quasi-experimental methods in controlled settings and through cognitivist theoretical lenses such as information processing or schema theory. The current study extends this body of research through three innovations: (a) methodologically, by employing qualitative rather than experimental methods, (b) pedagogically, through a semester-long curriculum designed to counter the phenomenon rather than isolated interventions, and (c) theoretically, by adopting a socio-cognitive theoretical framework that attends to the importance of rhetorical context and social factors in argument construction. Furthermore, though empirical research on myside bias has formerly been conducted with college student participants, a majority of these involved large samples of students volunteering from psychology courses to participate in brief and isolated experiments. This study instead investigated the phenomenon within a specific social context more parallel to what argument writing teachers must navigate: the classroom. Argument writing research that investigates

writers over time, in authentic classroom settings, and through integrated cognitive and social perspectives has been explicitly called for by foremost scholars of literacy education (Newell et al., 2011).

This call is in part due to a problematic trend in educational research since at least 2002 (Feuer et al., 2002), which privileges experimental methods as the preferred way to causally explain teaching and learning phenomena. Maxwell (2004) discusses the problems many educational researchers have raised with this trend (Berliner, 2002; Eisenhart & Towne, 2003; Erickson & Gutierrez, 2002; Lather, 2004; St. Pierre, 2002) and instead asserts that “a realist understanding of causality is compatible with the key characteristics of qualitative research” (Maxwell, 2004, p. 3). Maxwell argues that, though researchers of all traditions can work together for maximum understanding, qualitative methods are ideally suited to explain the *how* of causality, as opposed to the “variable-oriented approach to research” utilized in quantitative methods (p. 4). The current study takes seriously Maxwell’s counsel that “to develop adequate explanations of educational phenomena, and to understand the operation of educational interventions, we need to use methods that can investigate the involvement of particular contexts in the processes that generate these phenomena and outcomes” (p. 7).

Context, in argument writing, is key. Written arguments are not simply textual products; they are the result of various cognitive and social factors inherent in particular literate events. Social factors, which are understudied in myside bias research, include a writer’s life experiences, socio-economic background, group memberships, relationships, and identities. As these factors are constantly changing, isolated analyses of arguments

constructed in timed-writing circumstances falls short in accessing the complexity involved in their production. The current study does not attempt to make generalizable claims about causality for all FYC contexts; however, it does provide insight into both the trends and variabilities noted among participants experiencing the curriculum. These findings are significant because of the likely transferability of identified principles to similar FYC contexts.

Because postsecondary institutions rely on FYC teachers to equip students with foundational literacy skills that will be transferable to other contexts, this study also provides an opportunity to examine the extent to which rhetorical awareness develops over the course of a single semester—and how this development effects myside bias shifting. Empirical and theoretical research on rhetorical awareness has been conducted (Clark & Hernandez, 2011; Flower, 1994; Lamberti & Richards, 2012; Negretti, 2012); however, it has not been formerly paired with an investigation of myside bias. This study sought to fill these gaps in the literature.

Beyond its contribution to the literature, this study is significant because it investigates a growing societal problem. Young adults have come to rely upon social media technology platforms for information, news, entertainment, and human interaction. These platforms are unregulated by traditional journalistic, scholarly, governmental, or other ethical norms. Furthermore, they are designed to sustain human attention, upon which their businesses monetize, through “the unrestrained use of content amplification and context manipulation capabilities” which technology ethicists have argued “are dismantling, directly disrupting, and disabling our democracy” (U.S. Senate Committee

on Commerce, Science, & Transportation, 2019). These companies utilize algorithms and A.I. technology to create echo chambers that filter how the real world is accessed, experienced, and viewed. The information superhighway is no longer a neutral road, ripe with exits to divergent ideas; rather, it's been engineered to steer users back to their point of origin and the familiar haunts surrounding it.

This relatively recent societal shift has amplified individual and collective propensities toward myside bias as it discourages civil, open-minded, and democratic discourse—a phenomenon which undoubtedly has contributed to increased polarization, radicalization, and violence in the U.S. John Dewey (1916) argues in *Democracy and Education*:

Not only is social life identical with communication, but all communication (and hence all genuine social life) is educative. To be a recipient of a communication is to have an enlarged and changed experience. One shares in what another has thought and felt and in so far, meagerly or amply, has his own attitude modified. (p. 5)

Yet the potential for attitude modification declines in a culture where communication infrastructures are configured against it. Those who created these systems argue they simply provide a neutral platform. But their use of advanced technological innovations to predict and direct human attention instead threatens democracy by shaping what users imagine to be a free exchange of ideas.

While FYC educators may have little influence over how information is regulated, disseminated, or organized, they are uniquely positioned to equip young adults with effective tools for gathering, evaluating, and producing it. Dewey (1916) argued that a democratic society “must have a type of education which gives individuals a personal

interest in social relationships and control, and the habits of mind which secure social changes without introducing disorder” (p. 99). To be effective in the real world, this type of education must move beyond noble philosophical goals towards practical methods.

It would need to provide educators with practical tools and strategies for teaching these “habits of mind,” such as those articulated by the Council of Writing Program Administrators, the National Council of English Teachers, and the National Writing Project (2012), in a way that students can take up and use beyond the boundaries of the classroom. These habits—including curiosity, openness, engagement, creativity, persistence, metacognition, responsibility, and flexibility—are hallmarks of proficient argument writers and antithetical to myside bias. The current study illuminates whether, how, by whom, and in what contexts myside bias can be shifted. This information holds value for educators, students, and all stakeholders invested in empowering a democratic society.

Methodology

I utilized a multiple case study design in this study. Participants were students enrolled in one of two sections of a blended FYC course which alternated between weeks of face-to-face instruction and online peer workshops. I followed students as they navigated the course, which focused on the writing of researched arguments. I chose these courses because they provided an ideal opportunity to examine whether and how incoming college students learned to mitigate their own biases in researching and writing arguments.

I designed the course curriculum specifically to mitigate myside bias through the application of pedagogical strategies suggested by empirical literature. Approaches included explicit instruction in elements and textual conventions of argument and collaborative learning activities designed to reduce myside bias and enhance rhetorical awareness. I selected participants based on the results of a myside bias survey instrument at the outset of the semester (Wolfe, 2012), and all seven who agreed to participate in the study were included in the study. An outside researcher conducted interviews with participants. I conducted pre/post surveys during class and collected written and drawn artifacts from participants. I preserved audio recordings of crucial in-class dialogues. These data allowed me to observe and analyze whether and how students shift their myside biases over the course of a semester. Methods of analysis varied depending on source type, and included constant comparative analysis (Charmaz, 2014; Corbin & Strauss, 2015; Saldaña, 2016), pre/post survey mean comparisons, calibrated evaluation of written arguments, and qualitative coding of interviews.

Summary

Theories of writing and literacy have developed in response to research, and this development has the potential to alter the work of FYC teachers and their students. This study advances the research in the fields of composition and literacy education. It explored whether and how students' myside bias shifted through a curriculum designed to counter it while increasing rhetorical awareness.

Definition of Terms

The glossary clarifies the ways in which terms are used throughout the study.

Argument: a claim supported by one or more reasons (Reznitskaya et al., 2009; Voss, 2005; Wolfe, 2012; Wolfe et al., 2009), or “data,” using Toulmin’s (1958) terminology.

Argument schema: “a learned, culturally derived set of expectations and questions about argumentative texts” (Wolfe, 2012, p. 479).

Balanced argumentation schema: Wolfe (2012) defines the balanced argumentation schema as “a learned, culturally derived set of expectations and questions about argumentative texts” (p. 479) resulting in “a preference for arguments that acknowledge more than one side” (p. 480).

Claim: a claim comprises the first required component of an argument. A claim is the position, judgment, or conclusion a speaker or writer wants an intended audience to accept (*see also, “opinion” defined below*).

Cognition: “the process or result of recognizing, interpreting, judging, and reasoning; knowing” (Harris & Hodges, 1995, p.34).

Counterargument: an argument or set of reasons put forward to oppose an idea or theory developed in another argument.

Concession: The action of conceding, granting, or yielding something requested or required.

Epistemological beliefs: “beliefs about the nature of knowledge and learning” (Schommer, 1998, p. 551).

Fact-based argumentation schema: Wolfe (2012) defines the fact-based argumentation schema as “a learned, culturally derived set of expectations and questions about argumentative texts” (p. 479) resulting in “an uncritical belief that facts alone make an argument good” (p. 480).

First Year Composition (FYC): first-year writing courses taught by faculty, adjuncts, or TAs in an English Department or Writing Program/Department. Learning outcomes for FYC courses include rhetorical knowledge; critical thinking, reading, and composing skills; process skills; and knowledge of genre and language conventions (Harrington et al., 2001).

Identity: “conceptualized by Erikson (1968) as a sense of coherence among past, present, and future aspects of the self, involv[ing] two primary processes: exploration and commitment” (Klaczynski & Lavalley, 2005, p. 3). Identity is a person’s sense of who they are and who they hope to be. It is contextual and social in nature.

Literate act: “an individual constructive act that does not merely invoke or participate in a literate practice but embeds such practices and conventions within a personally meaningful, goal-directed use of literacy. . .Literate acts also reflect the complex, even contradictory, goals and purposes that often drive meaning making” (Flower, 1994, p. 18).

Metacognition: “thinking about thinking at many levels of awareness” (Flower, 1994, p. 225). Metacognition is the umbrella term for sub-concepts such as reflection and awareness.

Myside bias: uncritical fact-gathering in support of one’s views (Perkins, 1989;

Wolfe, 2012). As a feature of evaluating and producing written arguments, myside bias is demonstrated when “people evaluate evidence, generate evidence, and test hypotheses in a manner biased towards their own opinions” (Stanovich & West, 2007, p. 226) and “ignore the information on the side that one disagrees with—the other side of an issue—in favor of information that supports one’s position, “myside” (Wolfe, 2012).

Opinion: A judgment or conclusion formed about something which may or may not be based on fact or knowledge and may need more testing. (Note: a claim, by itself, is also an opinion).

Reason: a reason (or *premise*) is the second required component of an argument and is a claim used to support another claim. “A reason is usually linked to a claim with words such as because, since, for, so, thus, consequently, and therefore, showing that the claim follows logically from the reason” (Ramage et al., 2012, p. 51).

Refutation: a rebuttal which refutes a counterargument.

Reflection: “an intentional act of metacognition, an attempt to solve a problem or build awareness by ‘taking thought’ of one’s own thinking” (Flower, 1994, p. 224). In this sense, reflection is an intentional activity and a type of metacognition.

Rhetorical Awareness: “A writer who is rhetorically aware knows why he or she is writing, has a sense of purpose and audience, understands the nature of the ‘occasion’ and the conventions that may govern it, understands his or her ethical position relative to the audience, knows the inventional or logical methodologies that audiences may apply to subjects, and makes intelligent decisions about style and arrangement based on this rhetorical awareness” (Porter & Ramsey, 1984, pp. 135-136).

Rhetorical Situation: the *context* (background of and situation in which the communication is created) of a rhetorical act. A rhetorical situation consists of a *rhetor* (a speaker or writer) with a *purpose* (the goal of the speech or text), an *exigence* (an issue, problem, or situation that causes or prompts someone to write or speak) an *audience* (who listens to or reads the text), *stakeholders* (who may be affected by the speech or text), and a *medium* (such as a speech or a written text).

Rogierian Argument: a negotiating strategy in which common goals are identified and opposing views are described as objectively as possible in an effort to establish common ground and reach agreement.

Strategic knowledge: knowing how to actively create knowledge within a specific discourse by being able to read a situation, set appropriate goals, use appropriate strategies, and be aware of one's own options and assumptions.

Transfer: "in general, the carryover process, or effect, of one response or set of responses on another, as the transfer of certain reading skills to writing skills" (Harris & Hodges, 1995).

CHAPTER II

LITERATURE REVIEW

Chapter II reviews empirical studies of myside bias. Myside bias is the uncritical fact-gathering in support of one's views (Perkins, 1989; Wolfe, 2012). As a feature of evaluating and producing written arguments, myside bias is demonstrated when “people evaluate evidence, generate evidence, and test hypotheses in a manner biased towards their own opinions” (Stanovich & West, 2007, p. 226) and “ignore the information on the side that one disagrees with—the other side of an issue—in favor of information that supports one's position, “myside” (Wolfe, 2012). This section of Chapter II reviews the empirical work on myside bias.

Search Process and Source Inclusion

This review includes literature published during the period between 1989-2018. This timeframe was selected because the phrase “myside bias” was first coined in 1989 (Perkins, 1989). The review period extends to the present in an attempt to capture all relevant empirical literature published during this 29-year period.

A search emphasized refereed journal articles reporting empirical research. Dissertations, books, conference proceedings, and other potentially relevant literatures were excluded, in order to facilitate review manageability. Literature not published in English was also excluded.

The search process did not exclude studies based on age or grade. The vast majority of myside bias studies have been conducted in postsecondary institutions,

ensuring strong coverage of the issue among the population of the proposed study.

Further, retaining studies across ages substantiates the prevalence of the phenomenon and highlights the contexts under which myside bias shifts (and does not shift) over the lifespan under specific conditions.

No geographical restrictions were applied for two related reasons: a) the proposed study investigated sociocultural factors inherent in the myside biases of student writers who may hail from any geographic region, and b) the FYC course in the proposed study has historically been attended by both international and domestic students.

Searches utilizing the key term, “myside bias,” were made in three primary education databases: Education Source, Educational Resources Information Center (ERIC), and Psych INFO. An initial database search resulted in a total of 51 peer-reviewed articles. Additionally, because counterargumentation is often seen by researchers as evidence of myside bias mitigation, an additional search utilizing the combined terms with Boolean markers was executed: [counterargument AND “composition OR writing” AND “college students OR university students OR undergraduates” AND argument], in the three databases mentioned above. The additional markers were used to ensure relevance of hits to the proposed study. An initial database search resulted in a total of 31 peer-reviewed articles. This total of 79 results was narrowed to 31 through the exclusion of non-empirical hits. Finally, a hand search of reference lists of the 31 studies resulted in the additional inclusion of another 12 studies, for a total of 43 sources included in the present review.

Many scholars assert that two related terms, “confirmation bias” and “belief bias,”

are different than myside bias. Because of this, these terms were not included in key word searches. However, in cases where the search term led to studies on belief biases, the studies were retained

Theoretical Lenses, Methodologies, Participants and Contexts

Cognitivist theoretical and conceptual frameworks were overwhelmingly predominant in the studies of myside bias with 74% of reviewed studies adopting some version of them. In studies of bias, this is not an unexpected finding and is likely related to the fact that 91% of the studies reviewed utilized quantitative methods to investigate the phenomenon. This section describes the theories and methods applied to the study of myside bias, as well as the contexts and participants studied in the reviewed literature.

Information Processing Theory

With 13 of 43 studies (30%) adopting this theory, information processing theory comprises the most prevalently utilized theoretical framework in the reviewed literature. As a category of its own, information processing theory was also the most extensively used (from 1997-2017) over the review period. Dual process theory, in particular, was the most common form (Klaczynski, 2000; Klaczynski & Lavalley, 2005; McCrudden & Barnes, 2016; McCrudden et al., 2017; Stanovich & West, 2008a). Dual process theory posits that thoughts can take one of two processing paths: an automatic, subconscious path or an explicit, conscious path. The latter path is slow and cognitively demanding, explaining why many thinkers rely on quick heuristic thinking, a potential cause of myside bias.

Dual process theory's cousin, tri-process theory, further subdivides this slower and more demanding path into another fork in the mental road: the explicit path becomes either an algorithmic or reflective path. Stanovich (2009) argued that this further distinction was necessary as he found that cognitive ability was often unrelated to bias mitigation, suggesting that cognitive ability and thinking dispositions might be important factors in understanding, with the reflective portion representing one's willingness to engage in open-minded thinking. Several of the reviewed studies (Macpherson & Stanovich, 2007; Stanovich & West, 2007; 2008b; Yen & Wu, 2017) adopt this theoretical lens.

Other information processing theory sub-types in the literature include mimetic theory (Toplak & Stanovich, 2003) and fuzzy trace theory (Britt et al., 2007), centered around the role of memory. Additionally, two information processing theories invested in the role of reader motivation include heuristic and systematic information processing (Winter et al., 2016) and depth of processing explanation of motivated reasoning theory (Klaczynski et al., 1997). Despite these variations, information processing theories emphasize the role of cognition in myside bias through a reliance upon computer processing as a metaphor for human cognition.

Schema Theory

Another commonly-utilized cognitivist theoretical framework represented in the literature is schema theory, adopted by 11 of 43 (22%) of studies (Felton et al., 2015; Gol, 2013; Kardash & Howell, 2000; E. M. Nussbaum, 2008; E. M. Nussbaum et al., 2005; E. M. Nussbaum & Schraw, 2007; M. Nussbaum et al., 2019; Wolfe, 2012; Wolfe

& Britt, 2008; Wolfe et al., 2009). Schema theory was utilized as a framework in the reviewed studies over the years 2000-2018, paralleled by a nearly identical timeframe with information processing theories.

Schema theory contends that mental structures organize categories of information and regulate relationships between them; these structures are preconceived and determine how new information is stored and used. Many researchers utilized schema theory to argue that writers develop specific schemata for argumentation, which are difficult to alter after becoming highly entrenched. Thus, many of the studies utilizing schema theory investigated argumentative genre acquisition. Notably, one study (Kardash & Howell, 2000) utilized cultural schemata as a lens through which to study how students' epistemological and topic-specific beliefs impacted the reading comprehension strategies they used.

Other Cognitivist Theories

About 10 of the 43 studies (22%) adopted cognitivist theories other than information processing and schema theory in their research. Three studies utilize classical decision theory (Baron et al., 1993; Baron, 1995; E. M. Nussbaum, 2008) and two cognitive dissonance theory (Knobloch-Westerwick, Johnson, et al., 2015; Knobloch-Westerwick & Lavis, 2017). Other theoretical frameworks include cognitive dispositions theory (Uzaveric, et al., 2017), cognitive development theory (Mason & Scirica, 2006), exemplification theory (Knobloch-Westerwick, Mothes, et al., 2015), skilled memory theory (Wiley, 2005), and discourse knowledge (Malpique & Veiga-Simão, 2016). The timeframe of theories in this category demonstrates the widest range, from 1993-2017, as

may be expected given such a wide variety of options. Taken as a whole, cognitive theories were used as theoretical lenses in 79% of myside bias studies included in this review. This indicates that the phenomenon has been studied most often, and for the longest period of time, as a cognitive issue; furthermore, cognitivist lenses likely resulted in missed analysis of social factors.

Dialogical Argumentation Theories

Finally, 11 of 43 (26%) studies, published mostly in the latter third of the review period, adopted a form of dialogical argumentation theory to study myside bias. In this category, theoretical frameworks approached argument as a dialogical rather than monological activity. While cognitive theories emphasize the process and products of the individual mind, dialogical argumentation theories instead attend to the important role that dialogue, a social interaction, plays in argument. The increased use of dialogical argumentation theories over time indicates an increased interest in the effects of social contexts and multiple perspectives on bias shifting. Researchers in this category utilized theoretical and conceptual frameworks such as collaborative argumentation (Golanics & Nussbaum, 2008), Toulmin argumentation (Qin & Karabacak, 2010; Radhakrishnan et al., 2010; Stapleton & Wu, 2015), the argumentative theory of reasoning (Castelain et al., 2016; Trouche et al., 2016), dialogue and self-regulated strategy development (Song & Ferretti, 2013), and dialogical argumentation (Lin et al., 2015; E. M. Nussbaum, 2008; E. M. Nussbaum & Edwards, 2011; Rusfandi, 2015).

This review demonstrates that cognitivist theoretical lenses clearly dominate the reviewed literature. A weakness of cognitive theories is their focus on myside bias as a

primarily cognitive problem to the exclusion of sociocultural factors. Increased use of dialectical lenses in more recently published studies suggests that researchers are beginning to examine sociocultural factors at stake in myside bias. This observation aligns with what some have called the Social Turn (Gee, 1999), wherein researchers underscore the important role sociocultural theories play in our understanding of human learning.

Methods, Participants, and Contexts of the Reviewed Studies

In this section, I discuss findings related to research paradigms and designs as well as trends regarding participant and context characteristics in the reviewed studies of myside bias.

As Table 1 demonstrates, myside bias has been almost exclusively studied through quantitative research designs and methodologies. Since the Social Turn (Gee, 1999), sociocultural theoretical lenses have been applied to the study of many phenomena and this paradigmatic shift has often incited the application of qualitative methodological approaches. Yet the glaring omission evident in Table 1 is the absence of qualitative methods throughout the literature on myside bias. Other than four mixed-methods studies which utilized a qualitative phase, the reviewed literature collectively demonstrates a focus on experimental methodologies with large sample sizes, statistical analytics, conducted in laboratory settings. This is surprising given the past decade's emphasis on argumentation as a dialogical, epistemological, and cultural phenomenon.

Table 2 illustrates another interesting finding regarding participant types. Over

Table 1*Methods Used to Study Myside Bias by Paradigm*

Research designs			
Quantitative		Mixed methods	
Design	<i>n</i>	Design	<i>n</i>
Experimental	29	Design-based experiment	2
Descriptive	3	Explanatory-sequential	1
Quasi-experimental	2	Descriptive	1
Correlational	2		
Online survey research	2		
Eye-tracking	1		
TOTAL	39 studies (91%)	TOTAL	4 studies (9%)

Table 2*Summary of Contexts and Participant Types Studied in the Myside Bias Literature*

Participant locales	<i>n</i>	%	Participant types studied	<i>n</i>	%
U.S.	29	67	Undergraduate students	27	63
China	2	5	Middle-school and/or high-school students	6	14
New Zealand	2	5	Adult non-students	4	9
Taiwan	2	5	Elementary-school students	2	5
Canada	1	2	Combined undergraduate and graduate students	2	5
Germany	1	2	Combined undergraduate and high-school students	1	2
Guatemala	1	2	Graduate students	1	2
Indonesia	1	2			
Iran	1	2			
Italy	1	2			
Portugal	1	2			
UK/France/Spain	1	2			

63% of studies utilized undergraduate students as participants, and in 35% of cases, these participants were recruited from introductory psychology courses. Further, 91% of studies investigated myside bias in educational settings running from elementary to graduate school and 72% of those contexts were postsecondary. As an obstacle to

evidence-based reasoning, it is logical that myside bias would be studied primarily in educational contexts.

Several other participant characteristics trends are worth noting. For example, myside bias was identified as a prevalent problem in all populations studied regardless of age or culture, including one study conducted among an Indigenous Mayan population (Castelain et al., 2016). Additionally, nearly 12% of studies were conducted with EFL students. Reporting of participant characteristics, particularly among experimental studies, was poor. Reporting of ethnicity was relatively rare. Further, 30% of studies did not report the gender of participants, yet among those that did report, about 47% demonstrated female overrepresentation among participant samples.

Geographically, the reviewed studies took place in 15 different countries and at least 27 different states within the U.S.

Factors Contributing to Myside Bias

The goals of this literature review were to identify factors implicated in myside bias and pedagogical strategies that work against it. Primary findings indicate the important roles that argument schema, cognition, and metacognition play in producing, maintaining, and mitigating myside bias. This section presents each of these factors in turn and is then followed by a discussion of their pedagogical implications.

Argument Schema

A prominent theme throughout the relevant literature is the role argument schema plays in myside bias, and schema theory undergirds a large proportion of studies

investigating the phenomenon. Several researchers (Britt et al., 2007; Britt & Larson, 2003; Wolfe & Britt, 2008; Wolfe et al., 2009) define an argument schema as “a learned, culturally derived set of expectations and questions about argumentative texts” (Wolfe, 2012, p. 479) used when composing or comprehending a written argument. They link argument schema to myside bias by theorizing that

one possible source of poor argument writing is that the writer has a deficient argument schema, thereby making it unlikely that important subgoals will be created. For example, if one has a minimalist argument schema that has slots for only a claim supported by a single reason, then the important subgoals of including backing for reasons and rebutting other-side information will be absent. (Wolfe et al., 2009, p. 185)

At its most basic, an argument is defined as a claim supported by one or more reasons (Wolfe, 2012). The strength of the claim is typically evaluated by the quality of evidence and reasoning with which support it. (Stapleton & Wu, 2015; Wolfe, 2012). An argument built on this definition alone, however, would be a prime example of myside bias in its single-minded support of a claim and inattention to counterclaims. Proficient arguments, on the other hand, include consideration of counterarguments and counterargument data, rebuttals and rebuttal data, backing of warrants, concessions, and qualifiers (Toulmin, 1958).

Twelfth-grade Common Core State Standards for argument writing address these otherside elements directly, requiring students to:

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases. (National Governors Association Center for Best Practices and Council of Chief State School Officers [NGA Center and CCSSO], n.d.)

However, recall that the most recent national assessment of the persuasive writing

of twelfth-graders (National Center for Education Statistics, 2012) indicated that only 27% of students demonstrated proficiency, suggesting that nearly three-fourths of graduating seniors are unable to write arguments that accomplish these tasks. Entrenched argument schemas that focus on the writer's support of a claim, with little to no consideration of alternative perspectives, has been repeatedly noted in secondary contexts (Malpique & Veiga-Simão, 2016; E. M. Nussbaum & Edwards, 2011; Stapleton & Wu, 2015).

The problem extends into postsecondary contexts. Based on several studies of myside bias among undergraduates, Wolfe and Britt (2008) have argued that a majority of college students

Fail to provide relevant, elaborated support for their claims...and many less skilled writers of argumentative essays fail to address arguments contrary to their own positions, a shortcoming referred to as the myside bias. (Wolfe et al., 2009, p. 183)

Evidence of this problem among college writers is further suggested by a study (Clark & Hernandez, 2011), which found that college undergraduates will consistently resort to the so-called "five-paragraph essay" when asked to write an argument. The five-paragraph essay is a hallmark of secondary English curriculum and consists of an introduction containing a "thesis," three body paragraphs containing supporting evidence for the thesis, and a restatement of the thesis in the conclusion. Oppositional claims and evidence are not traditionally featured in the five-paragraph essay. In their study of FYC student arguments, Clark and Hernandez assert that "perhaps the most significant finding in regard to structure was the tenacity with which a significant percentage of students held on to the 5-paragraph essay form" (p. 74). While the five-paragraph essay arguably

serves important pedagogical purposes, a “tenacious” reliance upon its structure can serve to promote or even *demand* myside bias.

This fact suggests that careful consideration of how myside bias is operationalized and assessed is necessary. Many studies discussed in this review measure myside bias through the presence/absence of counterarguments, or quantitative comparisons between a writer’s reasons supporting the claim and counterarguments against it (Gol, 2013; E. M. Nussbaum & Kardash, 2005; Song & Ferretti, 2013; Toplak & Stanovich, 2003; Wolfe & Britt, 2008; Wolfe et al., 2009; Wolfe, 2012; Yen & Wu, 2017). Though this is a common measurement technique across the literature, such methods often rely on writers’ textual products alone as evidence of myside bias. This is questionable practice in light of the Clark and Hernandez (2011) study because writers likely employ the genre norms with which they are most familiar. This raises the possibility that a writer’s exclusion of counterarguments may not be evidence of myside bias—rather, such behavior may instead suggest that the writer’s argument schema has not yet acquired counterarguments as crucial features of the genre.

The following subsections discuss argument schema as a factor in myside bias. Argument schemas, as mental models, affect how a writer gathers evidence and both generates and evaluates arguments. Well-developed argument schemas lead writers to address otherside claims in writing and to judge arguments which also do so as being high-quality. As might be expected, a person’s language proficiency and cultural discourse norms can also impact his or her argument schema.

Genre Acquisition and Discourse Knowledge

Importantly, explicit instruction in the elements of argument has succeeded in reducing myside bias. For example, Wolfe et al. (2009) conducted a series of three studies with college students in which they first illustrated that arguments rebutting otherside information led to better reader-ratings of agreement, quality, and impression of the author than those that did not. Next, they found that argument agreement was driven by the claim, whereas judgments of argument strength were driven by the quality of reasons and evidence. Finally, a brief tutorial explaining an elaborated argumentation model, including primary and secondary argument elements, significantly improved essay quality. E. M. Nussbaum and Schraw (2007) similarly found that while spontaneous counterargument and rebuttal generation was rare in college student arguments, explicit instruction in qualities of good arguments improved the argument complexity and attention to alternate perspectives. They note that without training, students were significantly more likely to produce reasons supporting their claim; however, training resulted in students producing significantly more counterarguments to their own claims.

Other studies have also identified links between students' argument schemas and myside bias. In their study of junior high-school students' argumentation, Malpique and Veiga-Simão (2016) found that discourse knowledge positively correlated with argument writing quality. Students' unsophisticated knowledge of the characteristics of argumentative writing resulted in a focus on their personal opinions when writing. On the other hand, students who were able to verbalize processes involved in argumentative

writing produced higher quality texts. Qin and Karabacak (2010) found similar effects in a Chinese university writing context, in which students focused on primary argumentative elements (claim and reasons) yet were far less proficient in secondary elements (counterarguments, rebuttals, and qualifiers). Without explicit training in the elements of argument, 55% of students demonstrated a myside bias by attending primarily to their own claims and supportive reasons. Myside bias is apparently more likely to occur when writers have not received explicit instruction in the argument genre.

This is good news for teachers because it indicates instruction can play an important role in myside bias shifting. Several studies suggest that argument schemas are summoned by task-specific stimuli. As we might imagine, an argument schema is typically evoked *in reading* through a provocative claim (Britt & Larson, 2003). But *in writing*, it is evoked by several things: the assignment demands, the writer's expectations about audience, and the writers' goals (Wolfe, 2012; Wolfe et al., 2009). Assignment descriptions and rhetorical awareness activities are curricular design elements teachers can adapt to encourage myside bias mitigation.

A crucial development in myside bias research is described in Wolfe's (2012) research on individual differences in argument schema. Wolfe reports three studies in which he first developed a reliable 15-item Likert-style instrument that taps argument schema in order to predict myside bias. The instrument assesses the extent to which one possesses a "fact-based" versus a "balanced" argument schema. A fact-based argument schema is based in an "uncritical belief that facts alone make an argument good" (p. 480) and demonstrates that "little or no understanding of the audience or appreciation of

context, the role of counterarguments, or alternative explanations. For these people, argumentation is simply a matter of presenting facts with little regard for other aspects of argumentation” (p. 480). Balanced schemas, conversely, suppose a “preference for arguments that acknowledge more than one side” (p. 480). Possessing a balanced argument schema entails respect for arguments that address and rebut opinions that may contradict the thesis or claim being forwarded. In the second and third studies, Wolfe tested the instrument, finding that it predicted myside bias in reasoning and written argumentation. In three studies, Wolfe cites Cronbach’s alpha results of .82, .84, and .80 for the 10 fact-based schema items and .79, .78, and .81 for the 5 balanced schema items, which he asserts are “reasonably solid evidence for the reliability of these measurers” (p. 482).

In combination with the predictive instrument, which I used to measure myside bias in the current study, this literature provides useful insights with which to further investigate myside bias. Explicit instruction in the argument genre and towards balanced consideration of alternative sides has been shown to minimize myside bias. Therefore, I incorporated these principles in the design of a curriculum geared to reduce it.

Conceptions of Argument Quality

Of further note in the discussion of argument schema is the important issue of how “quality argument” is conceptualized by writers, and on this subject, research demonstrates some discrepancies. For example, an early myside bias study examined the phenomenon through the controversial subject of abortion. Baron’s (1995) study with undergraduates on tasks in which participants generated reasons for claims determined

that they “considered one-sided thinking to be better even when they clearly understood they were evaluating thinking about one’s own opinion rather than the power of argument” (p. 14). Students rated the one-sided arguments they were presented with higher than two-sided arguments “even when the student disagreed with the subject” (p. 10). Baron forwards several possibilities for this finding: (1) Novices may believe that experts do not need to provide reasoning for their claims and that consideration of alternatives suggests a lack of expertise; (2) Institutions, “such as organized religions,” (p. 14) may forward the notion that seeing alternative perspectives is confusing; and (3) The view that being “committed,” generally, is a virtuous trait—may be overextended. This directly contradicts the finding by Wolfe et al. (2009) cited above wherein two-sided arguments were considered to be of higher quality.

A possible explanation for these contrary findings again lies in schema theory. Both the Baron (1995) and Wolfe et al. (2009) studies used controversial topics (abortion, creationism, and death penalty, for example) to assess myside bias, suggesting that controversiality did not play a role in differing outcomes. Yet Wolfe and Britt (2008) have argued that “for many people the myside bias is rooted in a deficient argumentation schema rather than an easily corrected misconception” (p. 21). They attribute the problem to the fact-based argumentation schema, in which a claim is considered good when it can be factually proven. Wolfe and Britt assert that “sophisticated writers have a deep and contextual understanding of the role and importance of support in argumentation. However, less sophisticated writers appear to believe that argumentation is simply a matter of lining up facts” (p. 22).

Contradictory findings may also be the natural result of differing contexts: Though all studies were conducted with college undergraduates, the populations studied are separated by a fourteen-year gap, as well as disparate geographical spaces, for example. Regardless, the latter studies also found that, across multiple controversial topics, perceptions of argument quality were dependent on “the extent to which the supporting reason [was] favored” (Wolfe et al., 2009, p. 197), and that even when judging disagreeable arguments as high quality, people are still unlikely to be persuaded by them. These researchers have pointed to such findings as evidence of the important role that argument schema plays in myside bias.

Another study (Stapleton & Wu, 2015) demonstrates the effect of argument schema on myside bias by distinguishing between argument structure and substantive quality. Utilizing a mixed-methods approach, researchers investigated whether arguments structured according to genre norms necessarily met standards for quality reasoning. A researcher-developed instrument, the Analytic Scoring Rubric for Argumentative Writing (ASRAW), demonstrated that, even when both primary and secondary elements of argumentation are present, the quality of argumentative reasoning may still be subpar.

The ASRAW measures the presence, logicity, and relevance of six primary argumentation elements: claim and claim evidence, counterargument and counterargument evidence, and rebuttal and rebuttal evidence. In their analysis of a purposive sample of high-school student arguments adopting all the requisite structural elements of argument, the authors demonstrate that an argument can appear to incorporate alternative perspectives through its surface structure, by including

counterarguments, yet still remain biased in its reasoning. For example, the researchers found three distinct kinds of arguments which all contained important argument components (such as counterarguments, typically viewed as evidence of balance in arguments), yet variable degrees of reasoning quality. Problems included failure to rebut all counterarguments, non-aligned rebuttals, poor rebuttals, and weak overall reasoning. This suggests that myside bias can still be present in arguments containing all the requisite structural elements of argument. Explicit instruction in the elements of argumentation, then, is no guarantee that myside bias will shift.

English Language Learners

A final consideration regarding argument schema is the role of native language proficiency and cultural discourse norms in myside bias. Three studies conducted in China, Iran, and Indonesia respectively shed light on the additional strain placed on second-language writers of argument as they negotiate language and cultural discourse barriers in generating argumentation.

Qin and Karabacak (2010) asked undergraduates to write a timed (50 minutes) Toulmin-based argument after 25 minutes of reading information on both sides of two controversial topics about the Internet and computers. Myside bias was found: 55% of students produced only primary Toulmin elements (claims and reasons) while 45% included secondary elements such as counterarguments and supporting evidence, rebuttals and supporting evidence. Mean use of all elements across 133 participants on the two topics combined convincingly demonstrate this trend: claims ($M = 1.68$, $SD = .99$), reasons ($M = 4.15$, $SD = 1.99$), counterarguments ($M = .68$, $SD = .90$),

counterargument evidence ($M = .15$, $SD = .67$), rebuttals ($M = .35$, $SD = .67$), and rebuttal evidence ($M = .18$, $SD = .61$). These results indicate that students were most prolific in reason generation, with claims a close second—yet generation of counterarguments and supporting evidence as well as rebuttal and supporting evidence was abysmal, with less than one of each on average, suggesting a tendency toward myside bias.

This same result was found in Gol's (2013) study, requiring Iranian ELL undergraduates to write argumentative essays in English and in Persian, with no time restrictions, and then conducted follow-up interviews. Myside bias was documented in essays written in both L1 and L2 contexts, yet 62.5% of Persian essays were balanced (including counterargumentation), whereas only 45% of essays composed in English were deemed balanced.

This difference likely points to the impact of language proficiency and increased cognitive load. Working in English likely reduced cognitive space available for counterargumentation, thus increasing myside bias in L2 tasks. Perhaps more interestingly, Gol (2013) notes that many cross-cultural writing studies neglect to study writing patterns in both languages, as rhetorical patterns often differ culturally. Investigations, therefore, need to study composition in both languages in order to isolate the role that rhetorical traditions play and to “determine whether the rhetorical pattern is transferred from the native language” (p. 2018). Gol recommends explicit instruction in argument for L2 students, noting that “instructions on myside bias need to be given directly to the students...passive teaching cannot be effective” (p. 2022), hearkening back to Wolfe's (2012) assertion that explicit instruction is crucial in altering students'

argument schemas towards balanced argumentation and away from myside bias. suggests the important role of explicit instruction for L2 writers of argument.

A final study incorporated Gol 's (2013) recommendation for dual language writing and found that over 25% of undergraduates who neglected to refute counterarguments in English did so in their L1 essays (Rusfandi, 2015). Though myside bias was confirmed in both L1 and L2 essays, 35% of English essays and 51% of Indonesian essays addressed otherside views; this indicates that myside bias was found to be more common in L2 than L1 arguments, a finding that parallels Gol's results. Both studies found that ELL argument writers face even more difficulty in composing arguments free from myside bias than their native-speaking counterparts due low L2 proficiency as a factor. Additionally, both researchers note that discourse norm variations between cultures are a possible factor. Rusfandi argues,

English is often described as writer-responsible...in terms of written argumentative structure, while other languages such as Chinese and Indonesian adopt a more implicit form of dialogue between a writer and his/her imagined readers as indicated by the use of indirectness and implicitness of information (p. 183).

This leads to a third similarity between the Gol (2013) and Rusfandi (2015) studies: both researchers, referencing cultural variation in discourse norms, suggest that explicit instruction in the development of multi-sided argumentation is a pedagogical imperative for assisting ELL writers in the avoidance of myside bias.

Argument schema plays a role in myside bias by impacting a reader's gathering of evidence, as well as evaluation and generation of arguments. Evidence suggests that entrenchment in the 5-paragraph essay form may prevent undergraduate writers from

considering alternate perspectives when writing arguments. A fact-based schema (which uncritically assumes that facts alone make a strong argument) increases the likelihood that one-sided arguments will be generated or judged positively—while a balanced schema (which prefers arguments that acknowledge multiple sides) decreases the likelihood that one-sided arguments will be generated or judged positively. Furthermore, argument schemas can become more balanced when explicit instruction in the genre’s norms and qualities occurs, and such balance has been shown to decrease myside bias—though such shifts are not guaranteed and are particularly unlikely in cases where opinions have already been set. Additionally, multiple studies have demonstrated that low language proficiency is a likely factor in ELL writers’ myside bias when working within their L2; perhaps more importantly in the context of the current study, studies of L2 writers highlight the role that varying cultural discourse norms can play in myside bias, suggesting that explicit instruction is especially critical for EFL writers. Cognition, which is discussed in the next section of this review, poses a related and important factor in the phenomenon.

Cognition

A second major factor found to contribute to myside bias through a review of the literature is cognition, defined as “the process or result of recognizing, interpreting, judging, and reasoning; knowing” (Harris & Hodges, 1995, p. 34). Given this denotation, it is unsurprising that myside bias researchers have relied heavily on cognitivist theoretical frameworks and methods, on the theoretical assumption that reasoning and biases are grounded in individual cognition. Though many would question the notion of

“individual cognition” altogether, instead arguing that all cognition is social, cultural and tool-dependent, cognitivism has nonetheless underscored a majority of empirical studies of myside bias. This next section discusses cognition as a factor implicated in myside bias by the relevant literature. It specifically addresses the role that goals, background knowledge, memory, prior topic-specific beliefs, and information exposure time play in myside bias. The section concludes by discussing empirical findings on the relationship between cognitive ability, decoupling, and myside bias.

Goals and Motivations

The reviewed literature suggests several keyways that goals function relevant to the current study: they shift myside bias both up and down, they are tied to beliefs and identities, and they can be altered through prompting and social interactions.

Klaczynski et al. (1997) found that while information processing style (rational vs. intuitive) plays a role in biased thinking, general intelligence does not produce objectivity because goals play such a pivotal role in biases. Put more simply: goals impact the ways in which we reason. In four experiments with college students, these researchers first identified participants' occupational aspirations. They then presented them with arguments and evidence that either threatened or enhanced their life plans, finding that “on a moment-to-moment basis, participants ‘changed the rules’ of evidence evaluation as a function of the conclusions presented in the problems” (p. 481). This study demonstrates that the cognitive effort exerted in evidence evaluation is likely determined by goals; goal-threatening evidence led to more sophisticated reasoning tactics than did goal-enhancing or goal-neutral evidence, which was “readily assimilated

to preexisting belief systems” (p. 481).

The propensity toward protecting personal views is emblematic of a consistent finding within myside bias research: persuasion goals (whether persuading oneself or others) deteriorate reasoning skills while consensus goals enhance them. At least two experiments with college students have led to this finding. In one study (Felton et al., 2015), students were placed in either a persuasion or consensus condition in an online discussion and asked to discuss their views on capital punishment and then write an essay. Students in the consensus condition were more likely to mention counterarguments to their position and integrate their dialogue partners’ claims than those in the persuasion condition. Similarly, E. M. Nussbaum and Kardash (2005) asked college students to write essays on television’s impact on violence, with half of the students asked to persuade and half asked to provide a balanced argument. Instructions to persuade had a negative effect on holistic quality score and supporting reasons for counterclaims, and students in the persuasion condition generated rebuttals even less frequently than counterarguments. These studies suggest that persuasion goals increase myside bias by making the writer’s views a priority, while consensus goals reduce it by encouraging fuller consideration of alternate views.

Castelain et al. (2016) demonstrated that consensus goals reduce myside bias through the use of dialogical activity, even in Indigenous populations. Questioning whether the phenomenon was an effect of what they interestingly term WEIRD (Western Educated Industrialized Rich Democratic) culture, or the culture of westernized schooling, they investigated myside bias in an Indigenous Mayan population in

Guatemala. In two pre-post experiments of the same design, they tested participants' reasoning in conservation tasks "designed to assess understanding of physical quality invariance across physical transformation" (p. 339). Participants justified their decisions while working together toward a consensual solution for the conservation task and think-aloud protocols demonstrated that individual argumentation was marked by the myside bias yet improved significantly with discussion.

However, the social element of reasoning may have a darker side, as Winter et al. (2016) have suggested in their study of motivational impacts in news selection on social media. Because readers pay attention to "likes" from friends and others on worthwhile news reading, a bandwagon tendency in discussions can influence exposure to citizens' information on politics and public affairs. In their study, the researchers first identified college students' stance on the U.S. National Security Agency's intentions to surveil citizens' phone calls and other online communications. Participants were then exposed to websites on the topic of government surveillance, including arguments clearly for, against, or balanced towards the initiative with social recommendations operationalized as number of Facebook likes. Participants were then primed for one of three motivational goals before reading in anticipation of an upcoming discussion: (1) an accuracy motivation (emphasis on accurate logic and reasoning, (2) a defense motivation (emphasis on justifying one's own opinion), or (3) an impression motivation (emphasis on making a positive impression by demonstrating agreeableness).

The results of this study highlight the importance of both goals and social cues in biased reasoning, particularly in today's interactive social media environment. As might

be expected, they found that a defense motivation exacerbates myside bias while an impression motivation leads to preference for well-liked articles. The study also found that, generally, undergraduate readers preferred articles supporting their own views but also balanced articles and articles favored by other readers. Perhaps most importantly, the researchers found that an accuracy motivation did not lead to preferences for balanced articles or articles inconsistent with participants' views. These findings suggest that in social media-driven political information environments, myside bias thrives when defensive goals reign yet can be mitigated under an impetus to appear agreeable. Disturbingly, however, they also suggest that a motivation towards logical and accurate reasoning will not produce a preference for balanced or otherside information.

The implications of these findings are critical to the current study, which operationalizes myside bias as a process of gathering, evaluating, testing, and generating arguments and evidence in a manner biased toward one's opinions. People typically reason in goal-relevant ways and are more likely to scrutinize evidence when it contradicts their views. If undergraduates generally news articles which align with their views, or balanced articles they perceive to be well-liked by others, they are more likely to gather, evaluate, and test the information they encounter in a biased way. Coupled with social media platforms' production of misinformation echo chambers (Americans at Risk, 2019; U.S. Senate Committee on Commerce, Science, & Transportation, 2019), myside bias likely becomes more entrenched over time, the longer young adults spend in social media silos. Results also suggest, however, that social interactions can potentially mitigate the problem in cases where "well-liked" information happens to be balanced, yet

the motivation towards accurate and logical information alone will not necessarily reduce myside bias.

Background Knowledge

The reviewed literature suggests that balanced background knowledge mitigates myside bias and encourages balanced argumentation, especially in cases where learners possess minimal knowledge on a subject, by reducing heuristic reasoning based on prior beliefs. Thus, curricular designs which provide students with exposure to balanced information on an issue are likely to reduce myside bias.

Combining goals with the important issue of background knowledge, Golanics and Nussbaum (2008) conducted a study in which undergraduate students were placed in groups of three to discuss issues (standardized testing and school uniform policies) in private online forums for three days and then assigned to write arguments. Demographic and attitude surveys captured prior opinions. Half of the groups were given elaborated questions (questions providing background information) while half were given unelaborated questions merely soliciting opinions. Half of each group also randomly received instruction to generate as many reasons as possible to justify a position.

Findings demonstrated that instructions detailing the issue (including arguments and counterarguments) provided students, especially low-knowledge students, with additional background knowledge as well as clearer goals in argumentation, resulting in more balanced arguments. Scoring was accomplished through coding three variables: argument development, balance, and exploratory discourse. Two coders, blind to condition, coded and then resolved disagreements through discussion, achieving an inter-

rater agreement of 62% on development, 74% on balance, and 77% on discourse before discussion; however, all transcripts were double scored and post-discussion scores were used, resulting in a higher degree of reliability. The reason generation task seemingly benefitted students with high-issue knowledge. These results suggest the importance of providing elaborated prompts in establishing appropriate student goals. They also indicate that balanced background knowledge reduces myside bias and increases balanced argumentation.

Four studies conducted by Wiley (2005) further demonstrate the important role background knowledge plays in mitigating bias. These studies, completed at three different universities in the U.S., found that a myside bias in recall might be a function of prior background knowledge of a subject. The first study asked a mixture of undergraduate, graduate, and law students to rate their opinions on controversial issues, write what they remembered, take a knowledge test, rate an argument's strength, and then finally indicate their individual position. Background knowledge moderated myside bias and readers with little knowledge of the subject were significantly more biased in their argument recall, demonstrating that background knowledge can assist in bias mitigation. The second study replicated this effect with an undergraduate population at the same institution. The third and fourth studies, interestingly, conducted with undergraduates on two different campuses from the first two studies, found that "when arguments were presented in a point/counterpoint fashion, low-knowledge readers no longer experience bias in favor of their position" (p. 105) and recall patterns for both knowledge groups were comparable. Wiley suggests that readers with minimal background knowledge on

the subject “seem to use their position on an issue as a heuristic for remembering arguments” (p. 105). Such findings imply that helping students build background knowledge reduces heuristic reasoning based on prior beliefs and encourages balanced argumentation.

This implication is amplified when considering where students most often turn to find and understand the world around them, as information presented in a balanced format

rarely occurs in the popular news media. One can imagine that biased information acquisition is part of a vicious cycle, where more supporting arguments are integrated into a reader’s situation model, which in turn leads to biased memory for information, which in turn could affect the processing of future messages and future decision making. (Wiley, 2005, p. 105)

This points to the importance of teacher intervention to reduce myside bias during gathering and evaluating stages of argumentation through curricula intentionally designed to build students’ background knowledge in a balanced way.

Working Memory, Cognitive Load, and Cognitive Ability

Several studies suggest agreeable arguments are more memorable arguments. Thus, high cognitive load contributes to myside bias by decreasing the amount of available working memory with which to comprehend and generate arguments, resulting in a dependence on what’s left: preexisting arguments and evidence. Given the reliance of working memory upon cognitive ability (Stanovich & West, 2007), it may seem likely that the latter is implicated in myside bias; surprisingly, however, researchers have repeatedly failed to link cognitive ability to myside bias.

As Wiley's (2005) research suggests, working memory influences text evaluation abilities, and other studies back this assertion. Britt et al. (2007) subdivided the critical components of argument (claims and reasons) for further memory analysis, noting that a claim can be separated into theme (topic) and side (for/against), while reasons (or predicates) can be one of two kinds: a *policy predicate* asserting action or behavior (e.g., "should not be legalized") or a *value predicate* addressing the desirability or morality of things or actions (i.e., "is worthwhile"). Tellingly, they found that when participants were asked to read simple arguments (claim and reason), "they were only 63% accurate at recalling the precise predicate compared to 85% accurate at recalling the precise theme they had just read" (p. 75). Furthermore, agreeing with an argument impacts memory more than disagreeing. This suggests that recalling a claim's generalized topic is simpler than recalling its exact stance. This can lead to myside bias, as pre-established opinions are easily summoned upon exposure to a topic, and exposure alone and may invoke schema that discourage entertainment of alternatives. This was demonstrated in Wiley's study, as undergraduate students struggled greatly to remember brief arguments they had just read, while memory was stronger for arguments that aligned with their opinions.

These findings have serious implications for myside bias and for instructional interventions designed to mitigate it. Britt et al. (2007) note that losing the verbatim representation is not troublesome in many reading contexts because comprehension and problem-solving can proceed upon gist (more durable but less accurate) representations, citing participants' 99% accuracy with narrative phrases. However, a reliance upon gist representations in argumentative prose becomes problematic given the specificity

required to effectively analyze claims, evidence, counterarguments, and rebuttals.

Yet in argumentation, where students are required to focus closely on source synthesis while simultaneously learning new genre norms, working memory is easily overtaxed and this leads to high cognitive load. In the aforementioned study by E. M. Nussbaum and Schraw (2007) linked to schema theory, the researchers also found that undergraduates' use of graphic organizers reduced cognitive load in a timed essay writing task. Cognitive load was assessed through ANOVA comparisons between participants in one of two conditions: argument instruction or argument instruction with graphic organizer use. The graphic organizers provided students with spaces for an argument and supporting reasons, and a counterargument and supporting reasons, resulting in a final conclusion. Fifty percent of participants in the graphic organizer condition rebutted counterarguments, while almost no participants in the nongraphic-organizer condition did. These results suggest that alleviating cognitive load may enable students to manage the complex tasks of refuting, weighing, and synthesizing claims, which can lead to myside bias reduction.

Other studies confirm this finding. E. M. Nussbaum (2008) tested the effects of graphic organizers on undergraduate argument-counterargument integration and found that 67% of essays utilizing them were integrated, while in the control condition, only 29% of essays were integrated. Crucially, after the graphic organizers were removed, these same effects were not achieved, suggesting that the tools helped students recall and integrate information. Expanding into a longitudinal study with seventh graders, E. M. Nussbaum and Edwards (2011) tested the efficacy of a specific type of graphic organizer:

Argument Vee Diagrams (AVDs), structured with two different claims on either side of a vee with room for evidence on both sides and leading to a conclusion at the base of the vee. They found that AVDs both “(a) reduce[d] cognitive load by helping reasoners maintain arguments and counterarguments simultaneously in working memory, and (b) assist[ed] reasoners in organizing their thoughts and constructing an integrative argument” (p. 9). Graphic organizers appear to help students avoid myside bias by making it easier for them to organize and include alternative perspectives in written arguments.

That working memory and cognitive load are implicated in myside bias is not surprising, when considering the complexity involved in argument construction. Yet their involvement might erroneously lead to the conclusion that cognitive ability, which “is strongly associated with working memory—the quintessential indicator of computational capacity in cognitive science,” (Stanovich & West, 2007, p. 231), is also a factor. On that front, there is widespread agreement among researchers to the contrary: experimental studies have repeatedly failed to correlate natural myside bias, or myside bias that occurs in the absence of instructions to suspend existing beliefs, with cognitive ability (Klaczynski, 2000; Klaczynski et al., 1997; Macpherson & Stanovich 2007; Stanovich & West, 2007, 2008a, 2008b; Toplak & Stanovich, 2003). Stanovich and West (2007) note that their surprise with this repeated finding is due to the fact that “intelligence indicators have correlated with a plethora of cognitive/personality traits and thinking abilities that are almost too large to enumerate” (p. 240). They suggest that

in a naturalistic reasoning situation, participants of high cognitive ability may be no more likely to *recognise* the need for decontextualisation than are participants

of low cognitive ability. Receiving instructions to decontextualize may short-circuit the need to exercise the higher-level thinking dispositions that make one prone to recognise situations where detachment might be advantageous...To understand the sources and correlates of natural myside bias it is possible that investigations need to focus less on cognitive ability and more on epistemic regulation at the intentional level of analysis. (pp. 240-241)

Decontextualizing a reasoning task from beliefs requires metacognition, or thinking about one's own thinking, a subject discussed in detail later in this review.

Prior Topic-Specific Beliefs, Information Gathering, and Exposure Time

Several studies (Kardash & Howell, 2000; McCrudden & Barnes, 2016; Song & Ferretti, 2013) demonstrate that students inconsistently evaluate arguments based on the argument's alignment with their own prior topic-specific beliefs (i.e., pre-existing beliefs on specific topics such as nuclear power, abortion, or presidential elections), which demonstrates myside bias. Importantly, prior topic-specific beliefs not only affect myside bias by governing evaluation practices, but also through their effect on a writer's information gathering practices, as the studies discussed below indicate.

Knobloch-Westerwick, Johnson, et al. (2015) demonstrate the role of prior beliefs on science topics, finding myside bias across multiple scientific issues. Undergraduate participants preferred messages that aligned with their beliefs which, in turn, resulted in attitude polarization. Exemplars, in the form of vivid case studies, "had a surprisingly limited influence" (p. 595) on attitude shifting, though empathetic participants spent more time viewing them. The researchers suggest that people with high empathy (i.e., who prefer looking at multiple sides of an issue) may be more attracted to exemplars and highlight how a challenge for scientific outreach to the general public is dealing with

preexisting attitudes. They remark, “Once an attitude on a topic has been formed, it can be difficult to attract information consumers to messages that do not align with said attitudes” (p. 596). This situates myside bias a problem extending far beyond the classroom and suggests a human inclination toward information that is opinion-confirming.

While science topics are likely to produce myside bias due to strongly held prior beliefs, political topics may be even more so. Several studies investigate how prior beliefs affect information gathering practices; specifically, they link information exposure time to myside bias. Recall the aforementioned study by Winter et al. (2016), in which selective exposure to political information in social media environments led to a propensity to select news articles that supported participants’ beliefs on politically-charged topics. The following discussion presents findings on the important role exposure time when gathering information, and political information in particular, seems to play in myside bias.

A study by Yen and Wu (2017) sheds light on the role of exposure time in myside bias by investigating the controversial issue of nuclear power in Taiwan. Though nuclear power is technically a scientific issue, science topics involving the environment are often politicized when they intersect with economic concerns. In this study, investigators utilized eye-tracking technology to capture undergraduate participants’ webpage browsing after completing dispositional questionnaires on the topic. Subsequently, participants completed another questionnaire and composed an essay articulating their views on the nuclear power controversy. The researchers found that students who

constructed successful counterarguments paid more attention to otherside websites than myside pages while those who did not construct successful counterarguments varied in their reading habits. Yen and Wu note that

attention allocation played a role in both progress in counterargument construction...and changes in attitude extremity.... Specifically, especially for [the group that didn't construct counterarguments], paying more attention to other-side than myside information led to either progress in counterargument construction or attitude neutralization; on the other hand, spending more time viewing myside than other-side information resulted in attitude polarization or no progress in counterargument construction. (p. 22)

Information exposure time, then, plays a role in myside bias. More time spent attending to myside information strengthens a writer's prior beliefs and reduces the likelihood of counterargument generation. On the other hand, more time spent attending to otherside information increases the likelihood of counterargument generation and/or a reduction in attitude polarization. Graphic organizers, structured to include exposure to multiple sides of an issue, are one pedagogical strategy that could potentially reduce myside bias deriving from exposure time (E. M. Nussbaum, 2008; E. M. Nussbaum & Edwards, 2011)

This finding aligns with research of Knobloch-Westerwick and Lavis (2017), conducted with undergraduate students in the U.S. Participants first completed political ideology questionnaires, watched both serious and satirical news clips in a lab setting, completed another set of questionnaires, and were monitored while perusing sites. Finally, they answered questions regarding their political views on the topics they had just read about: gun control, immigration, and climate change. Findings from this study included the observations that participants with low interest in politics selected more

satirical news clips, news aligned with participants' political views was selected more frequently (demonstrating myside bias), the former result was more pronounced for serious than for satirical news clips, and selective exposure to both serious and satirical news clips reinforced political attitudes. This study thus demonstrates a myside bias in political news selection. The researchers contend that a widespread consensus among modern scholarship holds that political values and information are becoming increasingly viewed as sources of entertainment, and that this "may contribute to trivialization of political topics as a matter of amusement or peripheral importance, or possibly increase alienation or cynicism" (p. 55). This assertion highlights the importance of helping students understand the variation in political and other news reporting sources, and particularly in discussing the rhetorically different purposes of various news reporting entities.

Yet another instance of the impact of exposure on myside bias in politics was investigated through a comparison of the U.S. and German pre-2012 presidential election cycles (Knobloch-Westerwick, Johnson, et al., 2015). Utilizing an online research application that logged reading behavior by recording hyperlink clicks, an experimental study recorded participants' browsing habits as they read news articles on the two elections and then offered a cross cultural comparison. Once again, the researchers noted that exposure time correlated with political attitudes: selective exposure overall was governed by myside bias. Somewhat disconcertingly, though users spent more time with high-credibility sources than with low-credibility sources, credibility did not moderate myside bias. Further, exposure time with attitude-consistent articles strengthened

attitudes across topics. The researchers also found that exposure to attitude-discrepant information weakened initial attitudes, which provides hope for educators who desire students' myside bias mitigation.

On the other hand, such hopefulness might be deflated for educators in the U.S. by the results from the cross-cultural comparison: confirmation bias was found to be stronger in the U.S. political context than in the German context during this pre-election time period. This research suggests that context matters when it comes to biased reasoning in politics. Knobloch-Westervick, Johnson, et al. (2015) opine that “The American context...is characterized by polarized parties and features strongly slanted media outlets, which apparently fosters the seeking of ‘echo chambers’” (p. 505). They contrast this news filtering machinery with the German public broadcasting system, which is more diverse in its treatment of political issues. The implications of these results suggest that educators in the U.S. may have additional obstacles to overcome in helping students overcome myside bias—and that providing exposure to a variety of beliefs and arguments should be a focal activity in that enterprise.

Findings from studies discussed in this section on cognition have important implications for the current study. Goals to persuade (and/or to defend oneself) increase myside bias, while consensus goals reduce it; furthermore, goals can be altered through instruction. Thus, educators might consider defining the goals of an argument-writing task carefully in assignment descriptions and in-class activities. Troublingly, accuracy goals have not been shown to necessarily lead to preferences for balanced or otherside information.

The limitations of working memory easily led to high cognitive load in argument evaluation and generation tasks, which creates a ripe scenario for myside bias, as pre-existing opinions are often deferred to (via heuristic rather than analytic reasoning) in the face of such difficulties. Graphic organizers have been shown to reduce cognitive load and result in the construction of balanced arguments; this may be the result of balancing a student's background knowledge.

Teachers may be tempted to assume that cognitive ability is a factor in myside bias, but several scholars instead point to prior beliefs as a critical factor (Baron, 1995; Dole & Sinatra, 1998; Kardash & Howell, 2000; McCrudden & Barnes, 2016). Empathy can reduce myside bias, but once beliefs have been formed, they can be difficult to alter. Prior topic-specific beliefs, particularly those connected to controversial issues such as science and politics, can increase myside bias. This occurs through evaluation strategies and information gathering practices that neglect evidence or arguments which contradict prior beliefs. More specifically, exposure time to myside/otherside information has been linked to increased opinion polarization (in the former case) and decreased opinion strength (in the latter); additionally, strength of opinion predicts myside bias. Yet, when cued to decouple from prior beliefs, and when explicit instruction highlights the importance of balanced arguments, myside bias can be reduced. This may be due to the fact that "prior beliefs" include not only topic-specific beliefs, but beliefs about the very nature of knowledge and how we come to know, or what are called epistemological beliefs, a subject discussed in detail in the following section.

Metacognition

A final major theme suggested by a review of the literature is the important role that metacognition plays in myside bias. Because the term *metacognition* has been used variously (Flavell, 1985; Hacker, 1998), and in light of calls for clearer defining and operationalizing of the phenomenon (Hofer & Sinatra, 2009), it is used here in its most inclusive form to denote “thinking about thinking at many levels of awareness” (Flower, 1994, p. 225). Metacognition may be the most important factor in myside bias mitigation because it can potentially lead to the use of alternate, balanced strategies for gathering, evaluation, and generation of evidence and arguments. Studies of the relationship between metacognition and myside bias have been conducted in a variety of settings, including among high school students (McCrudden & Barnes, 2016) and postsecondary students (Kardash & Howell, 2000; Song & Ferretti, 2013).

The term *metacognition* is used throughout the current study as an umbrella topic encapsulating several of its more specific aspects, including *epistemological beliefs* and *reflection*, defined below. This section discusses roles these phenomena play in myside bias and in related sociocultural factors: identity and development. It identifies and discusses the pedagogical implications of the literature, including instructions to decouple from one’s extant beliefs, to adopt perspectives, and the roles that reflection and dialogue play in designing pedagogical interventions.

Epistemological Beliefs

It is unsurprising that prior topic-specific beliefs affect our willingness to consider alternate perspectives, as discussed above. Complex and controversial topics are

especially likely to invoke pre-existing and often strongly held beliefs, and the strength and content of prior opinions have been found to predict myside bias (Stanovich & West, 2008a). Supporting this contention is Wolfe's (2012) study previously discussed, which found that strength of opinion predicted myside bias in reason generation supporting claims.

Yet, beyond topic-specific beliefs, the literature suggests that another kind of beliefs altogether—epistemological beliefs—play an important role in myside bias. Epistemological beliefs denote “beliefs about the nature of knowledge and learning” (Schommer, 1998, p. 551). For example, a person might believe that knowledge is certain, ambiguous, objective, subjective, fixed, dynamic, passive, constructive, or driven by authority figures. Regarding learning, one might believe that it occurs quickly or arduously, that it equates to memorizing facts—or alternatively, involves synthesizing multiple perspectives and kinds of information. Klaczynski and Lavallee (2005) hypothesize that differences in epistemological beliefs (which are not assessed in standardized measures of general intelligence) may also explain why cognitive ability does not correlate with myside bias.

Scholars have disputed whether epistemological beliefs are necessarily metacognitive. Hofer and Sinatra (2009) argue that, in order for epistemological beliefs to be considered metacognitive, learners must either be aware of them or using them to regulate their thinking. Klaczynski (2000) instead asserts that epistemological beliefs themselves “are largely metacognitive because the course of one's own reasoning must be monitored and self-regulated to achieve various epistemic goals” that align with

beliefs about “the nature, certainty, and acquisition of knowledge” (1350). Differences across the literature in defining and operationalizing epistemological beliefs pose difficulties in interpreting results across studies; however, enough agreement exists across studies (Baron, 1995; Baron et al., 1993; Kardash & Howell, 2000; Klaczynski, 2000; Klaczynski & Lavalley, 2005; Mason & Scirica, 2006; Wolfe, 2012) to assume that a learner’s beliefs about the nature of knowledge and learning can affect the ways in which, relevant to the current study, they evaluate and write arguments.

For example, epistemological beliefs have been shown to have both quantitative (in terms of time and energy expenditure) and qualitative (in terms of the types of strategies used to evaluate contradictory claims) effects on argumentation, and these differences have been shown to impact myside bias. In their study of how beliefs affect undergraduates’ comprehension strategies when reading multi-sided arguments, Kardash and Howell (2000) investigated the reasons behind a standing observation across several studies of human reasoning: “People tend to distort contradictory information to make it consistent with their preexisting beliefs and attitudes, and to use it to bolster their initially held convictions” (p. 525). They found that a specific type of epistemological belief—regarding the speed, effort, and nature of learning—significantly correlated with both the ways in which learners both recalled and generated text. Students who believed that learning requires time and effort were more likely to accurately recall the text and work to integrate conflicting positions and ideas within it. Alternatively, students who believed learning to be relatively quick and effortless were more likely to distort text during recall and less likely to integrate conflicting positions and ideas found within it. These results

confirm the assertion of Britt et al. (2007) discussed above, that reliance upon gist (as opposed to verbatim) representations in argumentative prose negatively impacts a learner's ability to analyze claims, reasons, counterarguments, and rebuttals. Myside bias becomes increasingly likely when evidence is distorted or ignored.

Equally important to the current study, Kardash and Howell (2000) also found students' beliefs about the speed and effort required to learn correlated with epistemological beliefs about the nature of knowledge itself. Their study found that students who believed learning to be relatively quick and effortless were also more likely to believe "that learning consists of memorizing facts and tended to believe that knowledge can be known with certainty" (p. 530), while students who believed "learning to be a complex, constructive process" (p. 530) were more likely to attempt to integrate evidence into a coherent whole.

Synthesizing this finding with others discussed both above and below suggests that the three thematic categories of this review (argument schema, cognition, and metacognition) are likely related. Results from Wolfe's (2012) study provide a potential link between argument schema and metacognition. Wolfe argues that argument schema (fact-based vs. balanced) is a better predictor of Myside bias than strength of opinion on a given topic; this may be explained by the finding (Kardash & Howell, 2000) suggesting that such epistemological beliefs reduce both a student's accuracy in textual recall and willingness to integrate conflicting ideas into a coherent whole, resulting in Myside bias. Findings from the Kardash and Howell study, then, may indicate that epistemological beliefs are related to the creation, maintenance, and shifting of one's argument schema.

Furthermore, linking metacognition to cognition, Hofer and Pintrich (1997) have suggested a model for how this occurs: epistemological beliefs affect the goals that guide a student's self-regulation. Muis (2007) and Bromme et al. (2009) forward a similar conceptual model, arguing epistemological beliefs "are likely to shape learner perceptions of tasks and thus how the tasks are approached" (Hofer & Sinatra, p. 116).

If so—and if the goal is myside bias mitigation—instruction in sophisticated epistemological beliefs (i.e., acceptance of the substantial time and effort required to learn and the complex nature of knowledge itself), and the learning strategies resulting from such beliefs, may be as important as instruction in the elements of argument. Research has demonstrated that metacognitive strategies are teachable (Schraw, 1998). Educators might be well-advised to consider the suggestion made by Hofer and Sinatra (2009) that, "Perhaps learners are best served not only through the development of rich, flexible, generative knowledge but rich, flexible, generative beliefs" (p. 119).

Decoupling

As mentioned above, people can "table" prior beliefs in order to consider alternatives when explicitly asked, and instruction to shelve prior beliefs has been shown to reduce myside bias (Klaczynski, 2000; Klaczynski et al., 1997; Macpherson & Stanovich 2007; Stanovich & West, 2007, 2008a, 2008b; Toplak & Stanovich, 2003). This behavior, referred to in the literature as "decoupling," or "decontextualizing," requires metacognition; the student must remain aware of her own beliefs and shelve them long enough to evaluate information through a lens in which those beliefs no longer color the way in which she perceives, evaluates, or acts upon information. When

explicitly cued to detach from prior beliefs, scores on thinking disposition (open-mindedness, etc.) and cognitive ability measures do not predict degree of myside bias (Stanovich & West, 2007). These results suggesting cueing may be the critical difference in predicting whether cognitive ability indices are implicated in a tendency toward myside bias. The importance of asking students to decouple from their beliefs as they engage in argumentative research and writing is echoed in these studies as well as others (Klaczynski, 2000; Klaczynski et al., 1997).

Indeed, several studies (Baron, 1995; Gol, 2013; Rusfandi, 2015; Wolfe, 2012) in the myside bias literature suggest students should be explicitly taught that good argumentation demonstrates regard for alternate viewpoints rather than dogmatic adherence to one's position (see Table 3 discussed and shown later in this chapter), which may require the alteration of epistemological beliefs, as discussed above, in order to facilitate a new lens with which to view an issue.

Yet this kind of open-minded approach appears simpler to execute when the issue at the heart of the argument does not involve beliefs in which the thinker is particularly invested. Studies (Stanovich & West, 2007; Toplak & Stanovich, 2003) have shown that myside bias may be topic- rather than person-specific, indicating “it is not *people* who are characterized by more or less myside bias, but *beliefs* that differ in the degree of myside bias they engender—that differ in how strongly they are structured to repel contradictory ideas” (Stanovich & West, 2007, p. 241). They argue that “beliefs already stored in the brain are likely to form a structure that prevents contradictory beliefs from being stored” and that “resident beliefs are selecting for a cooperator—someone *like them*” (p. 858).

Identity and Perspective-Taking

A possible reason decoupling mitigates myside bias lies in a recurring theme across the literature: people's beliefs are often related to their identities. *Identity* denotes “who or what a person or thing is; a distinct impression of a single person or thing presented to or perceived by others; a set of characteristics or a description that distinguishes a person or thing from others” (Oxford English Dictionary). By definition, *identity* presupposes the existence of an “other” in its relational denotation; to be “me,” in other words, is to either be seen by or distinguishable from someone else. What often distinguishes individuals from others are differences in their belief systems, and ironically, belief systems are an inherent part of social grouping. So, while individual identity is embedded in the very name of the phenomenon the current study investigated (*my* side is distinguishable from *others'* sides), it is constructed relationally and in specific sociocultural contexts. Identity does not spring forward in social isolation—it is nurtured and created through a series of experiences with family, friends, and others—thus involving an alignment of the self with like-minded groups who *necessarily* believe differently. Importantly, one's “identity” is a relatively unstable construct; identity changes over the lifespan as these sociocultural contexts alter.

Whether identity is discussed explicitly in the reviewed studies of myside bias or not, it underscores many of their designs and findings as a critically important (though often implied) sociocultural subtext. Consider how, in the studies of political beliefs discussed above, for example, exposure time to myside information was demonstrated to exacerbate myside bias (Winter et al., 2016), while exposure to otherside information has

been shown to mitigate it (Yen & Wu, 2017). In these studies, “information” consisted of texts; however, when “information” is expanded to include oral, visual, or other modalities, it becomes possible to imagine how exposure to information—through specific familial, geographical, and other sociocultural contexts—could operate in much the same way.

Notably, common identity markers—such as one’s political, vocational, scientific, and religious beliefs and affiliations—also happen to be topical categories for many controversial issues, some of which are the ripest for myside bias. Several studies (Klaczynski, 2000; Klaczynski et al., 1997; Klaczynski & Lavalley, 2005; Mason & Scirica, 2006) indicate that identity, and its development over time, are related to an individual’s epistemological beliefs. As beliefs about how we learn and know, it makes sense that epistemological beliefs are at the root of many controversial, identity-laden issues. In fact, people commonly *equate* their identity with an entire belief system, by noting: “I’m a Democrat,” or, “I’m a Christian,” for example.

Religious beliefs are highly related to epistemological beliefs, as they require adherence to ideologies surrounding *how we can know and learn* about the relatively unknowable (i.e., the purpose of life, the existence of a higher power, for example), and what the *nature of that knowledge* (i.e., whether it is faith-based, experiential, scientifically-grounded, for example) may be. Religious identity has been associated with myside bias in interestingly complex ways.

In their study titled, “Are atheists undogmatic?” (Uzarevic et al., 2017), researchers utilized a crowd-sourcing survey instrument delivered electronically

throughout the United Kingdom, France, and Spain. Though data was gathered through a self-report measure, their sizable response ($N = 788$) and anonymity quell concerns over social desirability bias. Their findings include the observation that Christian participants scored higher than agnostics and atheists on what the authors call “dogmatism,” defined as “an inflexibility of ideas, unjustified certainty or denial of evidence contrary to one’s own beliefs” (p. 164) by reporting high certainty in beliefs, even when those beliefs were questioned by contradicting evidence.

The authors cite other empirical work (Sedikides & Gebauer, 2014) that provides “causal evidence that religious beliefs increase when people are confronted with disorder, ambiguity, uncertainty, a lack of control, or a threat to self-esteem” (Uzarevic et al., 2017, p. 164). These findings echo those of studies (Golanics & Nussbaum, 2008; Wiley, 2005) discussed above, in which heuristic reasoning leads to myside bias. However, while myside bias was identified in all groups of the study on religious identity, both atheists and agnostics scored higher on myside bias, followed by Christians—challenging the assumption that religious observers are alone susceptible to biases.

The researchers note several limitations to their findings, including that effect sizes were small, and their Christian sample “may not have been fully representative of a highly religious population” (Uzarevic et al., 2017, p. 169) as they scored moderately on religiosity and demonstrated particularly liberal judgement on several measures. Especially relevant to a discussion of identity, the researchers note that findings may have resulted from the *nature* of the questions asked; claims for which participants were prompted to generate pro/con reasons (i.e., adoption by gay couples and the nature of the

meaning of life), in other words, may have produced the atheists' intolerance of contradiction, as these are issues with which "they critically self-identify (importance of scientific rationality; defense of gay rights) but [would] not necessarily extend to other issues" (Uzarevic et al., 2017, p. 169).

This recalls the assertion of Stanovich and West (2007) that myside bias resides in beliefs, and not necessarily the people who hold them. Uzarevic et al. (2017) highlight the importance of beliefs, noting that

The basic difference in (1) certainty of beliefs and (2) the propensity to consider, appreciate, and integrate different perspectives, even when in opposition to one's own, lies essentially in the distinction between those who believe and those who do not. (p. 169)

The discussion of identity thus far, then, clarifies why instructing students to decouple from their beliefs is an effective way to reduce myside bias: setting aside one's beliefs requires setting aside at least a portion of one's identity—in essence, adopting a persona. Doing so seems to reduce the stakes, allowing the task to become an intellectual exercise rather than a personally fraught battle over beliefs and opinions that are often intensely socially-bound and identity-laden.

This explains why asking students to adopt the perspective of another person has recently and repeatedly been shown to decrease myside bias in argument evaluation (Lin et al., 2015; McCrudden et al., 2017). McCrudden et al. conducted an experiment with undergraduates who were asked to read 12 arguments that varied in relation to their beliefs on the highly controversial topic of climate change. After reading the arguments, participants completed topic belief questionnaires in order to determine their preferences and then placed into one of two conditions: a perspective-taking condition (in which

participants were instructed to evaluate the arguments from a scientist's perspective) or a non-perspective taking condition (in which participants simply rated arguments according to their own perspectives). Results demonstrated that those assigned to adopt a scientist's perspective exhibited reduced myside bias for weak arguments, but not for strong arguments, where argument strength was determined by the time-span of evidence collection "consistent with normative criteria established by the Intergovernmental Panel on Climate Change" (McCrudden et al., 2017, p. 121). The researchers found this promising: simply asking individuals to don other perspectives can reduce myside bias with poorly evidenced arguments, noting that perspective-taking likely helps students apply evaluation criteria more evenly.

Identity and Development

Several studies of the relationship between epistemological beliefs and myside bias suggest a developmental trajectory, whose length is traversed variously and in ways often linked to identity. It is important to note that several studies (Kuhn, 1991; Kuhn et al., 1988) admonish that, "although reasoning biases decline modestly with age, biases nonetheless are characteristic of adolescents and adults (Klaczynski & Lavalley, 2005, p. 2). The path an individual takes regarding development of epistemological beliefs, which have been shown to both increase and decrease myside bias, is highly individualistic. Likely due to a variety of contextual factors, a positive outcome is not guaranteed. When discussing the development of identity, beliefs, and reasoning, it is critical to remain aware of the important role context plays within such development and to interpret claims about these subjects cautiously.

An early exploratory study (Baron et al., 1993) investigated decision-making biases in children and early adolescents aged 7-15 noted a strong myside bias across all ages. Kindergarten, first-, second-, third-, and sixth-grade students, using brief reasoning tasks, and regardless of previous academic achievement, demonstrated myside bias. The researchers found no age or grade effects for myside bias (though this finding is contradicted by other studies discussed later in the review), simply asserting that

many children enter adolescence without a readiness to take probabilities into account, to think of frequencies as relevant to probabilities, or to think about the precedent-setting effects of choices. . . [and] such deficiencies do not seem to disappear by early adolescence. (pp. 43-44)

This description frames these students as holding underdeveloped epistemological beliefs, which led to their subsequent call in the section immediately following the quoted passage for improved school instruction to address the problem. This early work was followed by other investigations of the role epistemological beliefs in biased thinking among a wider range of populations (Kardash & Howell, 2000; Klaczynski, 2000; Klaczynski et al., 1997; Klaczynski & Lavalley, 2005; Mason & Scirica, 2006).

Results from another study contradict the early findings of Baron et al. (1993) and forwards a developmental aspect to myside bias. Mason and Scirica's (2006) study of Italian eighth-grade students identified a myside bias for controversial issues (global warming and genetically modified food) by categorizing students according to their epistemological beliefs. Diagnostic procedures determined which of the epistemological belief levels best represented students' understanding of the nature of knowledge: (1) *absolutists*, who believe knowledge is "absolute, certain, non-problematic, right and wrong, and does not need to be justified since observations of reality or authorities are its

sources” (Mason & Scirica, 2006, p. 494), (2) *multiplists*, believe knowledge is “ambiguous, idiosyncratic, and each individual has his or her own views and truths” (p. 494), or (3) *evaluativists*, believe knowledge is formed through “shared norms for evaluating inquiry and knowing” (p. 494). The researchers assert that these three levels of epistemological belief represent a developmental growth continuum that

encompasses the stages from childhood to adolescence to early adulthood, when individuals move from an absolutist to a multiplist to an evaluative view of knowledge and knowing, although at different individual rates... [and is] characterized by a progressive integration and coordination of the objective and subjective dimensions of knowing. Only at the evaluativist level are these dimensions balanced, without one dominating the other. (p. 494)

Of particular note, no participants holding absolutist epistemological beliefs were identified in this population of Italian eighth graders.

Students then read balanced texts on each controversial issue and were explicitly prompted to write arguments including counterarguments and rebuttals. The researchers found that epistemological beliefs, a “more abstract level of meta-knowing” (Mason & Scirica, 2006, p. 504) significantly predicted higher quality arguments, counterarguments, and rebuttals on these controversial issues—even when controlling for background knowledge and topic opinion. Furthermore, evaluativist epistemological beliefs were associated with the construction of more and higher quality counterarguments “regarding judgments of truth about the social world” (p. 504) on both topics than were multiplist epistemological beliefs. These findings suggest that myside bias is more likely among those who view knowledge and truth as subjective and idiosyncratic; alternatively, it’s less likely among those with more “advanced representations about the nature, source, justification, validation, and appropriation of knowledge” (p. 494), because these beliefs

often lead to examination of alternative perspectives and evidence in order to reason toward judgments. Yet since the study was conducted among students of similar ages and the same grade, the effects of these factors were not addressed; this underscores the highly individualistic way in which epistemological beliefs develop.

It is likely (though not certain) that education, as a developmental factor, can help mitigate myside bias. While Perkins (1985) found that education was only a “borderline statistically significant factor...[though] both level of performance and rates of gain with education were much lower than one would hope” (p. 562), Toplak and Stanovich (2003) argue that “unbiasedness in argumentation may be a malleable cognitive skill that is a function of educational experience” (p. 859). They suggest that how teachers frame and define argument in the classroom, especially over a student’s educational career, is heavily implicated in a student’s propensity toward myside bias. Their research found that year in university predicted myside bias, as “lower myside bias scores were associated with length of time in university... [an effect] not due to differences in age or cognitive ability” (p. 858) but as an independent predictor. Cueing students to detach from prior beliefs may also be the critical methodological difference explaining outcomes from studies suggesting that education has little impact on reasoning (Baron et al., 1993; Castelain et al., 2016).

Klaczynski and Lavalley (2005), in an investigation of the relationship between vocational identity, epistemological beliefs, and bias, conducted a study of students of several different ages and grades, providing another data point on how these factors (and others discussed below) may be involved. They asked junior high, high school, and

college students to identify their intended occupations and then assessed epistemological beliefs through several measures. Students were asked to evaluate hypothetical arguments presenting confirming and contradictory evidence for their chosen occupations. The researchers concede that the ability to regulate one's epistemological beliefs is "purported to develop gradually and remain underdeveloped in many adults" (p. 3), their findings included an age effect in myside bias. Adolescents demonstrated biases in their justifications of their positions as well as their ratings of argument persuasiveness, yet older students demonstrated bias only in the latter category. This suggests that myside bias becomes less likely over time as epistemological beliefs develop.

The researchers note the important role that identity plays in reasoning biases, remarking that "the self-theories that represent the core of identity...serve as lenses that sometimes distort perceptions of and reasoning about self-relevant information and thereby perpetuate biases and stereotypes" (Klaczynski & Lavalley, 2005, p. 17). They caution that, development aside, both adolescents and adults feel conflicted when exposed to belief-threatening evidence because it contradicts strongly-held beliefs often tied to identity. (The implications of this observation are discussed further below.) Additionally, they underscore their surprise in finding an age effect in biased reasoning because other studies (Baron et al., 1993) had not identified a similar effect.

The focus on the relationship between identity and bias in studies by Klaczynski et al. (1997) and Klaczynski and Lavalley (2005), in these cases vocational identity, were further investigated in another study conducted with early and middle adolescents (Klaczynski, 2000). Once again, an age effect was found in reasoning tasks between the

two groups: The most consistent finding throughout the measures was that scientific reasoning competence of middle adolescents was superior to early adolescents. However, despite their greater scientific reasoning competence, middle adolescents were no less biased than early adolescents in either a religion condition (evaluating participants' reasoning on religious beliefs) or a social class condition (evaluating participants' reasoning on their beliefs about social classes). In fact, in the religion condition, middle adolescents were more biased than early adolescents. This result recalls Baron's (1995) hypothesis that commitments to institutionalized ideologies, such as religions, may exacerbate myside bias.

This result similarly highlights an interesting paradox in reasoning and bias over the lifespan. Although some research (e.g., Toplak & Stanovich, 2003) has found that age (and/or schooling) has improved reasoning ability, when considering epistemological beliefs and their role in identity formation, it stands to reason that the longer one is alive, the stronger certain belief systems may become, as is demonstrated in this study as well as others. Klaczynski (2000) therefore posits that "the competence for sound scientific reasoning is greater among middle than among early adolescents. Nonetheless, middle adolescents are no less likely than early adolescents to use their analytic reasoning competencies in a bias-free manner" (p. 1358). This seems particularly relevant in cases where identity is at stake, as is shown in three studies (Klaczynski, 2000; Klaczynski et al., 1997; Klaczynski & Lavalley, 2005); similarly, several other studies have noted age effects (Toplak & Stanovich, 2003). Given conflicting findings regarding age as a factor in biased reasoning, its role remains unclear.

However, one study's (Klaczynski & Lavalley, 2005) conceptual framework and results provide a possible explanation for conflicting findings on age as a factor in Myside bias: epistemological beliefs (which have been shown to affect Myside bias) are linked to identity formation, which develops idiosyncratically over the lifespan. The conceptual framework used in the study is based on Erikson's (1968) conception of identity as a

sense of coherence among past, present, and future aspects of the self, involv[ing] two primary processes: exploration and commitment. Exploration involves active attempts to explore future possibilities for the self in a variety of domains. Commitment is the process by which the adolescent decides which possible selves to pursue. (Klaczynski & Lavalley, 2005, p. 3)

The framework is based on Marcia's (1966, 1980) reformulation of Erickson's theory,

proposing a classification system based on adolescents' progression along these two dimensions. The resulting 2 (Exploration: high or low) x 2 (Commitment: high or low) matrix yields *four identity statuses*. The least developed status is identity *diffusion*. Diffused adolescents have neither initiated exploration into possible selves nor made commitments to possible selves. In contrast, *foreclosed* adolescents are goal oriented and committed to a life path. However, they make these commitments without extensive exploration into alternative life possibilities. Instead, foreclosed adolescents often adopt goals borrowed from others (e.g., parents). *Moratorium* adolescents are typically characterized as progressing toward achievement because they are in the process of self-exploration. However, moratorium adolescents have not yet committed to future selves or life goals and thus are "figuring themselves out." Finally, *achieved* adolescents have explored themselves and possible futures and have committed, at least tentatively, to a life plan. In general, identity researchers have found that foreclosure, moratorium, and diffusion decrease through adolescence and into early adulthood and that identity achievement increases over this period. (Klaczynski & Lavalley, 2005, p. 4, emphases added)

Former empirical studies (Boyes & Chandler, 1992) have demonstrated that these four identity statuses—diffused, foreclosed, moratorium, and achieved—are linked to the development of increasingly sophisticated epistemological beliefs, in ways similar to

those formerly discussed in another study (Mason & Scirica, 2006). Diffused and foreclosed identity statuses are associated with *absolutist* epistemological beliefs, in which “facts and knowledge are viewed as immutable truths” (Klaczynski & Lavalée, 2005, p. 4) while moratorium and achieved identity statuses are associated with *subjectivist* and *rationalist* epistemological beliefs, in which the views that either “all knowledge is uncertain” (p. 4) or in the case of rationalists, uncertain knowledge exists but beliefs with stronger evidence should be given more weight.

Klaczynski and Lavalée (2005) found that, not only did vocational identity explain variance in students’ myside biases (as discussed above), but age as a factor was mediated by the identity statuses described above as well as participants’ ability to regulate their epistemological beliefs. Put differently, identity status affects biases in ways that interact with age, suggesting a developmental trajectory in which

individuals who are progressing toward [identity] achievement rework their theories by giving equal weight to threatening and supportive evidence...[while] rigid self-theorists (i.e., foreclosed identities...) give more weight to supportive evidence and use relatively complex reasoning, primarily when such reasoning affords the preservation of existing self-views. (p. 17)

In their discussion of the study’s results, Klaczynski and Lavalée (2005) suggest that a faster, heuristic kind of reasoning they term “experiential,” can be bypassed by another type of cognition, termed “analytic,” which is “consciously controlled, effortful, and deliberate” (p. 18), a move that can help mitigate myside bias. They argue that thinkers can “reflect on and evaluate the utility of” (p. 18) each of these cognitive paths, but that such reflection is infrequently pursued by adolescents and adults alike. The following section discusses this “metacognitive intercession” (p. 18), commonly called

reflection (Flower, 1994), and its implications in reducing myside bias.

Reflection and Dialogue

The former section discusses how epistemological beliefs likely shape a student's interpretation of a learning task, leading to the selection of goals that result in the use of either heuristic or reflective reasoning, the latter of which has been shown to reduce myside bias (Golanics & Nussbaum, 2008; Klaczynski, 2000; Klaczynski & Lavallee, 2005; McCrudden & Barnes, 2016; Song & Ferretti, 2013). Klaczynski (1997) notes, "Many theorists now believe that the greatest obstacle to the creation of effective critical thinking interventions is enabling students to view their personal goals and theories as objects for critical reflection" (p. 470). The current study defines reflection through Flower's (1994) articulation of the activity, as "an intentional act of metacognition, an attempt to solve a problem or build awareness by 'taking thought' of one's own thinking" (p. 224). Reflection involves identifying problems and evaluating, justifying, or imagining alternatives. Flower posits that reflection is a "complex, intentional, time-taking act" that requires a student to consider the "assumptions, values, goals, and strategies that are informing her present act of composing" (p. 228).

Several of the reviewed studies suggest student reflection can facilitate a decrease in myside bias. For example, McCrudden and Barnes (2016) conducted a mixed methods study of 72 racially diverse middle and high school students in New Zealand after noting the preponderance of quantitative studies on myside bias and relative paucity of qualitative methodologies. Finding that some students rated myside arguments more favorably than otherside arguments, while other students' ratings were more balanced,

the qualitative phase of their investigation examined the differences in *how* both groups evaluated evidence.

Interestingly, both groups were able to use normative evaluation criteria to justify their ratings (in their case, the quantity of evidence offered in support of claims). However, the more balanced group also applied evaluation criteria uniformly across all arguments, regardless of their alignment with their own beliefs; additionally, they conducted in-depth scrutiny of the arguments. Contrastingly, the more biased group applied normative evaluation criteria only for arguments which aligned with their beliefs; further, they drew upon irrelevant ideas to support or oppose arguments. In other words, students who demonstrated high myside bias were deliberate but not reflective in their evaluation of arguments, while students who demonstrated low myside bias were both deliberate and reflective. McCrudden and Barnes (2016) suggest a pedagogical implication of the study is that “it may be possible to reduce myside bias by prompting students to use reflective or metacognitive practices when they evaluate scientific evidence and arguments, which may promote rational thought” (p. 295).

This study highlights the importance of two types of metacognition in relation to myside bias: conceptual (an understanding that our beliefs often bias our judgments) and procedural (using this knowledge to monitor and control our biases), particularly in evaluation activities. The differences in these types may explain the findings of Stapleton and Wu (2015) that reasoning quality is often unsound even when arguments contain all the requisite structural elements, as knowing something is different than applying that knowledge to a real-world context.

Myside bias may also be the result of an inherent human propensity to reject the views of others, as a study by Trouche et al. (2016) on adult reasoning biases suggests. After participants constructed brief arguments, the researchers, through sleight of hand, replaced participants' arguments with those written by others. Astoundingly, when then shown their own argument and not knowing it was their own, 56% rejected it. This result was replicated in a second phase, again finding that 58% of participants rejected their own argument when they thought it was someone else's. Combined, these studies demonstrate that people tend to be inherently more critical of others' arguments than their own and can better distinguish valid from invalid arguments when said arguments are constructed by others. Reasoning is therefore selective, pointing to the critical importance of dialogue and collaboration in argumentation. When multiple minds work together, dialogue can help temper this effect.

However, as discussed above, Felton et al. (2016) found that *goals* play a key role in whether dialogue reduces or increases myside bias. Dialogue can help students develop arguments which integrate multiple sides of an issue when their goals involve reaching consensus; when their goals are to persuade, dialogue can increase myside bias. Furthermore, the alignment of beliefs between interlocutors is another important factor. Dialogue can increase myside bias when those involved hold similar beliefs. Recalling the “echo chamber” effect discussed in Chapter I, Mercier (2016) argues that collective reasoning is crucial for avoiding polarization and extremism, but cautions,

When people reason on their own, the myside bias often has dire epistemic consequences—piling up reasons that support our preconceived views is not the best way to correct them. Not only does the myside bias stop people from fixing mistaken beliefs...but it can even make things worse. When they reason on their

own, people can become overconfident and strengthen their preexisting beliefs...a similar phenomenon takes place when people reason with people who agree with them: Arguments for the side everyone agrees pile up without being criticized and the average opinion can become more extreme. (p. 110)

As helpful as dialogue can be in decreasing myside bias, then, it is important to remember that it can also increase myside bias when it simply consists of a conversation between like-minded people.

Yet teachers of written argument sometimes work with classrooms of students whose belief systems and ideologies are not necessarily diverse. In such cases, students can be asked to don alternate personas as a strategy for mitigating myside bias. As discussed above, one study (McCrudden et al., 2017) found that students instructed to adopt a scientist's perspective were better able to evaluate arguments in a balanced way. Another study (Lin et al., 2015) found a similar effect: pro/con role-playing on the issue of copyright laws resulted in the generation of more balanced arguments than for students who were assigned just one role (i.e., either the pro or con side) in evidence evaluation. The study's authors note, "To integrate both kinds of evidence and mediate the differences, these students were involved in intense internal dialogues with themselves. These reflections helped the students to overcome the influence of myside bias" (p. 416). Assigning perspectives seems to enable students to decouple from their own beliefs long enough to evaluate and generate balanced arguments. As Lin et al. note here, this may be facilitated by *internal dialogues*, suggesting the presence of reflection.

The importance of well-structured dialogue in mitigating myside bias is further evidenced by a study (Song & Ferretti, 2013) that placed undergraduates in one of three conditions: (1) a no-instruction condition, (2) an instruction in argumentation schemes

(Walton, 1996) condition, or (3) an instruction in argumentation schemes, and in how to Ask and Answer Critical Questions (ASCQ) through partnered dialogue condition. In both the posttest and 2-week maintenance test, those participating in the ASCQ strategy wrote higher-quality essays including more counterarguments and rebuttals. Highly structured dialogues (as opposed to simply placing students in conversations to discuss issues) were shown to stimulate metacognitive awareness and revising behavior.

Well-structured dialogues need not occur orally or in person, however, as a study by Golanics and Nussbaum (2008) showed similarly positive effects on the quality of arguments produced by undergraduates engaging in collaborative argumentation via asynchronous online discussions. The authors argue that online interactions “support reflection by providing students a greater opportunity (compared with face-to-face discussion) to participate and to reflect on one another’s message. The constraints and affordances that operate in these online environments differ substantially from those in face-to-face discussions” (p. 168). However, they do note that the quality of interactions varies and thus recommend elaborated discussion prompts that mention both arguments and counterarguments.

Nussbaum, partnering with other researchers, further tested the potential of student dialogue to reduce myside bias through “critical questioning” based on Walton’s (1996) dialogue theory, which designates questions appropriate for specific argument types (e.g., argument from analogy, from popular opinion, from cause to effect, etc.). One study (E. M. Nussbaum & Edwards, 2011), conducted over a 20-week period with a seventh-grade social studies class, found that scaffolding dialogue with Walton’s critical

questions resulted in students learning to be more critical of their own ideas and proficient in balanced argument construction.

This outcome was found again in another study (M. Nussbaum et al., 2019) conducted with college undergraduates, in which participation in argumentative dialogue through critical questioning was even more effective at reducing myside bias in argument generation than graphic organizers. Such dialogue helped students “become better at ‘juggling ideas’ in working memory, specifically by automatizing proactive executive control strategies related to activating and coordinating ideas and evaluating one side of an argument while inhibiting the other” (p. 17). In combination with reduced cognitive load, the researchers argue that structured dialogic activities can help students integrate counterargumentation within their written arguments, serving to reduce myside bias. Well-structured dialogues thus seem a promising way to help students construct balanced written arguments.

In summary, studies on the role metacognition plays in myside bias provide useful insights into the factors and practices that may shift it, as the above discussion indicates. Epistemological beliefs affect the ways in which learners evaluate and write arguments; specifically, more sophisticated beliefs (learning takes significant time and effort, knowledge is complex) are associated with more balanced argumentation while less sophisticated beliefs (learning is an efficient process, knowledge is certain) may increase the likelihood of myside bias. Epistemological beliefs may affect a student’s argument schema, goals, task interpretation, and self-regulation. Several scholars have suggested that they are teachable and that such education can help mitigate myside bias.

Epistemological beliefs are related to identity formation and development, likely increase in sophistication over time and with education, suggesting that myside bias generally wanes as people grow older. However, individual trajectories are highly variable, topic- and context-specific; no consensus exists on age as a factor in myside bias and in some cases, it appears to increase with age. Differences in sociocultural factors (families, social circles, life experiences) are a likely explanation. Certain identities (religious, vocational, political) and affiliations may even *require* myside bias through the epistemological beliefs they engender. Yet it is possible to instruct students to decouple (intentionally set aside) from their beliefs and doing so has been shown to decrease myside bias. This can be accomplished in educational contexts by assigning the adoption of specific perspectives (e.g., a scientist's point of view) and by role playing pro/con stances on an issue.

Finally, reflection has been shown to decrease myside bias. Reflective thinking may be especially likely when argumentation occurs collaboratively, as a tendency to reject others' views before our own seems inherent. Well-structured dialogues that require consensus goals, utilize critical questioning, and include multiple (and potentially assigned) perspectives have thus repeatedly been shown to reduce myside bias.

Pedagogical Implications for Teachers of Written Argument

This section synthesizes findings from the reviewed literature into practical applications for teachers of argument. Table 3 summarizes pedagogical strategies supported by the reviewed empirical studies above for mitigating myside bias, which can

Table 3*Pedagogies Promoting Balanced and Rhetorically Aware Argumentation*

Pedagogical strategy	Strategy support
Argument Schema	
Engage students in authentic writing situations for specific purposes and audiences	Kardash & Howell (2000); Malpique & Veiga-Simão (2016)
Explicitly instruct argument genre norms and teach counter-argumentation, concession, and rebuttal strategies	Britt et al. (2007); Gol (2013); Lin et al. (2015); E. M. Nussbaum et al. (2005); Nussbaum & Schraw (2007); Qin & Karabacak (2010); Rusfandi (2015); Wolfe & Britt (2008); Wolfe et al. (2009); Wolfe (2012); Yen & Wu (2017)
Cognition	
Create elaborated assignment descriptions defining balanced argument as a primary goal	Golanics & Nussbaum (2008); Wolfe (2012)
Promote consensus goals rather than persuasion goals	Castelain et al. (2016); Felton et al., (2015); Golanics & Nussbaum (2008); E. M. Nussbaum et al. (2005)
Scaffold balanced (rather than selective) exposure to a variety of opinions, teach source credibility evaluation practices, and provide guided database navigation	Knobloch-Westerwick, Johnson, et al. (2015a) Knobloch-Westerwick, Mothes (2015); Knobloch-Westerwick & Lavis (2017); Radhakrishnan, et al. (2010); Winter et al. (2016); Yen & Wu (2017)
Utilize carefully structured graphic organizers visually demonstrating multiple perspectives to provide balanced background knowledge	Golanics & Nussbaum (2008); E. M. Nussbaum & Schraw (2007); E. M. Nussbaum (2008); E. M. Nussbaum & Edwards (2011); Wiley (2005)
Facilitate critical questioning between peers; require students to articulate evidence evaluation criteria and apply uniformly	Song & Ferretti (2013); Klaczynski et al. (1997); E. M. Nussbaum (2008); E. M. Nussbaum & Edwards (2011); M. Nussbaum et al. (2019); Trouche et al. (2016)
Metacognition	
Explicitly cue students to decouple from prior topic-specific beliefs	Klaczynski (2000); Macpherson & Stanovich (2007); McCrudden & Barnes (2017); Stanovich & West (2008a, 2008b); Toplak & Stanovich (2003); Uzarevic et al., (2017)
Foster stronger substantive quality in critical thinking and evaluation by guiding developing epistemologies	Baron et al. (1993); Baron (1995); Britt et al. (2007); Klaczynski, Gordon, & Fauth (1997); Klaczynski & Lavallee (2005); Mason & Scirica (2006); Stapleton & Wu (2015)
Facilitate structured oral and asynchronous online dialogues and collaboration	Castelain et al. (2016); Felton et al. (2015); Lin et al. (2015); Mason & Scirica (2006); E. M. Nussbaum & Edwards (2011); Trouche et al. (2016)
Create multiple opportunities for structured reflection, particularly about evaluation practices	Golanics & Nussbaum (2008); Klaczynski (2000); Klaczynski & Lavallee (2005); McCrudden & Barnes (2016); Song & Ferretti (2013)
Employ perspective-taking activities	Lin et al. (2015); McCrudden et al., (2017)

be used in the context of a curriculum designed to build rhetorical awareness.

Argument Assignments

A writer's interpretation of an argument-writing task is crucial. Argument schemata are evoked in reading by provocative claims and in writing by a combination of the assignment, expectations about the audience, and authorial goals (Wolfe, 2012). Thus, many studies advocate the creation of clear, elaborated assignment descriptions which explicitly cue students to decouple from prior beliefs throughout all phases of the writing process and designate balanced argument as a primary goal (Golanics & Nussbaum, 2008; Klaczynski, 2000; Macpherson & Stanovich, 2007; McCrudden & Barnes, 2017; Stanovich & West, 2008a, 2008b; Toplak & Stanovich, 2003; Uzarevic et al., 2017; Wolfe, 2012). Because many novice argument writers may conflate an argument with a personal opinion, clear instructions and guidelines from the start help students avoid myside bias as they realize they must go beyond single-minded support of a personal stance.

Further, some studies suggest that students should be involved in selection of writing topics and audiences they find authentic (Kardash & Howell, 2000; Malpique & Veiga-Simão, 2016). When students write for authentic purposes, on issues and rhetorical situations they perceive as interesting and meaningful, motivation is positively impacted (MacArthur et al., 2016; Newell et al., 2011). Assignments that encourage and/or structure authentic rhetorical contexts can therefore increase the odds that students will persist, given the time and effort involved in argument writing. However, firmly entrenched opinions—particularly on identity-related issues such as political or religious

issues—may be highly resistant to change (Baron, 1995; Klaczynski & Lavalley, 2005; Knobloch-Westerwick, Johnson, et al., 2015; Knobloch-Westerwick, Mothes, 2015; Uzarevic et al., 2017), so teachers should not be surprised to see strong myside bias in students writing about these topics and should augment such freedoms with structured plans for mitigating it such as dialogue, perspective taking, role-playing, and reflection (Golanics & Nussbaum, 2008; Klaczynski, 2000; Klaczynski & Lavalley, 2005; Lin et al., 2015; McCrudden et al., 2017; McCrudden & Barnes, 2016; Song & Ferretti, 2013).

Audience

Fortunately, several studies suggest there are practical ways to help students mitigate their myside bias. Consideration of their audiences, both intended as well as peers providing feedback, is a primary means to this end. Teachers of argument should develop students' audience awareness; Wolfe and Britt (2008) remark that “skilled writers have a sense of their audience and know that they need to address certain issues” (p. 2). Discussions, whether occurring in class (Felton et al., 2015; Trouche et al., 2016) or asynchronous online environments (Golanics & Nussbaum, 2008) help students move beyond the idea that an argument is a monologic activity to incorporate multiple perspectives. A variety of viewpoints can also be made visible to students through graphic organizer assignments, carefully structured to make clear that multiple stances are both possible and backed with evidence (E. M. Nussbaum, 2008; E. M. Nussbaum & Schraw, 2007; E. M. Nussbaum & Edwards, 2011; Wiley, 2005).

Further, dialogical theory (Walton, 1996) has forwarded useful lists of critical questions to be asked of particular argument types (e.g., “How credible is *E* as an expert

source?” “Is *A* consistent with what other experts assert?” “Could there also be contrary evidence, or at least room for the rebuttal that this case is an exception?”). Structuring dialogues between peers in which they ask and answer these questions of one another has been found to increase incorporation of counterargumentation and rebuttals in written arguments (Song & Ferretti, 2013; E. M. Nussbaum, 2008; E. M. Nussbaum & Edwards, 2011; M. Nussbaum et al., 2018). In addition, students should participate in structured assignments requiring them to articulate their argument/evidence evaluation criteria and apply such criteria uniformly (Klaczynski et al., 1997; Trouche et al., 2016). These practices help students go beyond their own perspectives through interactions with and consideration of real and imagined audiences.

Conventions

One of the most pervasive themes in the reviewed literature is the importance of altering student argument schemata through explicit genre instruction—away from conceptualizations of argument as opinion piece and toward argument as a task in balancing perspectives (Britt et al., 2007; Gol, 2013; Lin et al., 2015; E. M. Nussbaum et al., 2005; E. M. Nussbaum & Schraw, 2007; Qin & Karabacak, 2010; Rusfandi, 2015; Wolfe & Britt, 2008; Wolfe et al., 2009; Wolfe, 2012; Yen & Wu, 2017). Explicit instruction is key and does not need to be extensive, as brief tutorials have been shown to increase counterargument and rebuttal integration, resulting in higher quality arguments.

Critically, however, genre acquisition alone is insufficient for producing strong arguments. Stapleton and Wu (2015) demonstrate that textual conventions can too easily become substitutes for quality thinking and evaluation, as they found that arguments

meeting all the requisite structural features of the genre quite often still demonstrate poor substantive reasoning quality. Teachers must help students move beyond unquestioning trust in their own worldviews by guiding their developing epistemologies toward acknowledgement of the time and effort involved in critical thinking, reading, and writing (Baron, 1995; Baron et al., 1993; Britt et al., 2007; Mason & Scirica, 2006). This will not be accomplished in a brief period of time; teachers should recognize that such beliefs develop slowly, individualistically, and in ways often linked to students' identities and affiliations (Klaczynski et al., 1997; Klaczynski & Lavalley, 2005; Mason & Scirica, 2006).

Purpose

The myside bias literature suggests an important finding that likely conflicts with the way argument writing is predominantly taught—persuasion goals exacerbate myside bias (E. M. Nussbaum, 2008). Though intuitive, this observation may result in a lack of direction for teachers. Yet, “arguments can accomplish different rhetorical purposes, including persuasion, cajoling, negotiating, consulting, debating, and resolving conflict” (Ferretti & Fan, 2016). Argument writing, regardless of purpose, is a problem-solving activity in which the writer must negotiate her purpose within a specific rhetorical context.

Asking students to work toward consensus is a promising strategy for helping them navigate these contexts. Felton et al. (2015) stress the importance of dialogue over debate in teaching argument. They found that consensus goals led to writers adopting more of their dialogue partner's ideas in their writing; the collaborative problem-solving

approach tempered bias as writers used integrative strategies. Persuasion goals led students to write “as if talking ‘past’ a critical partner to an audience unaware of, or unsympathetic to valid critiques of their position” (p. 327) while consensus goals resulted in “students adapt[ing] their arguments to accommodate valid critiques of their position, as if addressing an audience both critical and informed” (p. 328). Perhaps most importantly, teaching students to value consensus and compromise has obvious civic implications, and personal value, beyond the writing classroom.

Consensus can be reached not only with students’ peers, but among the texts students encounter in their research while building arguments. Scaffolding prolonged exposure to a variety of opinions and source materials is critical. Instruction in information literacy practices, such as how to navigate databases and evaluate source credibility, increases the odds that student argumentation goals will move past single-minded validation of a standing opinion (Knobloch-Westerwick, Mothes, et al., 2015; Knobloch-Westerwick & Lavis, 2017; Radhakrishnan et al., 2010; Winter et al., 2016; Yen & Wu, 2017).

Perhaps most important in this process, however: teachers must provide students with multiple opportunities to metacognitively reflect on the information they encounter, their criteria for evaluation of such information, their own epistemologies, and the role their personal beliefs and opinions play in evaluating evidence (Golanics & Nussbaum, 2008; Klaczynski, 2000; Klaczynski & Lavalley, 2005; McCrudden & Barnes, 2016; Song & Ferretti, 2013). Structured prompts that help students think about the quality of their own thinking are critical in both myside bias reduction as well as rhetorical

awareness development.

Summary and Implications for Further Research

Major factors involved in myside bias include argument schema, cognition, and metacognition. This review designated several pedagogical strategies suggested by empirical research countering it, seen in Table 3. Myside bias shifting depends on several individual factors, but the foregoing review also implies that sociocultural factors also play a role, as beliefs are not borne in social isolation.

Vygotsky (1978), a socio-cognitivist, in describing his notion of the zone of proximal development, argues:

Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. Once these processes are internalized, they become part of the child's independent developmental achievement. (p. 90)

Yet, as the above discussion of theoretical frameworks and methods demonstrates, very little work has been done to investigate the social factors at play in myside bias. Further, cognitivist theoretical lenses dominate research approaches; however, a recent review of argument teaching and learning literature explicitly calls for research integrating cognitive and social perspectives in the study of argumentative reading and writing in educational contexts (Newell et al., 2011).

Though myside bias is a documented and widespread obstacle to critical thinking, reading, and writing, surprisingly, I found no substantive qualitative work attempting to understand how students navigate it over time. Newell et al. (2011) contend that we require research addressing “the teacher’s use of specific instructional methods in

promoting the development of students' argumentative reading and writing over time and the features of classroom life that impede or facilitate students' appropriation of argumentative knowledge and strategies" (p. 297). The reviewed research, heavily reliant upon cognitivist theoretical frameworks and methods, validates such calls for future research. Specifically, there is a demonstrated need for empirical studies of myside bias which utilize socio-cognitivist theoretical frameworks and qualitative methods. Such approaches would expand our understanding of how cognitive and social factors converge and play out over time.

These calls are mentioned in some of the research itself, which encourages future work examining "the social and psychological conditions that encourage students to ask critical questions" (E. M. Nussbaum & Edwards, 2011, p. 45). Other studies insist upon the need for qualitative and mixed methods approaches to understanding myside bias (McCrudden & Barnes, 2016), particularly those conducted over a longer time frame (E. M. Nussbaum, 2008; Rusfandi, 2015). Finally, Mason and Scirica (2006) assert:

further research will help us understand whether other factors are related to argumentation, either individual, such as personality characteristics, or sociocultural differences in valuing debates and ways of expressing disagreement. Argumentation needs also to be investigated as collaborative cognition produced in dialogues with a peer or in a group. (p. 505)

Yet 91% of the reviewed literature utilized solely quantitative methods while 9% adopted mixed methods approaches. Writing skills are famously individualized and develop idiosyncratically (Bazerman et al., 2017), yet statistical analytical methods dominate the myside bias literature. Gigerenzer (2004) has called the "null ritual" (p. 588) into question, noting that alpha levels are often arbitrarily set and produce a type of

false dichotomy with which he and others have argued to be “yes-no decisions” which “have little role in science” (p. 591). Our understanding of myside bias at the current moment suggests qualitative approaches. Education researchers such as Maxwell (2004) have questioned the assumptions of the experimental “gold standard” (p. 3) and asserted that context has been woefully neglected in quantitative approaches claiming causality. Some researchers have instead argued that context is a strength in qualitative research where “local causality” (Miles & Huberman, 1994) can be demonstrated.

Given the widespread acceptance of the roles that time and revision play in producing quality argumentative writing, the timed writing conditions under which much the vast majority of participants operating in the reviewed literature call many former conclusions into question. A clear need exists for empirical work on myside bias operating from theoretical spaces which acknowledge and investigate the social nature of argumentation. The gap in our understanding involves how students negotiate myside bias, as developing argument writers over time, within ecologically valid educational contexts. It is this gap that the present study aimed to fill.

Theoretical Framework

This study’s research questions asked: (1) When participating in a curriculum centered around rhetorical awareness, do students in First Year Composition courses shift their myside bias? And (2) If so, how?

To answer *how* students’ myside bias shifted, Flower’s (1994) framework for inquiry into the construction of negotiated meanings provided a lens for data analysis and

reporting. This framework, utilized in Flower's own study of undergraduate writing, is founded on sociocognitive premises that writing is an active constructive process, a social and rhetorical act, the negotiation of meaning, and literate practice.

The framework structures observation and analysis into three events: acts of interpretation, negotiation, and reflection. The following section defines these three events, the research and scholarship explicating their relevance in writing processes, and their relationships to the current study of myside bias.

Acts of interpretation are particularly influential for "writers entering a new discourse [who] must create new task representations from indirect cues" (Flower, 1994, p. 75). Interpretive acts include a writer *reading the context of writing*. In school contexts, a writer interprets the purposes and requirements of the writing assignment as well as others' expectations. This involves interpreting the meaning of key words and conventions in an assignment, which set goals that will frame the way she approaches the writing. It involves learning (or making assumptions) about the audience's knowledge, values, and stances on the subject of the writing—and adapting (or not adapting) the text in response to those interpretations. Importantly, as the writing process unfolds, a writer recursively interprets their own role as writer. Using their background knowledge and prior experiences with the genre, they interpret how to approach the writing task. Their success "depends on understanding the goals and strategies that underlie a given literate practice" (p. 76) relative to the discourse community in which they operate.

Acts of negotiation involve a writer faced with options, invitations, constraints, and/or pressures, who then must select, organize, and connect ideas which cause them to

give in, resist, integrate, synthesize, and/or innovate. The framework describes three elements of negotiation. First, the process of constructing negotiated meaning occurs: (1) when the process of meaning making is subject to pressure, to converging constraints and options, or to conflict among goals; and (2) when writers turn their attention at some level of awareness to managing or negotiating this problematic cognitive and rhetorical situation. Second, negotiation is a response to *multiple voices that would shape action*. The meaning constructed out of such negotiation is a provisional resolution and response to these voices.

Argument writers are under pressure as they encounter a wide range of perspectives on their topics. Writers' goals are multiple and often conflicting. For example, a student argument writer often attempts to balance learning goals with performance goals. As they develop a claim and reasons to support it, contradictory information often results in conflict about which perspectives to include and which to set aside. Each perspective adds a different voice; furthermore, specific to this study's context, a student writer must negotiate the voices of teacher, peers, and others (past and present) while constructing their text. Through feedback and revision loops commonly built into composition courses, each draft represents a provisional negotiation of these voices.

Acts of reflection, as a specific form of metacognition, involve a writer identifying problems and evaluating, justifying, and imagining alternatives. Reflection is a key process in the framework, "not because it is an inevitable occurrence...[but because] reflection and self-awareness can be the basis for critical understanding of one's

own goals, assumptions, and strategies, and the motivation for growth and change” (Flower, 1994, p. 76).

Reflecting on one’s own thinking is an “ethical act...a way to recognize the structures of authority that shape our meaning making and to resist the patterns of racism, sexism, and prejudice that are shot through those structures” (Flower, 1994, p. 28). Connecting the importance of this theoretical framework to my own social justice stance, Flower claims that “to achieve the ideals of a democratic society. . .it seems critical for students—especially marginalized students—to begin to control, not just critique, the kind of discourse that affect all our lives” (p. 30). Rhetorical awareness, which this study’s curriculum was designed to build, involves reflection on genre, audience, and the writer’s own goals as they evaluate and justify alternative courses of action in their writing.

Helping students build and use such metacognitive skills to enhance critical thinking and writing skills is a common goal among FYC instructors, in part due to the role metacognition plays in promoting transfer from one writing context to another (Clark & Hernandez, 2011; Flower, 1994; Negretti, 2012). In rhetoric and composition as a discipline, the term “metacognition” connotes *rhetorical awareness*: awareness of the rhetorical situation underlying a communication event. Because it encapsulates several types of metacognition, I first describe each type in order to articulate what the larger umbrella term involves.

The word *awareness* is often coupled with other terms to signify specific concepts; common examples are “metacognitive awareness,” “audience awareness,”

“genre awareness,” and “rhetorical awareness.” These terms are often conflated in the literature, as I discuss below. Before addressing these terms together in the form of rhetorical awareness, it is useful to first consider the multiple ways “awareness” is conceptualized. Flower (1994), for example, distinguishes between “awareness” in its verb and noun forms:

Metacognitive awareness, when it takes the force of a verb, signifies acts of observation, alertness, and noticing when a part of attention or working memory is devoted not just to action but to the recognition that I am performing this action. (p. 225)

In contrast, the noun form “refers to the knowledge possessed as a result of this divided action” (Flower, 1994, p. 225). Flower defines reflection, a key part of her social cognitive theory of writing, as “an intentional act of metacognition, an attempt to solve a problem or build awareness by ‘taking thought’ of one’s own thinking (p. 225). Both the verb and noun forms, the building of awareness and the resultant knowledge from doing so, contribute to the transferability of knowledge and skills from one communication context to another.

The scholarly debate over how to define *audience awareness*, for example, distinguishes these dual components. Black (1989) posits that audience awareness denotes a writer “consciously using ideas about an audience to create or revise text” (p. 241). This definition implies that audience awareness is a form of reflection on one’s audience accompanied by adaptations of written text to appeal to that audience. However, Raftery (1985) differentiates between audience awareness and adaptation, defining the former as attention to audience irrespective of a writer’s actions and the latter as “audience-conditioned language behavior resulting from this awareness” (p. 237). This is

a useful distinction that the reviewed literature as a whole does not make, complicating the task of integrating its findings. Relatedly, Redd-Boyd and Slater (1989) highlight the difficulty of audience analysis, which they term “the process of inferring [a reader’s] inner qualities and social status...a complex act of construction, which varies with the task” (p. 78). They argue that the ability to analyze an audience develops with maturation and experience.

A third concept, *genre awareness*, operates as another metacognitive concept that combines aspects of knowledge and behavior. Genre awareness has been defined as “the rhetorical flexibility necessary for adapting one’s socio-cognitive genre knowledge to ever-evolving contexts” (Johns, 2008, p. 238). Importantly, Johns distinguishes genre awareness from genre acquisition, or a student’s “ability to reproduce a text type, often from a template, that is organized, or ‘staged’ in a predictable way” (p. 238). Though both genre acquisition and genre awareness are important to a writer’s development, several composition researchers assert that leaving learning at the acquisition stage results in a writer’s inability to transfer genre knowledge from one context to another (Clark & Hernandez, 2011; Johns, 2008; Negretti, 2012).

Rhetorical awareness combines all of these awareness types into a singular concept. The comprehensive definition utilized in my study hails from scholars at Purdue University, an institution at the hub of rhetoric and composition scholarship and research for decades. Articulating a philosophy of composition statement for their own departmental writing program, Porter and Ramsey (1984) offer the following conceptualization of the phenomenon.

A writer who is rhetorically aware knows why he or she is writing, has a sense of purpose and audience, understands the nature of the “occasion” and the conventions that may govern it, understands his or her ethical position relative to the audience, knows the inventional or logical methodologies that audiences may apply to subjects, and makes intelligent decisions about style and arrangement based on this rhetorical awareness. (pp. 135-136)

Familiar elements inherent in this definition include metacognitive awareness, audience awareness, and genre awareness. But rhetorical awareness also takes the entire rhetorical context into consideration, including the writer’s purpose or goals for writing, the exigency underlying the communication event, and the ethics governing the event. Additionally, like many of its included concepts, this definition suggests that the writer’s behavior alters as a result of this knowledge and awareness.

Flower’s theoretical framework was used as a lens for the current study for several reasons. First, the framework parallels themes noted in the empirical literature on myside bias: (1) argument schemas affect how a writer interprets the writing context, (2) cognition during the gathering, evaluating, hypothesizing, and generating of arguments places the writer in precisely the conflicted position of responding to “multiple voices that would shape action” as they negotiate meaning, and (3) metacognition implicates reflection—an act not guaranteed to occur but critical in argumentation—and epistemological beliefs, which develop over the lifespan and which pedagogical interventions (decoupling, dialogue, reflection) can precipitate. Second, the framework provides focal boundaries for a qualitative inquiry into myside bias shifting by attending to the ways writers interpret, negotiate, and reflect on their arguments.

Finally, because the three variously and recursively performed acts of interpreting, negotiating, and reflecting are connected to findings from empirical work,

they can potentially reveal causal relationships within myside bias shifting: when writing arguments, how a writer interprets and reflects upon their own goals and strategies, genre conventions, and audience combine to affect how they will negotiate the writing process. For example: a writer attempting to persuade an audience perceived to be resistant to the writer's claim must make decisions about whether to acknowledge or ignore readers' alternative perspectives, and those decisions will result in the mitigation or increase of myside bias. Reflecting upon how their claims might be perceived by a reader, and how their conclusions were reached at all, can impact how writers gather, evaluate, hypothesize, and generate arguments during revision and potentially shift their myside bias. As Flower notes, reflection is not an inevitable part of a writer's process; however, it is a key element of growth and change. Thus, the current study implemented this theoretical framework to code, analyze, and report data in order to answer research question two.

Several empirical studies underscore how a writer's interpretation of the writing context is an important factor in myside bias; the implications of methods used in studying the phenomenon, then, have critical consequences. For example, an experimental study conducted by Black (1989) confirms the importance of authentic writing contexts, particularly for the argumentative genre. Based on the study's results, Black warns that researchers who draw conclusions on contrived tasks and topics may not be studying the phenomena they set out to research at all, but "a substitute phenomenon," arguing that "Without genuine social context, writing loses its function of communication and degenerates into mere exercises in which one is forced or encouraged

to engage” (p. 233).

This is further supported by Rafoth’s (1985) study of first-year-student argument writers nested in ability (non-proficient and proficient) and audience presentation type (content-rich and content-poor), which found that “in the absence of additional audience information, proficient and non-proficient writers more closely resembled each other” (p. 245). Writers constructing arguments for audiences they interpret as inauthentic—for example, a teacher or researcher as sole reader (or no actual reader at all)—constitutes an “inauthentic” writing context. For the current study of myside bias, a writer interpreting the writing context as an authentic instance of communication is an important step in determining the legitimacy of results, which might otherwise simply be reporting on genre acquisition, for example.

Furthermore, a writer’s interpretation of the writing context affects their goals and strategy deployment—two factors implicated in myside bias. Wong’s (2005) study suggests that perceiving a teacher primarily as evaluator resulted in a writer adopting a grade-centered focus, a narrower range of strategy use, and a stronger attention to correctness. Alternatively, perceiving a teacher as a mentor resulted in a writer adopting the purpose of trying ideas out—resulting in a higher incidence of major text revisions. Because writing balanced arguments requires a wide range of reading and writing strategies, as well as recursive drafting and revision processes, interpreting a teacher as evaluator (rather than mentor) is likely to increase a writer’s myside bias (Britt et al., 2007; Ferretti & Fan, 2016; Wiley, 2005).

In addition, and as discussed in greater detail in the preceding review, a writer’s

purposes are heavily implicated in myside bias. For example, persuasive goals have been consistently shown to exacerbate myside bias, while consensus goals have been shown to mitigate it. If a writer perceives *persuasiveness* to be the teacher's, assignment's, or genre's primary expectation, and simultaneously interprets the writing context as a performance for a grade, they will be more likely to revert into their myside bias (Castelain et al., 2016; Felton et al., 2015; E. M. Nussbaum & Kardash, 2005).

As a writer reads the writing context, they recursively interpret others' expectations. In the FYC context, these "others" clearly include the teacher, as already discussed; however, expectations of peer reviewers, discourse communities, librarians, intended audience members, and others may also contribute to a writer's task representation and understanding of expectations. Interpreting a teacher's expectations involves defining key words in an assignment, but also might include interpreting verbal instructions discussed in class or during one-on-one conferences. As the writing progresses, a writer might also alter their interpretation of expectations based on written or verbal conversations held with peers, members of a discourse community, librarians, or actual members of her intended audience.

Empirical evidence supports the interrelationship between a writer's perceived audience and their goals, which are related to (and have been shown to predict) their myside bias. Berkenkotter (1981) found that a writer's mental representation of their audience often changed over the course of writing, and that as those representations changed, so did goals. Although all the study's participants were assigned the same task—writing to high-school students about their chosen careers—four writers selected to

narrate their choices, three to inform their readers about their fields, and three to alter their readers' thinking about the writer's career. These choices were driven by audience-related goals and several participants, reviewing their text produced so far, recreated these imagined relationships with their readers, which drove changes in discourse goals. If a shifting mental representation of audience can affect a shift in goals, and goals have been shown to predict myside bias, tracking a writer's interpretations of their audience and concomitant goals is a critical component of assessing myside bias shifting.

That a writer's interpretation of their audience affects their goals and strategies is further supported by Black's (1989) finding that strategic textual adaptation for an authentic reader involves an "empathetic approach" (p. 241) in which writers relate the reasons supporting their claims to their intended readers. In her study, Black found that empathetic audience adaptation better predicts balanced arguments than any other factor. Importantly, audience adaptation can occur only when a writer possesses an accurate and clear understanding of her audience. Redd-Boyd and Slater (1989) have argued that audience analysis is a challenging task, involving "inferring a person's inner qualities and social status...a complex act of construction, which varies with the task...apparently, the ability to analyze an audience develops with maturation and experience" (p. 78). Tracking audience analysis and adaptation is thus an important task for the current study, which assesses shifts in myside bias over the course of time.

Also critical to the current study is the third type interpretational activity: the writer envisioning their own role as a writer. This interpretive act rests upon the writer's repository of past experiences with writing in educational and other contexts. These

experiences contribute to writerly identity and self-efficacy. Experiences in specific primary and secondary discourses, including with family, friends, and other social groups, all affect how the writer interprets the activity, value, and process of writing as well as writing ability; these combined self-interpretations often become internalized as a part of writerly identity (i.e., “I’m a writer,” or “I’m no good as a writer”). In the FYC context, where students are busily selecting majors and careers, the alignment of this writerly identity with the writer’s perception of how writing fits into their selected discipline and vocation also impacts how they generally interpret their role as a writer while completing a writing task.

Interpretations of one’s role in a written argument, then, involve not only interpreting the writing task, the teacher’s and audience’s expectations, or the genre’s requirements, but one’s own identity amidst all of these specifics. Findings discussed in the empirical review linked identity to epistemological beliefs, the latter of which impact myside bias. A writer’s relationship with each of these rhetorical elements is tentative and iteratively cast as text production and revision ensues. Tellingly, writing studies scholar Kathleen Blake Yancey (2015) has argued,

Each writer begins a lifelong process of balancing individual perspectives and processes with the opportunities, demands, constraints, and genres of specific rhetorical situations and contexts of the larger culture. The ways in which individual writers do this, however, are influenced by their individual histories, processes, and identities.... in part through individual and collective identity markers such as gender, race, class, sexual orientation, and physical abilities; in part through individuals’ relationships with family and friends; and in part through experiences that both attract and influence identity. Writing itself, especially through genres, also anticipates and, to a certain extent, enforces an identity. (pp. 52-53)

Interpreting a writerly role within a particular writing task is not an action solely

bound by the past; the task writers now engage with presents a new rhetorical context in a new learning environment for the “newest” version of themselves—selves who will continue to envision (and re-envision) their own relationship with perceived readers, the genres, and the subjects about which they write. A writer’s interpretation of their own role in the writing contexts they face is, in many ways, dependent upon their identity. Past and present experiences affect the extent to which writers can envision themselves playing the role the rhetorical context stages. This is a critical part of their myside bias negotiation, as empirical evidence described above demonstrates that commitments to certain ideological strands of an identity, such as religious institutions and political organizations, have been shown to increase myside bias.

In conclusion, Flower’s (1994) social cognitive theory of writing as the construction of negotiated meaning provides a method and paradigm for understanding how students in FYC courses negotiate a sea of voices in order to write arguments. The framework was used to explain how a writer negotiates myside and other side voices in order to illuminate potential causes of and pedagogies for shifting it. The framework highlights reflection, a highly interpretive act, as a critical element in learning. Because metacognition features prominently in both the mitigation of myside bias as well as the development of rhetorical awareness, this theoretical framework was used to provide a social cognitive lens into whether and how students’ myside bias shifts when they participate in a curriculum designed to mitigate it through rhetorical awareness.

CHAPTER III

METHODOLOGY

This chapter describes the methods utilized in the study. First, I detail the context in which the study was undertaken. I then briefly discuss the design of the study and justify qualitative case study as an appropriate approach for answering the proposed research questions. Next, I describe curriculum of the course from which the sample was drawn and the research supporting it. I then articulate the sampling procedures I utilized and justification for these procedures. My discussion of the data sources, collection timeline, and analysis procedures follow next, after which the methods for establishing trustworthiness and credibility throughout the study are described. This chapter ends with a discussion of the study limitations and a summary. Appendices include interview protocols and surveys administered during the course of the study.

Context of the Study

Utah State University (USU) is an appropriate place to study myside bias in college composition because, unlike postsecondary contexts which may employ alternative approaches to teaching writing such as “Great Books” or disciplinary writing, USU utilizes the traditional mode of First-Year Composition (FYC). The FYC mode structures composition inside a general education curriculum housed in and operated by an English department and the mission of such general education courses is to build thinking, reading, and writing skills which ideally transfer to majors courses. This context rendered USU an appropriate context for the current study, which aimed to investigate

the ways in which students navigate their own biases in argument writing. Additionally, according to data from the National Census of Writing (2017), a majority of 4-year institutional writing courses in the U.S. still operate in the traditional FYC mode, which makes the study's results relevant to a larger audience of scholars and teachers interested in the issues under investigation.

The University

This study was undertaken at USU, a non-profit public Tier I university located in the Rocky Mountain region of the U.S. As a land-grant institution, USU works to provide higher education access to the Utahans through a number of satellite campuses across the state. An additional unique demographic feature of the university is its large proportion of students from The Church of Jesus Christ of Latter-day Saints (Church of Jesus Christ). An on-campus Institute of Religion owned and operated by the Church of Jesus Christ provides LDS religious courses to students separate from the university's curricular offerings and this culture of Church of Jesus Christ institutes or "seminaries" is present in junior high schools, high schools, and a majority of other college and university campuses across the state. Though I could not locate reliable statistics for religious adherence among USU's student population, the Church of Jesus Christ religion and culture has a pervasive presence on the campus, which impacts classroom interactions. Adherents of the Church of Jesus Christ faith actively proselytize, and this is facilitated by young men (around age 18 and 19) and, less often, young women (around age 19) serving religious missions across the globe. A large percentage of active Church of Jesus Christ students serve such religious missions, resulting in interesting age differentials

among male and female enrollees in FYC courses which likely vary from higher education contexts outside of Utah. Of the seven participants in the present study, all identified as active members of the Church of Jesus Christ. The three male participants had all served 2-year religious missions, while none of the four female participants had. This resulted in an age differential by gender among participants: male participants were all 20 years old, while female participants were all 18 years old.

The general education mission of USU involves becoming a “Citizen Scholar.” USU defines its “ultimate objective” for general education courses as the integration of general and discipline-specific education in order to help students.

1. Understand processes of acquiring knowledge and information.
2. Reason logically, critically, creatively, and independently, and be able to address problems in a broad context.
3. Recognize different ways of thinking, creating, expressing, and communicating through a variety of media.
4. Understand diversity in value systems and cultures in an interdependent world.
5. Develop a capacity for self-assessment and lifelong learning. (Utah State University, n.d.)

This institutional mission is well-aligned with a study of avoiding bias in the formulation of arguments.

The Course

English 2010: Research Writing in a Persuasive Mode is the second-semester course in a first-year composition program at the study site. The course follows English 1010: Introduction to Academic Writing. Both courses are required for all majors, though students can test out of the first course in the series, English 1010, with Advanced

Placement test scores, by passing a College Level Examination Program exam, or through Concurrent Enrollment coursework. These two courses are some of the very few mandated by the state of Utah (Utah System of Higher Education, 2005). The general education mission, as articulated by the state in policy R470, is

to help students prepare for the 21st century by gaining knowledge and proficiency in: 1) Intellectual and Practical Skills; 2) Knowledge of Human Cultures and the Physical and Natural World; 3) Personal and Social Responsibility; and 4) Integrative Learning.

Course demographics are well-aligned with the demographics mentioned above, as the vast majority of students take English 2010 in their first or sophomore year of college, and the course is one of few that are mandated by the state.

The sections of the courses from which the sample was drawn were capped at 23 students each. The course format was blended face-to-face, meaning they alternated between weeks of meeting face-to-face and online writing, peer reviewing, and revision work. This structure was originally piloted about 6 years ago in USU's English department and I volunteered to teach them believing I would collect evidence to shut down what I perceived to be yet another cost-saving mechanism to the detriment of strong education. I could not have been more surprised to discover that the format is particularly valuable in composition courses, because its structure removes a focus on the teacher and instead empowers students to work regularly in virtual dialogues with one another about their writing projects.

The program-wide learning objectives for the English 2010 state:

By the end of the course, students will be able to: 1. Demonstrate an understanding of audience and purpose; 2. Write logical, clear, and unique persuasive arguments that contain appropriate and sufficient evidence; 3. Locate,

select, and evaluate appropriate evidence and integrate it into written arguments;
 4. Cite and document sources using an acceptable academic citation format; and
 5. Demonstrate a command of Standard English including punctuation, grammar and usage.

These outcomes appeared on my course syllabi and assessment of student writing is aligned with these outcomes through a rubric which articulates performance expectations through the definition of subgoals within each outcome. Importantly, these objectives are well-aligned with a study of myside bias among students in the course.

The Researcher

The following section describes my own subject position as researcher in this study, my teaching philosophy for English 2010, and describes and justifies the use of teacher research as a method for answering the proposed research questions.

Researcher Positionality

As both the instructor of the students involved in this study as well as the researcher, I am highly aware of the limitations and obstacles, but also the benefits, that such an approach presents for this study's research context. I acknowledge and embrace the blurred boundaries between myself as both teacher and researcher in this study and therefore make no claim of overarching generalizability. My purpose in this study was instead to understand the phenomenon in a localized and ecologically authentic way in order to inform my own practice, the practice of my colleagues within our own institutional context, and to add to the literature.

In brief, though I subscribe zealously to no singular paradigmatic worldview and see the value in many approaches for different research problems, I am perhaps best

described as a sociocognitivist. I regularly utilize Rosenblatt's (1994) transactional theory of reading and writing, a thoroughly sociocognitive theory, in my own literacy learning, teaching, and research. This lens perhaps best encapsulates my own in the context of this study as it values both positions of writer/reader, speaker/listener in any communication event. It also captures the importance I place on dialogue within argumentation pedagogy.

My background undoubtedly impacts both the ways and subjects I teach and research. As a white, middle-class woman, I am aware of both the privileges of my class and racial identities, as well as the challenges of my gender. In the context of the current study, these portions of my identity are largely aligned with those of my students, who are also predominantly white, middle-class, and female. However, my religious and political identities likely differ from my students' as I am a politically left-leaning agnostic, and a majority of my students are members of the Church of Jesus Christ and politically conservative. My educational background and experiences teaching abroad and living outside the state in which the study was conducted are likely factors impacting my worldview, but I was raised in the valley where I now teach and have a deep respect for my students. I thrive on watching them learn and grow as critical thinkers and empathic human beings.

Teaching Philosophy and Experience

I have taught English courses at USU for 11 years. I am passionate about my work, and this inspires my desire to constantly refine my instructional practices. Though I have taught English major courses, a graduate writing pedagogy practicum, educational

diversity courses, and currently direct the university's Writing Fellows Program, the bulk of my teaching experience has consisted of teaching required general education composition, grammar, and literature courses. This means I regularly face the challenge of a resistant audience. In large part due to their past histories with the red-pen prescriptive grammarians of their educational pasts, students often initially view my courses as hurdles they must unaccountably vault.

Accordingly, I know that even as I teach, I must also convince my students that *learning these subjects and skills will be worth it*—and on that point, I am certain. Particularly in English 2010, my course focuses on improving creative and critical thinking processes, as well as clear and effective communication skills. These tools are essential for my students' academic and personal successes so with so much at stake, I am devoted to providing my students with every opportunity for mastering these skills. I recognize the socioeconomic roots of my students' literacy skills and my goal is to respect their ideologies and identities while simultaneously empowering them to operate within a dominant culture which places high value on communication within certain powerful social discourses.

I am concerned, as an educator and as a human being, by the persistence of unequal power relations demonstrated throughout our national political and curricular pasts. I am concerned by what I perceive to be a nationally embraced over-reliance upon hyper-emotional appeals and gut-instinct reactions to the personal, social, and intellectual problems we face. This trend is evidenced by an alarming lack of both critical thinking and the will to enact and embrace policies that promote equality, the “common good,”

and reasoning among our social institutions and citizenry.

I share Paolo Freire's (1968) distaste for "banking concept of education," wherein teachers making "deposits" into student minds is seen as "learning." I hear his call for educators to count themselves as learners too, and thereby "undermine the power of oppression and serve the cause of liberation" (p. 246). By aligning myself with the standards set forth by my institution's mission to produce "Citizen Scholars," I attempt to create a classroom community where all are respected and valued. Instead of teacher-designated content deposits and withdrawals via methods such as standardized testing, I aim to nurture the skills which I believe are necessary for the maintenance of a democratic society while attending to my students' interests. My students respond very well to this approach and appreciate the tone set in my classrooms.

This big-picture goal requires an ability to adjust to various teaching contexts, which is why *adaptability* is a core value of my teaching philosophy. Knowing that learning is as much affective as it is intellectual and faced with students who generally are not ecstatic about taking "English," I alter my teaching approaches according to the variables inherent in different courses, sections, and students. I am comfortable with this shape-shifting as it inspires my continued motivation and growth. I became an educator in order to pursue this life-long goal.

Through adaptability, in line with both the institutional mission and course objectives, I aim to help students adopt a cosmopolitan view of the world. Cosmopolitanism, says Hansen (2010), "does not involve joining a party, a movement, or a sect" nor does it "entail adopting an ideological posture that ipso facto excludes others"

(p. 4); rather, it helps people “create not just ways to tolerate differences between them but also ways to learn from one another, however modest the resulting changes in their outlooks may be” (p. 4). A cosmopolitan approach includes practicing, indeed living, “mindful ways of listening, speaking, interacting, reading, writing, reflecting, and more” and is invested in “cultivating humane relations with other people and supporting their right to dignity” and “developing one’s intellectual, moral, and aesthetic being as richly as circumstances permit” (p. 22). I aim to help each of my students negotiate the local with the global without assuming the two are mutually exclusive.

Teacher Research

Teacher research is a methodological practice well-suited to studies in composition and has a long history of use. As a movement spawned in the 1960s, teacher research has been called “a quiet revolution” by compositionists such as Richard Bullock and James Britton (Ray, 1992). With an emphasis on “change from the inside out” (p. 172), teacher research was created, in part, to redress perceived inadequacies of positivistic paradigms in educational research through sociological and qualitative work (Ray, 1992). Teacher research frames teachers themselves as learners, along with their students, with a goal of informing and improving practice and to advance theory development. Prominent composition scholar Ann Berthoff has gone so far as to assert that in order for educational research to have any significance at all, it must be created by, for, and among teachers (Ray, 1992). The proposed study utilizes this approach in an attempt to bridge the gap between research and its application to local pedagogical practices.

Study Design

The aim of this study was to analyze how students experienced a curriculum designed to mitigate myside bias and stimulate rhetorical awareness, and this purpose drove the research process. This study utilized a qualitative multiple case study design (Merriam & Tisdell, 2016; Yin, 2014). Case studies are appropriate for studying phenomena because they allow for “an in-depth description and analysis of a bounded system” (Merriam & Tisdell, 2016, p. 37). The boundaries of the study were two sections of ecologically authentic English 2010 classroom settings. Inside the boundaries of the course, each participant selected constituted a case; however, intra-case comparisons were made to identify patterns that emerged across cases.

Participants were selected through the use of a survey delivered in week one of the course. Though I initially planned to select only those participants demonstrating the highest degree of myside bias, all seven students who agreed to participate were included in the study. This occurred because I wanted to include as many cases as possible to strengthen the study’s trustworthiness through cross-case comparisons. Yin (2014) has defined case study as “an empirical inquiry that investigates a contemporary phenomenon (the ‘case’) within its real-life context, especially when the boundaries between phenomenon and context may not be clearly evident” (p. 16). Particularly relevant to this study, Yin argues that two or three cases can potentially replicate study findings, but that “the more replications, the more robust findings will be” (pp. 33-34). Recent research in composition has strongly supported the premise that the writing situation is highly context-specific (Adler-Kassner & Wardle, 2015; Bazerman et al., 2017; Clark &

Hernandez, 2011). Comparisons across seven specific cases increased the potential for emerging patterns that could inform argument pedagogy and further research.

Rhetorical Awareness Curriculum

The two sections from which this study's participants were drawn were designed to promote critical thinking, reading, and writing through a curricular focus on rhetorical awareness as a promising tool for the reduction of myside bias. The curriculum was designed using former research and scholarship on myside bias and rhetorical awareness (see Appendix E). Rhetorical awareness is defined in Chapter I but is more briefly described here as an understanding that, in order to meet one's purposes in writing, the rhetorical situation should impact authorial text construction. I describe the major assignments and activities of the course in detail below, but first describe the important role peer reviews played in these blended courses.

Peer Reviews

Online weeks consisted of highly structured individual writing and peer review tasks. Peer review instructions were tailored to each assignment in order to help students navigate the difficulties specific to each. The cycle typically worked this way: students were introduced to a new assignment early in the face-to-face week and we spent our time together learning and practicing course concepts and discussing student projects. Students then posted a draft on an online discussion thread on the Canvas learning platform, visible to all students, by the end of the week. Knowing their work would be visible to peers seemed to incite a higher level of effort and helped students calibrate their

own attempts, compare ideas, and learn from one another. The process of providing a structured peer review helped students better understand the assignment and their own initial attempt. Receiving regular feedback from different peers helped students internalize how different readers might respond to their writing and underscored the subjectivity inherent in writing. This cycle also mitigated the misconception that the teacher of the course was the sole audience member, and led to fruitful discussions about identifying, analyzing, and adapting for a writer's intended audience—as well as revisions that built upon these considerations.

Each student then “called” a draft to review, worked for about three days on the review, and posted their feedback for a peer early in the online week. Students then examined the feedback they received, revised for about three days, and submitted the assignment to me for grading. I evaluated assignments by providing a grade and feedback, and students then had the rest of the semester to revise further if they so desired. They were encouraged to come talk with me and I sought them out in class or through email for further mentoring. Due to an unlimited revision policy, students could revise any submitted work until the last week of the semester. Peer reviews were the one exception and had to be submitted by the posted deadline; this policy ensured timely feedback occurred between peers.

The benefits of providing multiple mechanisms for providing and receiving high-quality feedback, where students are exposed to a regular revision cycle in their own and their peers' drafts, were clearly noted. Students worked harder on initial drafts, they wrote on subjects they care about in authentic environments, and it quickly became clear

to them that strong writing requires regular revision. In short, this method made the writing an inherently *social* experience. Collaborative argumentation has been found to be effective in online environments (Golanics & Nussbaum, 2008) and Tsai and Chuang (2013) found that structured peer assessment encourages revision.

Unit One

The first unit of the course occurred over four weeks and comprised two essay assignments and structured peer reviews for each assignment. The assignments, when placed together, accomplish both logistical and curricular goals.

Brief Essay

During the first face-to-face week of the course, students wrote a 1- to 2-page essay in which they forwarded an argument (a claim supported by reasons) on any topic of their choosing. Argumentation researchers have suggested the importance in explicit instruction in the construction of claim statements (Hillocks, 2010; Wolfe, 2012; Wolfe & Britt, 2008; Wolfe et al., 2009); students were instructed in claim construction at this time. Students chose their own audience and purpose for the argument and no research was required. When students perceive educational tasks are personally relevant, they are more likely to engage. Such relevance motivates them to persist in the difficulties involved in reading and writing arguments and is related to student performance, engagement, and learning (Hidi & Renninger, 2006). Because I aimed to help my students see how course concepts transfer well beyond English 2010, I wanted to ensure they saw their projects as challenging and meaningful and interest played a role in this

process (MacArthur et al., 2016). In the second week (held completely online), highly structured peer reviews helped students focus on the viability of their claims, reasons, evidence, and audience, given their stated purposes.

At the logistical level, we began the course utilizing a brief and low-stakes writing assignment because (a) student enrollment is typically unsettled for the first two weeks and participant selection occurred during this timeframe, and (b) we were building a classroom community, a crucial part of writing pedagogy involving workshops and feedback in both face-to-face and online spaces. At the curricular level, the Brief Essay accomplished several purposes: (a) it built student confidence in the writing abilities they've accumulated before entering the course, (b) it allowed me to introduce basic argument conventions and help students practice the rhetorical situation, (c) it helped me get to know students through their writing and provided a diagnostic argument I used to guide in-class instruction, and (d) it provided a basis for myside bias critique, which naturally arose through the peer review process and conversations during week three.

Opposition Essay

Students wrote a 1- to 2-page essay in which they were required to support the polar opposite claim from the one they presented in the Brief Essay. For example, if a student argued, "Public executions should be televised" in the Brief Essay, the Opposition assignment required them to argue, "Public executions should NOT be televised." The assignment required students to select an audience resistant to this new claim. Their purpose was defined by the assignment: to empathically understand this resistant audience well enough to build bridges of shared values and negotiate the conflict

through the use of Rogerian argument strategies. Rogerian argument aims to negotiate consensus between parties in disagreement. With a focus on empathy and compromise, the goal of this assignment was to help students see that valid reasons and evidence can be articulated to support points of view with which they may disagree. Felton et al. (2015) and Ferretti and Fan (2016) have shown that persuasion goals can exacerbate myside bias while consensus goals can mitigate it. Composition scholar Paula Tompkins (2009) has long advocated for rhetorical listening as an ethical priority. Rogerian argument strategies provided students with these tools: consensus meant to equip them throughout the course (and hopefully beyond) when writing for a resistant audience. Peer reviews of the Opposition Essay focused on deployment of Rogerian argument strategies, tone, and attention to the delicate rhetorical situation. By writing an argument which opposes their own personal opinions, students were exposed to counterargumentation and confronted their own biases in the process. Research has shown explicit cuing to detach from personal beliefs is an effective means for myside bias reduction (Klaczynski, 2000; Klaczynski et al., 1997; Macpherson & Stanovich 2007; Stanovich & West, 2007, 2008a, 2008b; Toplak & Stanovich, 2003).

Unit Two

The second unit of the course sequenced three interrelated assignments which scaffolded the final assignment of the course, the Proposal Argument from Inquiry (PAI). The approach taken in this unit was different from that taken in the first; rather than beginning with a claim, students began with a question. The difference in this approach was explicitly described to students as a stark methodological contrast to that taken in

Unit 1. Class discussions revolved around the fact that beginning an argument with a pre-formed claim will naturally lead to bias, but that starting with inquiry and research before opinion formulation is one strategy to avoid myside bias. These three assignments are described below.

Stasis Theory Assignment

The first assignment in Unit 2, the Stasis Theory assignment, required students to pose a research question on a topic of personal interest. Students used four “stases” (facts, definitions, cause-effect relationships, and values) to generate sub-questions within the larger research question in order to begin their inquiries. Several researchers investigated the value of critical questioning in argumentation (E. M. Nussbaum & Edwards, 2011; Song & Ferretti, 2013) and this assignment helped students begin such questioning practices as they gathered and evaluated information on their topics. In-class introduction to library database searching occurred during this week and students were provided with research guides and assistance from a librarian assigned to their course. Peer reviews focused on sub-question generation, assistance with source location, and help generating the sub-questions required to answer the research question. For example, what facts must be clarified? What terms will require defining? What are the causes and effects of the phenomena and its related solutions? Finally, what values determine how facts are accepted or not, how terms are defined, and how causes and effects are attributed?

Graphic Organizer and Reflection Essay

The Graphic Organizer then helped students further gather, organize, evaluate,

and synthesize evidence—and assess knowledge gaps—in order to answer their initial research questions. Students spent two 75-minute class sessions (an entire week of face-to-face class sessions) in the library with one-on-one interactions with class librarians and me to navigate databases and other resources. Guided database navigation has been shown to improve quality argumentation (Radhakrishnan et al., 2010). Students recorded their ten most important sources into a graphic organizer, analyzing the credibility of each source. Their peer reviewer then provided 10 sources which contradict, counter, or complicate the evidence in the student’s organizer, essentially providing the student with an array of perspectives and prohibiting the “cherry picking” phenomenon. Students’ Reflection Essay, submitted along with their Graphic Organizer, required students to (a) identify ambiguities, problem areas, and concerns; (b) note gaps in their knowledge; and (c) to articulate a proposal argument (i.e., “_____ should(n’t) _____ because _____”) for further analysis in the next assignment.

Cognitive load can be managed through organizational strategies such as graphic organizers, as researchers in argumentation have noted (E. M. Nussbaum, 2008; E. M. Nussbaum & Schraw, 2007).

Toulmin Enthymeme Analysis

Finally, the Toulmin Enthymeme Analysis required students to select an audience and purpose for the final paper. The Toulmin assignment then taught and asked students to identify the warrants inherent in their hypothesized arguments from their reflective essays, through the lens of the audience they planned to write for, and then either back warrants with evidence or alter the argument accordingly. Through Toulmin, students

were explicitly instructed in identification of conditions of rebuttal (counterargument, concession, and refutation), as well as how to qualify their arguments. Peer reviews focused on identifying additional warrants, potential backing, and counterargument identification. Peers were prompted to suggest qualifiers and comment on the logic, bias, and quality of the argument. Toulmin theory is used widely among composition teachers as a way of helping students analyze their arguments and has been shown to increase the quality of argumentation (Lunsford, 2002; Voss, 2005; Warren, 2010). The Toulmin assignment thus asked students to begin thinking about counterargumentation through the lens of their chosen audiences and culminated in a revised argument for use at the outset of Unit 3.

Unit Three

The final unit of the course was designed as a culmination of the semester's instructional foci and experiences. Students outlined and wrote their final arguments with the help of interspersed and highly structured peer reviews and my own feedback on drafts. The final unit supported students as they worked to apply the strategies they had been practicing and concepts they had learned over the semester.

Proposal Argument from Inquiry Outline

In the Outline assignment, students began to structure their arguments in for the audience they had selected. An analysis of their chosen audiences, including values, resistance, and likely refutations was completed and included at the top of the outline to help students remain cognizant of their readers. Model proposal arguments (with

rhetorical contexts described) were offered to provide ideas for structuring; these included classical, Rogerian, hybrid, policy, and practical proposal argument structures. Students were encouraged to consider and utilize strategies for their own purposes and the needs of their readers. Outlines included cited evidence and were required to include counterargumentation elements. Peer reviews were highly structured and focused on rhetorical awareness, argument-counterargument integration, and evidence usage, given the stated purposes of the writer for the specific audience identified.

It should be noted that many students at this point in their academic careers are terrified by the prospect of writing a paper the length of the Proposal Argument from Inquiry (i.e., six to eight pages). The outline was meant to help students brainstorm in a safe space with detailed peer and teacher feedback. In my teaching experience, outlines help students manage the writing process and see writing the paper as feasible. Outlines also helped me spot and assist struggling students. One-on-one conferences were highly encouraged for students who need additional tailored help; three participants sought out such a conference with me.

Proposal Argument from Inquiry

The final paper was a 6- to 8-page researched argument geared toward a specific audience chosen by the student. With most research, analysis, and organization work completed, students were often well-positioned to draft a strong and balanced argument. Peer reviews were highly structured and focused on content, structure, rhetorical awareness, diction, and here in the final drafting stage, mechanics, and usage.

Writing Notebook

The writing notebook assignment was an ongoing assignment in which students responded to prompts I provided. I assigned prompts for several purposes: to prepare for a group discussion, to help scaffold student writing (for example, a brainstorming session), or to help students reflect upon course concepts, their own writing strategies and processes, and their experiences in the course. Reflection has been suggested to be of critical importance for both enhancing rhetorical awareness (Adler-Kassner & Wardle, 2015; Flower, 1994) and mitigating myside bias (Kardash & Howell, 2000; McCrudden & Barnes, 2016; Stanovich, 2009).

Sampling and Participants

Participants for this study were recruited from two sections of a blended FYC course called *English 2010: Research Writing in a Persuasive Mode*. A brief solicitation explaining the study occurred via an in-class presentation delivered by an external researcher because I am also the teacher of the course and want to avoid coercion. I recruited four participants from section A and three participants from section B. Informed consent forms were delivered during the presentation, which occurred on the first Tuesday of the semester in which the study was undertaken. Students had several days to decide whether they would like to participate. On the following Thursday, the external researcher visited the course and again distributed forms. All forms, regardless of whether students signed them or not, were then collected by the external researcher and placed in an envelope to retain privacy and confidentiality

Following my normal practice, all students were asked to complete a survey at the course outset containing open-ended questions regarding their attitudes and experiences with reading and writing, and their understanding of written argument. To facilitate sampling, this survey also included an embedded, 15-item 7-point Likert-style instrument (Wolfe, 2012) to assess student argument schema. This instrument has been empirically validated and assesses myside bias propensity through questions which measure the strength of extant “fact-based” and “balanced” argument schemas. A “fact-based” argument schema has been found to predict myside bias (Wolfe, 2012). I originally planned to select only students scoring a high “fact-based” schema for inclusion in the current study; however, due to delayed responses and the necessity of securing participants, a total of seven participants were eventually included in the study; these participants represent a range of initial myside bias scores based on the instrument. No participant agreeing to participate in the study was excluded.

It is important to note that the terminology “fact-based schema” may be misleading, as there is nothing wrong with “facts” as such. However, Wolfe’s (2012) definition of the term clarifies that a fact-based schema represents an “uncritical belief that facts alone make an argument good.” Balanced schemas, on the other hand, demonstrate a “preference for arguments that acknowledge more than one side” (p. 480). Because myside bias is the “tendency to ignore information on the side that one disagrees with—the other side of an issue—in favor of information that supports one’s position” (p. 478), this instrument proved useful in identifying participants for the study. Based on a pilot study I completed in Spring 2018 of $N = 89$ participants from five English 2010

sections, there was no shortage of potential candidates: nearly 79% of incoming first-year students in that sample made no mention whatsoever of other sides or the necessity of counterargumentation in their descriptions of what makes a good persuasive essay.

This study used a purposive sampling approach. Because the amount of data to be collected and analyzed is so comprehensive, four participants at minimum were initially desired for analysis. Stake (2006) has recommended a minimum of four participants are necessary for multiple case study analysis. I initially sought four participants, as the goal of this study is a deeper qualitative dive into the ways in which FYC students negotiate myside bias in written argumentation; however, seven students were invited and agreed to participate based on Yin's (2014) assertion that "the more replications, the more robust findings will be" (pp. 33-34). Recent researchers (McCrudden & Barnes, 2016) have noted a methodological shortcoming of extant myside bias research: a large number of quantitative studies exist while no studies have used qualitative, and few have used mixed-methods approaches. Further, myside bias has largely been operationalized simply as the absence of counterargumentation, but researchers have yet to study the sociocultural factors involved in the phenomenon.

To account for attrition, which was a likely threat to the study given the high drop rate of English 2010 students over the first two weeks as enrollment settles in this general education course, I planned to invite between four and eight students to participate in the study. Seven were invited and all agreed to participate.

Data Sources

This section describes each data source type I collected in order to answer the research questions. The vast majority of data sources were collected during the normal operation of the course and did not require participants to do anything they would not normally do during the regular course of the semester. These included pre- and post-surveys, in-class drawings, audio recordings of brief class discussions, drafts of written assignments, and written reflections. The final data source was participant interviews, which comprised the only activity students engaged in for the sole purpose of the study.

Survey One

A beginning activity for any course I teach includes an initial survey which helps me, as a teacher, to understand my own audience. Items in this survey were open-ended (e.g., “How do you feel about writing?” and “What is an argument?”) and also included an embedded 15-item, 7-point Likert instrument (Wolfe, 2012) validated with undergraduate students as predictive of myside bias in order to assess student argument schemas. This survey was used to select participants for the proposed study and to inform me about my students’ self-efficacy and reading/writing knowledge and experiences. This survey instrument was also used as the tool for participant selection and myside bias initial measurement and was administered during the first week of the course.

Survey Two

Wolfe’s (2012) instrument was administered again at the end of the semester to assess myside bias shifting. It also included nearly identical open-ended items for student

reflection and my own learning assessment. Appendix A includes both survey one and survey two instruments. The post-administration of the survey helped me determine movement away from myside bias in participant argument schemas over the entire semester by comparison with results from survey one.

Drawings

Six drawings were collected from each participant over the course of the semester. At the outset of each major assignment (except for the Stasis assignment, when time constraints prevented it), drawings were constructed in response to a prompt designed to elicit student conceptions of the rhetorical situation and their navigation of myside bias. These drawings represent students' purposes in writing, the strategies they intend to use, and their understanding of the rhetorical situation they faced in the assignment. Drawings provided an alternative format of data—ideographic and visual in nature—to help me identify how students interpreted, negotiated, and reflected upon the rhetorical situations they faced in each assignment. By aligning prompts with the study's theoretical framework, I used this source to assess participants' response to the rhetorical awareness curriculum, the social dynamics of the classroom, and myside bias shifting.

Audio Recordings

This study utilized a theoretical framework which conceptualizes a writer's negotiation of meaning in part through a student's attendance to multiple voices which would direct action (Flower, 1994). Accordingly, and because of the unique features of oral language and the embeddedness of argument in an oral tradition, I recorded four

strategically placed in-class dialogues. Bloor and Wood (2006) have noted that the recording of audio data through devices has been an important development in qualitative research and that audio recordings provide a convenient way to track naturally occurring data. The first classroom recording occurred during the second week of face-to-face class meetings and lasted about 30 minutes. It captured a live impromptu enactment of rhetorical listening in preparation for the Opposition Essay assignment, which was to be constructed using Rogerian argument strategies. Two students were asked to volunteer to state their position on an issue, and then summarize their partner's opposite stances on that same issue to the peer's satisfaction. Each student stated and summarized their peers' positions, without contradicting one another, and a large-class discussion was held to debrief about the impromptu public discussion.

The second classroom recording occurred during the third week of face-to-face class meetings and lasted about 25 minutes. It captured a large-group discussion after small-groups worked together to analyze the value and purposes of various source types. As an information literacy activity, its purpose was to learn about and discuss the role of research, publication practices, and genre features in source credibility and usage.

The third recording captured discussions between me and individual participants during the seventh week of face-to-face classes and lasted about 10 minutes each. These conversations occurred in the library, as I moved from student to student to facilitate their research projects. Students were working on their Graphic Organizers as I helped them narrow their research questions, evaluate sources, and ensure they were locating the information suggested by their Stasis Assignments and projects generally.

The fourth recording captured dyad discussions which occurred during the sixth week of face-to-face classes and lasted about 40 minutes, with students taking turns both questioning a peer's argument and answering for their own for 20 minutes in each role. These discussions captured a highly structured dialectical activity as students were beginning to write their final PAI Outlines and being introduced to counterargumentation strategies. Students were paired together and took turns asking and answering critical questions related to the argument they had hypothesized in the Graphic Organizer and then analyzed and refined in their Toulmin Analysis assignments (Song & Ferretti, 2013). These discussions were scaffolded with a handout prompting the questioner, who was instructed to probe the peer about his or her argument. Such questions included, "Why did you suggest this particular proposal?" "Why is this proposal important?" "How likely are the future consequences you predict to occur?" "What's the likelihood of this proposal actually being enacted?" "What exceptions might be made?" "How biased would you say you are on this topic? Do you have an agenda?" "Will this proposal solve the whole problem?" "Who will pay for it? What's the cost?" and "How do you know?" The final question then directed the student questioner to inquire about evidence evaluation specific to the peer's responses. These questions included inquiries regarding the truth, typicality, relevance, interpretation, and strength of various evidence types (i.e., personal examples, expert opinion, statistics, and anecdotal evidence).

These four instances were selected for audio recording because of their high potential for capturing data on students' myside bias shifting. The first instance was a moment in which students practiced listening empathically to those with whom they did

not agree, both in pairs and as a large group; additionally, the whole-class discussion that followed the activity involved reflection on the challenges of listening with empathy to alternate perspectives and potential tools for doing so. The second instance provided an opportunity to capture data on students' perceptions of source credibility and strategies for determining source credibility. This moment involved both direct instruction in data gathering and evaluating techniques as well as an open-ended small- and large-group discussions about difficulties involved in gathering, filtering, and evaluating evidence. I hoped to capture data on how students might talk with one another about these challenges, as dialogue is an important part of myside bias mitigation. The third instance was selected for its potential to gather data on teacher-student interaction in a one-on-one conference. At this point, students were ideally testing hypotheses about their research questions—but importantly—should not have devised claims they were yet invested in. This instance, then, was meant to capture data I could use to compare with student-student interactions and written artifacts to determine how students were gathering and evaluating evidence, and when claims began to emerge. The fourth instance was selected for its potential to capture data from a structured one-on-one dialogue between two students. Former studies have found that dialogue can mitigate myside bias; however, I have seen it wreak the opposite effect many times. Because the dialogue was structured, not as a debate (which would inspire persuasion goals), but as an oral question-answer session with the pair taking turns in each role, this instance was selected for its potential to capture data on the role of structured dialogue in myside bias shifting.

The purpose of collecting audio recordings was to add to data source types in an

effort to gather a full picture of student myside bias shifting. Writing research that collects only written artifacts, particularly in a writing classroom where discussion is crucially important, prevents insights potentially reflected in alternate data sources. By collecting conversations in the classroom setting, I was able to access an important part of the classroom dynamic and the impact of social interactions on student myside bias.

First Drafts

Students produced initial attempts at each of the major assignments in the course: The Brief Essay, Opposition Essay, Stasis assignment, Graphic Organizer and Reflection Essay, Toulmin Assignment, Proposal Argument from Inquiry Outline, and Proposal Argument from Inquiry. First drafts were posted on the discussion thread for peer review. In total, I collected seven first drafts over the course of the semester.

Final Drafts

After the peer review and revision processes, final drafts were submitted to me for grading at the end of the peer review period. Final drafts represent students' best efforts at completing writing assignments. They provided the primary source of written argument for assessment of myside bias shifting.

Reflective Writing

As an ongoing assignment, written reflections were present in student Writing Notebooks and also assigned formally in class and via the Canvas learning platform. Reflections typically asked students to evaluate if and how well they believe they met their stated purpose in the assignment and why, how effective their strategies were, and

what role audience played in their purpose, strategies, and processes. Reflection plays a key role in both the theoretical framework of this study (Flower, 1994) and is also an important factor in myside bias reduction. Students reflections served to both enhance metacognition as well as to provide a data source I used to assess the role reflection played participant myside bias shifting.

Interviews

Five interviews were conducted during the semester at strategic intervals aligned with coursework and anticipated myside bias shifting. An external researcher conducted interviews to avoid coercion. Interviews occurred at the outset and end of the course, after Units 1 and 2, and in the middle of Unit 3. The first two interviews were expected to last for 60 minutes each. Interviews three and four were expected to each last 75 minutes, and the fifth interview was expected to last for 60 minutes. The total time participants were expected to volunteer for interviews was 5 hours and 30 minutes. However, interview time varied radically depending upon the participant. Interviews were conducted by an external researcher in order to prevent participants from feeling coerced. Additionally, a room was secured as a space for interviews to occur in privacy.

Interviews were semistructured in order to meet the goals of the study. For example, protocols contained several questions that remained consistent over time in order to assess myside bias shifting but also included room for questions that arose naturally during the course of research and the conversations with the interviewer. Rubin and Rubin (2011) suggest that interview questions should emerge from previous findings; I therefore included relevant questions through analysis of the data as I received it.

Interviews provided a rich source of information I drew from to analyze myside bias shifting and reasons for such shifting. References to social interactions with peers and myself as teacher of the course were of particular value. Because writing is a mode of communication involving more time to think and process, interviews, as dialectical exchanges, provided a crucial data source for understanding how students experienced the course and curriculum. Appendix B includes all five interview protocols.

Data Collection Timeline

A majority of the data collected in this study were drawn from the normal activities of the course. Tables 4 and 5 depict the collection timelines for both sections of the course. Because the courses were blended, dates are staggered. Section A began face-

Table 4

Data Collection Timeline for Course Section A

Date	Interview	Survey	Drawing	Peer reviews	Reflections	First draft	Final draft	Audio recording
08/31	X	X	X		ongoing	X		X
09/07				X	ongoing		X	
09/14			X		ongoing	X		
09/21	X			X	ongoing		X	
09/28			X		ongoing	X		X
10/05				X	ongoing		X	
10/12			X		ongoing	X		
10/19				X	ongoing		X	
10/26			X		ongoing	X		X
11/02	X			X	ongoing		X	
11/09			X		ongoing	X		
11/16	X			X	ongoing		X	
11/23			X		ongoing	X		X
11/30				X	ongoing			
12/07	X	X			ongoing		X	

Note. Bolded text indicates weeks in which class is held face-to-face vs. online.

Table 5*Data Collection Timeline for Course Section B*

Date	Interview	Survey	Drawing	Peer reviews	Reflections	First draft	Final draft	Audio recording
08/31	X	X	X		ongoing			
09/07					ongoing	X		X
09/14				X	ongoing		X	
09/21			X		ongoing	X		
09/28	X			X	ongoing		X	
10/05			X		ongoing	X		X
10/12				X	ongoing		X	
10/19			X		ongoing	X		
10/26				X	ongoing		X	
11/02			X		ongoing	X		X
11/09	X			X	ongoing		X	
11/16			X		ongoing	X		
11/23	X			X	ongoing		X	
11/30			X		ongoing	X		X
12/07	X	X		X	ongoing		X	

Note. Bolded text indicates weeks in which class is held face-to-face vs. online.

to-face and included a final reflective assignment in week 15 while this discussion occurred face-to-face in Section B. Section B began online with an introductory module on critical thinking while this discussion occurred face-to-face in week one of Section A.

Data Analysis

I analyzed each case individually and also looked for patterns across cases. Data for this study were analyzed using constant comparative analytical methods, a common approach used in qualitative analysis (Charmaz, 2014; Corbin & Strauss, 2015; Saldaña, 2016). Because the study aimed to understand student myside bias shifting, analysis efforts focused on this issue and those related to it.

Data sources were analyzed differently, using methods appropriate to source types. After a thorough review of all data, given the sheer bulk of material, three sources were found to be of primary value and my analysis efforts centered on them: the pre-post surveys (2), final written argument drafts (4), and interviews (5). These sources were chosen for concentrated analysis because they spread across time, which allowed me to assess myside bias shifting. By assessing only final drafts, I was able to make the project manageable and evaluate participants' best argumentative efforts, which were also drafts that had been reviewed by peers and myself and revised by the participant. Initial argument drafts, student notebook entries, and audio recordings were consulted as secondary sources in instances where confirmation of conclusions drawn from triangulating the three primary sources became necessary. Student drawings are included in Chapter IV, primarily as a supplemental ideographic source supporting the narrative indicated by my analyses.

Survey Analysis and Chart Explication

The quantitative data from the pre-post surveys were analyzed as follows. The instrument (Wolfe, 2012) measured participants' fact-based schema (i.e., the uncritical belief that facts alone create good arguments) and balanced schema (i.e., a preference for arguments acknowledging more than one side). Because fact-based schema items indicate an uncritical belief that facts alone create good arguments, higher fact-based schema scores predict higher myside bias. Because balanced schema items indicate a preference for arguments that acknowledge alternate perspectives, higher balanced schema scores predict lower myside bias.

The instrument embedded in these surveys (see Appendices A and B) utilized ten fact-based schema and five balanced schema items presented in random order. Both item types were answered through the use of a 7-point Likert scale in which participants selected their level of agreement with questions on a range of seven options ranging from “entirely disagree” to “entirely agree.”

Surveys were scored by adding all item totals for each category separately—fact-based and balanced—and then dividing that total by the overall number of questions to arrive at a mean. These quantitative scores represent baseline and final myside bias scores per the instrument; survey one was administered on the first day of class and survey two administered on the final day of class.

Table 6 provides an example of how survey data is reported in Chapter IV. In this case, the participant’s fact-based score dropped from 5.7 at week one to 3.0 at week fifteen, indicating a reduction in myside bias because the fact-based schema has been shown to predict myside bias. Additionally, the participant’s balanced score increased from time one to time two. This indicates a further decrease in myside bias, as the writer’s schema shifted toward a stronger preference for arguments acknowledging more than one side. Surveys were constructed on a 7-point Likert scale, with a possible range

Table 6

Sample Participant’s Pre/Post Argument Schema

Test	Fact-based score	Balanced score
Pretest	5.7	4.2
Posttest	3.0	5.8
Shifting	-2.7	+1.6

of 1-7. This participant's scores thus represent a strong shift away from myside bias toward balanced argumentation over the course of the semester.

Open-ended questions were also included in the pre- and post-surveys. These questions provided additional insight into participants' perceptions of writing, the argument genre, and their own self-efficacy as readers and writers. Responses to these questions are used as supplementary evidence to results reported in Chapter IV.

Written Argument Analysis and Chart Explication

Four final drafts of written arguments from each participant were analyzed. These arguments were collected during Units 1 and 3 and represent all arguments written during the course. No arguments were collected during Unit 2 because none were assigned during that period while students gathered, evaluated, and hypothesized evidence in preparation for their final two arguments.

Written arguments were evaluated using a rubric adapted from the Analytic Scoring Rubric for Argumentative Writing (ASRAW) discussed in Chapter II, in which the researchers evaluated both structural and substantive quality in written arguments (Stapleton & Wu, 2015). I adapted the rubric (see Appendix D) to better reflect both the study's emphases on avoiding myside bias and increasing rhetorical awareness.

Arguments were evaluated on three primary criteria: purpose, audience, and conventions. These criteria align with both the study's empirical and theoretical frameworks. Empirical findings include how a writer's purposes (persuasive vs. consensus, for example) with specific audiences and use of conventions (such as supporting claims, and

raising and supporting counterarguments, for example—behaviors also associated with argument schema) impact myside bias. Furthermore, the study’s theoretical framework—which attended to the ways in which participants interpreted, negotiated, and reflected upon assignments, their writerly identities, evidence, and arguments—were often evidenced in their written arguments.

The written argument, in combination with supplemental written material accompanying the argument (such as audience analysis heuristics or written reflections), was used for argument scoring and analysis. Written arguments were scored by myself and a colleague, who graciously agreed to help me calibrate scores through use of the adapted rubric. After first discussing and clarifying the rubric and scoring decision rules, each scorer evaluated the four arguments produced by the seven participants individually. Decision rules included, for example, utilizing only the purpose articulated in writing by an argument’s author when selecting a purpose score, rather than attempting to discern purpose through the prose itself. They also included using number of descriptors in assessing audience analysis and accepting sound logical reasoning in addition to outside sources in defining what constituted “evidence,” referred to by the rubric. We then discussed our scores for each criterion until we reached complete agreement, resulting in final calibrated scores for each of the 28 arguments.

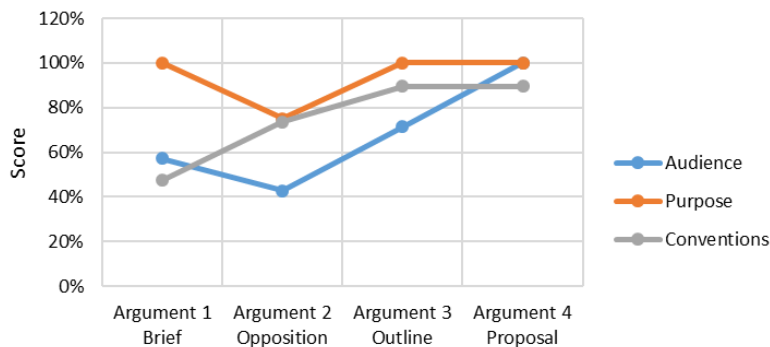
Scores were awarded as follows. The purpose criterion included whether or not a purpose was stated and which type, if stated. Based on research formerly discussed regarding how purpose affects myside bias, the purpose criterion consisted of four levels: none or defensive (0 points awarded), persuasive (5 points awarded), mixed persuasive

and consensus (10 points awarded), and consensus (15 points awarded), for a total possible of 20 points. Because consensus goals have been shown to reduce myside bias, higher scores were given in cases where consensus goals were present. As discussed in Chapter II, audience analysis and adaptation are also implicated in reduced myside bias. For the audience category, the rubric assessed whether or not an audience was articulated (0-5 points), the level of audience analysis evident in the argument (0-10 points), and the level of audience adaptation evident in the argument (0-20 points), for a total possible of 35 points. The final category assessed, argument conventions, is the criterion most often used in assessing myside bias through the presence or absence of counterargumentation, which represents other sides of an issue. Here, the rubric assessed the presence or absence of a claim, counterarguments, and rebuttals. More importantly, it also assessed the quality of reasoning and evidence used to support each of these three genre elements. This criterion was worth a total possible of 95 points.

An example chart representing a participant's arguments over the course of the semester is presented in Figure 1. Each of the four arguments assessed over the course of the semester are represented chronologically from left to right: The Brief, Opposition, Outline, and Proposal arguments. Possible scores on each criterion, for each argument, are reflected in the Y axis of the chart; these scores (as points values) were converted to percentages to enable comparisons between performances on criteria within and across arguments for a given participant. These charts were created for each of the seven participants, based on written argument scoring. They provide a visual representation of participants' myside bias shifting and rhetorical awareness over time.

Figure 1

Sample Chart Representing Shifting Use of Audience, Purpose, and Conventions Over Time



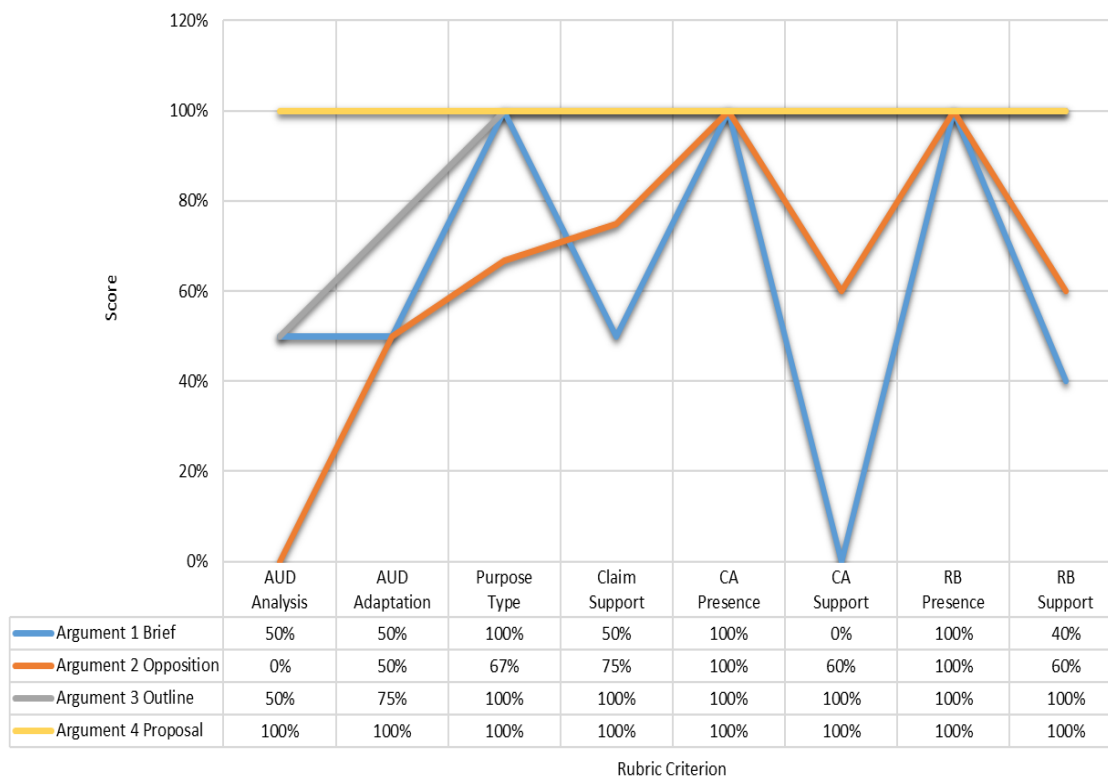
Charts should be interpreted by following the trajectories of each line. Upward trajectories indicate a decrease in myside bias and an increase in rhetorical awareness; downward trajectories indicate the opposite.

An additional chart, also based on calibrated argument scores, is provided in Chapter IV. This chart provides a more granular view by reporting a participant's audience analysis and adaptation behavior, purpose type, and use of conventions by argument. A sample detailed chart is presented in Figure 2, which provides a more focused look at how the same participant navigated the biased/balanced generating task evidenced in written arguments.

As Figure 2 indicates, lines represent a participant's performance by criterion on each of the four arguments written in the course. These detailed charts present a more granular view of how participants shifted over time on disparate criteria relevant to both myside bias and rhetorical awareness. It should be noted that no participant neglected to include a claim in any argument written during the semester, which is why "Claim

Figure 2

Sample Chart Representing Myside Bias Shifting and Rhetorical Awareness



Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student's attention to alternate perspectives.

Presence” does not appear in these charts as a criterion.

Reporting results in this way allowed me to better answer research question two, which asks *how* participants' myside bias shifted over time. For example, the sample chart represented in Figure 2 demonstrates that this writer became increasingly proficient at supporting her own claims with evidence—and simultaneously better at supporting claims which countered her own, a task she did not perform at all in the first argument. This suggests decreased myside bias in text generation because her arguments

increasingly demonstrated consideration of alternate perspectives. Further, this shift was accompanied by an increasing ability to adapt text for her audience, which may suggest a relationship between these activities. On the other hand, as her purpose changed from building consensus in the Brief to a mixture of consensus/persuasive goals in the Opposition argument, audience analysis scores also dropped, suggesting a relationship between goal type and audience analysis. However, that same trajectory was not evident in her audience adaptation performance. This suggests that, for this writer, audience analysis was not a necessary precondition for audience adaptation. When compared with other participants, this chart also clarifies that this writer's purposes were more invested in consensus-building than any other participant's. These types of comparisons enabled me to identify both potential reasons for individual participants' myside bias shifting as well as cross-case patterns and variations.

I used these charts both to analyze data and report the results of such analyses as I worked to answer research question two through the Chapter IV narrative. A common obstacle for qualitative researchers is data reduction, and the sheer amount of qualitative data collected for this study presented a challenging task. Miles and Huberman (1984) have argued that "spatially-compressed, organized display modes are a major avenue to improving qualitative data analysis" (p. 25). Thus, charts were used to visually organize and present myside bias and rhetorical awareness factors evident in the data over time.

These factors included those discussed at length in Chapters I and II, such as the following examples. The presence of and/or support for counterarguments has been the standard criterion in identifying myside bias in a majority of former empirical studies of

the phenomenon. Consensus goals have been found to reduce myside bias, while persuasive goals have been found to exacerbate it. Audience adaptation presupposes consideration of reader perspectives, which do not equate with the writer's, and therefore composes a critical part of acknowledging alternate perspectives. Finally, a writer's purposes, audience analysis and adaptation, and wielding of conventions are inherently related to the theoretical framework of the study, which focuses on how writers interpret, negotiate, and reflect upon specific writing contexts.

Interview Analysis and Chart Explication

Five interviews composed the third primary data source for the study. A codebook was created and maintained throughout analysis. Coding was completed through the use of Dedoose collaborative software, which enabled me to both track code assignment by interview across time and collaborate with a second coder to increase the trustworthiness of results. The first round of coding was done using a priori codes drawn from both the way myside bias was operationalized in the study and the study's theoretical framework. Table 7 defines how myside bias and myside bias shifting were operationalized and provides statement types that warranted the assignment of each code. I began with the codes "gathering," "evaluating," "testing," and "generating" in both biased and balanced forms (e.g., "biased gathering" and "balanced gathering"). These codes were established before coding began and were used to help me answer the study's first research question regarding myside bias shifting. Table 8 provides sample data excerpts which warranted the assignment of each code.

Table 7*Myside Bias Shifting Operationalization and Code Book*

Bias type	Myside bias	Myside bias shifting
Gathering	Gathering arguments/evidence supporting one's own opinions	Gathering arguments/evidence supporting others' opinions
Examples	Searching for, locating, and/or selecting arguments/evidence supporting solely one's opinions	Searching for, locating, and/or selecting arguments/evidence supporting others' opinions
	Failing to search for disconfirming evidence of one's opinions	Searching for disconfirming evidence of one's opinions
	Failing to analyze the implications of the rhetorical situation for argument/evidence gathering	Analyzing the implications of the rhetorical situation for argument/evidence gathering
Evaluating	Evaluating arguments/evidence in a manner biased toward one's opinions	Evaluating arguments/evidence in a manner open toward others' opinions
Examples	Failing to listen to, read, or consider otherside arguments/evidence or doing so cursorily	Listening to, reading, or entertaining otherside arguments/evidence, especially effortfully
	Failing to listen, read, or think empathically by attempting to understand others' opinions or the contexts in which those opinions were generated or might be valid	Listening, reading, or thinking empathically by attempting to understand others' opinions or the contexts in which those opinions were generated or might be valid
	Uncritically accepting one's opinions as "right," "true," or "correct"	Critically evaluating the validity of one's opinions
	Failing to analyze, or cursorily analyzing, the implications of the rhetorical situation for argument/evidence evaluation	Analyzing the implications of the rhetorical situation for argument/evidence evaluation
Testing	Testing hypotheses in a manner biased towards one's opinions	Testing hypotheses in a manner open toward others' opinion
Examples	Failing to allow disconfirming evidence of existing opinions to impact argument formulation	Allowing disconfirming evidence of existing opinions to impact argument formulation
	Failing to weigh myside/otherside evidence before or during opinion formulation and revision processes	Weighing myside/otherside evidence before or during argument formulation and revision processes
	Failing to analyze the implications of the rhetorical situation for hypothesis testing	Analyzing the implications of the rhetorical situation for hypothesis testing
Generating	Generating arguments/evidence in a manner biased toward one's opinions	Generating arguments/evidence in a manner open toward others' opinions
Examples	Discussing or writing arguments which ignore others' opinions	Discussing or writing arguments which attend to others' opinions
	In speech or writing, failing to raise rhetorically relevant counterarguments to one's opinions	In speech or writing, raising rhetorically relevant counterarguments to one's opinions
	In speech or writing, failing to concede validity or value in otherside arguments/evidence	In speech or writing, conceding validity or value in otherside arguments/evidence
	In speech or writing, failing to analyze the implications of the rhetorical situation for argument/evidence generation	In speech or writing, analyzing the implications of the rhetorical situation for argument/evidence generation

Table 8*Sample Data Excerpts from Codebook*

Bias type	Myside bias	Myside bias shifting
Gathering	Gathering arguments/evidence supporting one's own opinions	Gathering arguments/evidence supporting others' opinions
Examples	<i>So, I went into Google search and I just looked up, "What are the benefits of being single?" And I searched through, through reliable sources and then went into those. And kind of skimmed them and then found more specific ones...</i>	<i>Especially when, I myself did not even know the, you know, the problems with being single other than what I felt. So, I was looking for other people's thought on it to understand how other people felt.</i>
Evaluating	Evaluating arguments/evidence in a manner biased toward one's opinions	Evaluating arguments/evidence in a manner open toward others' opinions
Examples	<i>I'm like, "I don't care if it's bad or good I just need to get something down on paper that I actually care about." So, I wrote...I didn't really give too much thought to the evidence until I had after I had written it.</i>	<i>I would look at their sources and kind of look into that and be open-minded and kind of try and put myself in the other side's shoes. Um, because when you're writing something so personal, you also need to understand, "Well is this personal to them? Should I be looking at it with the same lens as I was?"</i>
Testing	Testing hypotheses in a manner biased towards one's opinions	Testing hypotheses in a manner open toward others' opinion
Examples	<i>Because I already had this opinion on it I could go in and kind of create this like, web, of like, essential ideas. So, like, I already had a spine for it without even know, just kind of, within myself. And I was just looking for other people's opinions to back me up.</i>	<i>It all just started by researching, finding the sources. And then I grouped the sources into what kind of things they argued. And then by using the sources I formed a thesis that was kind of rough and over time I refined the thesis. And that's what got me to where I am now.</i>
Generating	Generating arguments/evidence in a manner biased toward one's opinions	Generating arguments/evidence in a manner open toward others' opinions
	<i>Uh, so a lot of [evidence contradicting the thesis] went into, so some of the obvious ones went into my counterclaims. Uh, because I directly, uh, wanted to contradict them. I wanted to call them out. Like, one of the ones that kept coming up, like, every time I talked about the first amendment was someone asking, "Is the first amendment still valid?" And that question gets me frustrated. And I'm like, "Okay. I'm going to find facts of why this is still valid."</i>	<i>And so, I've shifted my opinion because, um, in the meantime, as you're writing it, you really are developing a way to express yourself and to, um concisely explain what you believe and why you believe it. Um, and, and in the meantime validate what, um, the opposing opinion is. Um, and so, yes. I would, yep, I would agree with the, the second paper, the opposition paper more. Um, because I feel like it does come from a less-biased place, um, because I have, I examined both sides and also because, um, yeah. Because of the emphasis on the process instead of the result.</i>

To answer the second research question, I used the study's theoretical framework to identify and analyze acts of interpretation, negotiation, and reflection. Both a priori codes and inductive codes were utilized for each category through two rounds of coding. A priori codes consisted of the following: "interpreting" codes included four secondary sub-codes: "writing context," (with "audience," "purpose," and "conventions" as tertiary codes), "expectations," (with "teacher," "peer," and "audience" as tertiary codes), "assignment," and "writer's role." "Negotiating" codes were assigned in order to gauge myside bias shifting. For negotiating coding, I used process coding which uses codes containing gerunds in order to identify "actions intertwined with the dynamics of time, such as things that emerge, change, occur on particular sequences, or become strategically implemented" (Saldaña, 2016, p. 196).

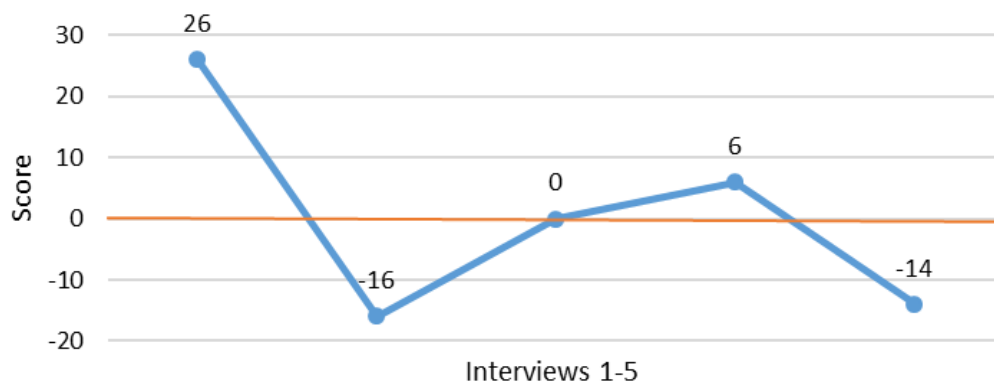
The study's theoretical framework (Flower, 1994), which mapped onto myside bias factors discussed in Chapter II, was used to create these codes, such as "acknowledging," "acting upon," "resisting," "ignoring," "transforming," and "synthesizing" voices that participants heard, recalled, or read. Finally, "reflecting" codes revolved around two central concepts: "awareness" (with "problem detection" and "causal attribution" as tertiary codes) and "control" (with "alternatives" and "evaluation" as tertiary codes), both referring to a participant's reflection upon his or her own gathering, evaluating, hypothesizing, and generating strategies. After codes were assigned, frequency reports across time were generated.

Early on during round one coding, a new code emerged: "identity." I constructed many memos for each participant during first-round coding to record the details of this

new code and other connections I began noticing during the coding process. After the first round was completed, discussion and calibration with a second coder resulted in complete agreement on 20% of the overall interview corpus to ensure methodological trustworthiness. Memos were reviewed for each case, analytic meta-memos were constructed, and data visualizations were created to identify both myside bias shifting and co-occurring codes accompanying shifts in order to answer research question two.

A second round of coding was completed for select codes in order to identify and explain the contexts in excerpts where a priori codes of the theoretical framework were assigned; these second-round codes were generated inductively from the excerpts in which they appeared. For example, the “audience” code was divided into new codes “audience type” (with tertiary codes “self,” “well-known,” “unknown,” “teacher”), “audience awareness” (with tertiary codes “imagining reader while writing,” “empathizing,” “real conversations with readers,” or “not audience aware”), and “audience adaptation” (with tertiary codes “source,” “content generation,” “structure,” “for generic or complex readership”). Certain codes were subjected to second-round coding (e.g., “audience,” “purpose,” and several “negotiating” codes) due to their frequency, lack of explanatory power, and co-occurrence with bias/balance codes.

Chapter IV includes two charts per participant reporting the results of interview coding and analysis. Figure 3, a sample chart, is provided here as a visual representation of overall myside bias shifting over time. The chart depicts the combined numerical assignment of all biased and balanced codes for each of the five interviews. Because biased and balanced codes were combined, numbers represent the proportion of biased to

Figure 3*Sample Participant's Myside Bias Through Interview Comments*

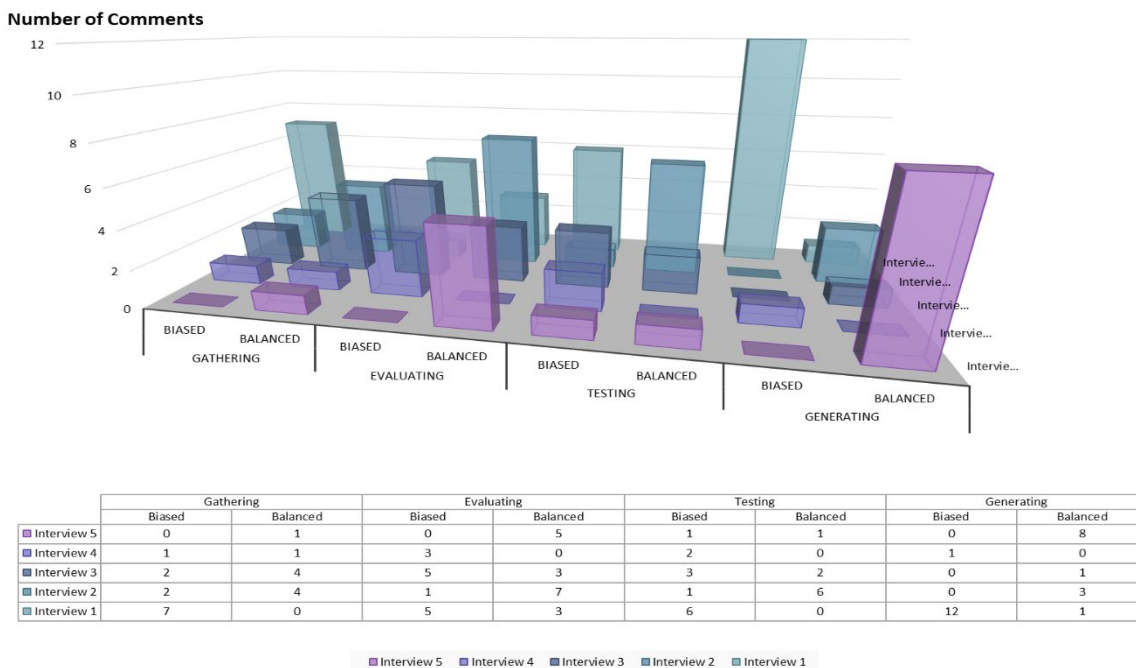
Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus lower scores demonstrate lower bias. A score of zero denotes an equal number of each comment type was made.

balanced statements made by the participant, and the line represents the trajectory over time among interviews. For example, if a participant made precisely equal numbers of biased and balanced statements, their score would be 0 (as the participant in the sample chart indeed did during Interview 3). When reading this chart, higher numbers indicate greater bias, and lower numbers indicate lower bias. This sample chart, for example, indicates the participant's myside bias was highest in Interview 1 and lowest at Interview 2. It also demonstrates a radical decrease in myside bias from Interview 1 to Interview 5 was suggested by the interview analysis.

The second chart provides a more detailed look at the specific types of myside bias shifting evidenced in interviews. The sample chart represented in Figure 4 separates myside bias into the four categories of myside bias based on the way the phenomenon was operationalized for this study: gathering arguments/evidence, evaluating arguments/

Figure 4

Myside Bias Shifting Through Interviews Sample Chart



evidence, testing hypotheses, and generating arguments/evidence. Interview 1 results appear in the foreground while subsequent interview results are represented in rows moving to the rear of the chart. The height of bars indicates frequencies of each assigned code. By comparing the biased and balanced columns in each category from front to back, this chart depicts myside bias shifting over time for a given participant. These charts provided easily accessible results of myside bias shifting, by category, over time; they allowed me to identify which tasks were more and/or less problematic for a given writer at each of five different points in the semester.

Triangulation Across Sources

This study operationalized myside bias to include four elements: gathering,

evaluating, and generating arguments/evidence, and hypothesizing claims. Each of the three primary data sources analyzed for this study provided information on participant myside bias shifting, but differently, due to the nature of the source and its operationalization of myside bias. Because each of the sources operationalized the phenomenon differently, my goal was to triangulate them in order to both increase the trustworthiness of findings and to demonstrate the variability between participants. Triangulation formed an integral part of analysis. It was accomplished through the creation of many written memos, reports, and data visualizations comparing and contrasting the results of each source, which eventually led to the conclusions drawn and reported in Chapter IV.

The pre- and post-surveys included an imbedded instrument created to assess argument schema (Wolfe, 2012). As discussed in Chapter II, a fact-based schema has been shown to predict myside bias and a balanced schema has been shown to mitigate it. For example, a writer with a strong fact-based schema believes that strong arguments are created by simply lining up facts in support of the writer's claim, while a balanced argument schema is evidenced in a writer who believes strong arguments attend to multiple sides by acknowledging alternative perspectives. The survey instrument was thus predicated on argument schema as a foundational factor in myside bias and therefore operationalized it solely as a phenomenon hailing from a writer's extant mental model of argument. Consequently, results from the survey instrument are presumed to indicate a writer's mental model of argument.

Comparison of pre- and post-surveys provided information solely on how

participants' mental models did or did not alter over the course of the semester. General limitations of surveys as data sources include that they are self-report measures captured during a limited amount of time. Accuracy of results depend upon the participant's motivation, reading comprehension, and time—as well as the validity of the instrument itself.

Written arguments as a data source provided a different angle on myside bias shifting than did surveys. For the current study, written arguments, in combination with supplementary written documents (e.g., peer reviews, graphic organizers, written reflections) operationalized myside bias in alignment with three of the four elements presented earlier in Table 3; they provided evidence of the extent to which participants gathered, evaluated, and generated evidence and arguments in support of their own and others' opinions. However, the fourth element of myside bias (testing hypotheses), as operationalized in this study, was not observable in final written argument drafts, though earlier drafts provided some evidence of how participants' claims changed over time.

The rubric used to evaluate written arguments contained three sections: audience, purpose, and conventions. The audience criterion assessed the extent to which arguments were tailored for the intended audience through tone, style, content, diction, and organizational structure—all elements inherent to the way myside bias was operationalized and coded in the study (see Table 8 examples). The purpose criterion assessed the extent to which a writer aimed to reach consensus with alternative perspectives or merely persuade a reader who held alternative perspectives, per former studies of myside bias demonstrating the former approach as a mitigating factor and the

latter as a myside bias exacerbating factor. Finally, conventions assessed included the writer's claim, counterarguments, and rebuttals. Criteria revolved around the use of evidence and reasons to support the writer's own and alternate positions on the issue, as many former studies of myside bias have utilized to assess myside bias. Limitations of written artifacts as a data source arise from the many factors potentially at play during text construction, including cognitive load, working memory, background knowledge, language facility, genre acquisition, time management skills, self-regulation, self-efficacy, and motivation. Written artifacts are products that cannot fully capture the processes (such as gathering or testing, for example) that led to their creation.

The final primary source used to triangulate data was a set of five interviews spread out over time per participant. Interview protocols (see Appendix C) were constructed in alignment with the way myside bias was operationalized for the study, as demonstrated in Table 8. Questions were constructed to assess each of the four elements of myside bias: gathering, evaluating, and generating arguments and evidence, and testing hypotheses. The interviewer was instructed to ask all questions on the protocol consistently across interviews. Each of the five protocols asked identical questions to assess myside bias shifting over time, in addition to other questions generated from written artifacts as they were collected and other events occurring throughout the semester. Interviews were synchronized to a participant's completion of major assignments in the course. Limitations of interviews as a data source include the potential for social desirability bias, as well as the problematic role of recall when describing research and writing activities.

Each of these three primary sources analyzed for this study—surveys, written arguments, and interviews—have strengths and limitations as evidence of myside bias shifting. By triangulating the results of all three, my goal was to provide as accurate and full a picture of whether and how participants’ myside bias shifted over time.

Trustworthiness and Credibility

In this study, validity and credibility were not defined as they typically are in quantitative research paradigms. Firestone (1987) argues that “the quantitative study must convince the reader that procedures have been followed faithfully because very little concrete description of what anyone does is provided. The qualitative study provides the reader with a depiction in enough detail to show that the author’s conclusion ‘makes sense’” (p. 19). Therefore, “validity” is defined in this study as the assessment of researcher credibility; more specifically, the notion that the findings are trustworthy given the presented data and analyses (Lincoln & Guba, 1985).

Ontologically, I operate on the assumption that reality is highly subjective. In order to gain credibility, this worldview requires me to articulate in detail the processes through which results are interpreted for my readers. This worldview is not an unusual one among researchers. Merriam and Tisdell (2016) remark that

...because human beings are the primary instrument of data collection and analysis in qualitative research, interpretations of reality are accessed directly through their observations and interviews. We are thus “closer” to reality than if a data collection instrument had been interjected between us and the participants. (p. 244)

I utilized several methods to increase confidence in the trustworthiness of the

conclusions reached in this study. These methods included data triangulation, the use of an external interviewer, negative case analysis, multiple coders and argument calibration, data audits, and ecological validity. I describe each of these methods below and the justifications for their use.

Triangulation

I collected multiple sources over the 15-week period of the study. As mentioned previously, three primary data sources were selected for focused analysis in order to increase trustworthiness in the study's results. Patton (2015) has argued that

triangulation, in whatever form, is a powerful strategy for increasing credibility and quality by countering the concern (or accusation) that a study's findings are simply an artifact of a single method, a single source, or a single investigator's blinders. (p. 674)

The aim of this qualitative research was not to obtain an objective "truth" that might be widely generalizable; rather, it was to understand the experiences of several students in an in-depth and ecologically valid way to extend our understanding and add to the extant research base. However, as also mentioned previously, qualitative researchers have made compelling arguments for the transferability of trustworthy results derived from qualitative methods, and their potential for articulating causal relationships between phenomena (Maxwell, 2004; Yin, 2014). By triangulating the three primary data sources analyzed for this study, my goal was to solidify confidence in and transferability of the study's results.

External Interviewer

Because I am both the researcher in the study as well as the teacher of the course,

I took steps to ensure data gathering processes were conducted ethically. Communication regarding the study was sent through an external researcher and not me. Additionally, I did not conduct interviews myself; instead, an external researcher, unrelated to the course or project, conducted interviews in order to prevent any participant perception of coercion. I did not access interview audio or transcripts until the completion of the semester in order to prevent any potential for my own biases either affecting my teaching or the study's integrity.

Negative Case Analysis

I actively sought disconfirming evidence of my conclusions throughout the analysis process. Merriam and Tisdell (2016) have argued that “credibility hinges partially on the integrity of the researcher” (p. 248). Further, Patton (2015) notes that one way to accomplish this is to “*look for data that support alternative explanations*” (p. 653, emphasis in original). Particularly in teacher research, where I am invested in my students' success, quality research involved my active search for disconfirming evidence in cases where student myside bias appeared to wane. Additionally, by establishing at the outset of the study the concrete operationalization of myside bias shifting, I was able to maintain analytical internal consistency. When participants' myside bias increased, I examined potential reasons and clearly acknowledge when and why I believe this result occurred.

Multiple Coders

Multiple coders were involved in interview data analysis to establish the study's

credibility. A second coder both helped me develop codes and participated in data coding. Coders reached an appropriate level of inter-coder agreement on a sub-set of the data, after which I coded the remainder of the data. Additionally, written arguments were assessed by me, and a colleague not involved in the study. Each argument was individually assessed using a pre-established rubric (see Appendix D), after which each argument was discussed until we reached full agreement.

Data Audits

Validity of findings were supported by periodic data audits. An external researcher conducted data audits throughout the research process, through conversations with me based on written reports and review of the project through Dedoose coding software. This external researcher examined both data analysis processes and products in order to evaluate whether interpretations and findings were warranted by the data.

Ecological Validity

An advantage of this study is the ecological validity established by conducting research on argument production in a naturalistic setting: an argument writing classroom. A large proportion of studies on myside bias have been conducted using experimental procedures under contrived circumstances. The setting of this study is especially conducive to a study of myside bias as the phenomenon is prevalent in FYC courses.

Limitations of the Study

This study had several limitations. It investigated seven students enrolled in two

composition courses taught by a single instructor at one university. Student writing was the result of a lifetime of exposure to various literacy practices, including reading, writing, and speaking. Participant background knowledge and experience with course concepts affected the ways in which they interacted with me as their teacher, their peers, and the curriculum. Further, many students were still new to the college experience and were navigating new identities as emerging adult college students. These factors likely impacted their learning.

This multiple case study was designed to increase transferability through rich and clear descriptions of the study context, methods, and results. The goal of the study was not to produce generalizable results; rather, to deeply investigate how several individual students navigated a curriculum designed to counter myside bias in order to both: (a) inform local teaching practices, and (b) provide data for replication in alternative contexts.

This study was also limited by agreement to participate. It is likely that those students who most struggle with myside bias may not have agreed to participate in the study, which presented a likely self-selection bias. I attempted to alleviate this limitation by selecting all seven students who agreed to participate; this decision ensured the widest possible perspective on how students negotiated myside bias in the course.

Another limitation of the study was the effect of interviewing on student learning. Interviews provided a space for students to consider and reflect upon their writing processes and strategies, especially through prompts focusing on their biases, which would not occur were a study not being conducted. This practice may have increased the

frequency or depth of student reflection, an activity known to reduce myside bias (Golanics & Nussbaum, 2008; Klaczynski, 2000; Klaczynski & Lavallee, 2005; McCrudden & Barnes, 2016; Song & Ferretti, 2013). Judgments about the efficacy of the curriculum in reducing myside bias, therefore, should include an awareness of how interviews may have affected student learning.

It may be argued that the tension between my dual roles as teacher and researcher pose a limitation to the study, as this situation could potentially divert my attention from instruction toward data collection and analysis. Ray (1992) has argued, however, that this critique “assumes that research and teaching are mutually exclusive, or even competing, enterprises” (p. 184). My perspective holds that effective teaching involves research, regardless of the situation, and that the more invested in research a teacher is, the more effective she will be in teaching. Cochran-Smith and Lytle (2001) have described teacher research as an “inquiry stance” through its attention beyond student performance to the ways teachers are implicated within it, as a move toward social justice (p. 46).

Relatedly, it is possible that my analysis of the cases—comprised of students in a course I taught with a curriculum I designed—might, ironically, include a bias in favor of students’ myside bias reduction. My investment in my students’ learning and my own teaching practice is strong. To work against this potentiality, I ensured criticality relative to my teaching practice in several ways. These included written argument calibration with an outside reviewer to ensure even application of evaluation criteria across and within cases, multiple coders of interview transcripts, active searches for alternate explanations in the data, and regular use of analytical memos throughout the analysis

process.

An important limitation of the study is the warrant that curricula are what makes the difference in student learning, rather than the way that teachers enact them. To assume this would not only be inaccurate but would de-professionalize teaching. While there are many factors at play in educational equations, teaching and learning are social activities that occur in specific contexts among human beings. A curriculum is more a map guiding the actual roads taken in teaching than an identical reflection of the journey. Apple (2004) astutely argues that educational research should go beyond “input-output studies of school achievement” to instead “see the complex forms of interaction that occur in classrooms” (p. 15). This study captured only a fraction of this complexity in audio recordings; this resulted in a perspective of myside bias shifting that does not fully attend to the role that teaching played in the phenomenon. Because the role of the teacher in myside bias was outside the scope of this study, this fact is easily overlooked; however, the results of the study should be interpreted with this reality in mind.

Last, this study investigated students over the course of a single semester. Given the contextual nature of writing, it might be argued that any learning which occurred over the duration of the course will not directly transfer into other writing or communication contexts. However, rhetorical awareness, as a metacognitive understanding and activity, has been implicated in learning transfer in several studies (Carroll, 2002; Clark & Hernandez, 2011; Jankens, 2014; Johns, 2008). Future research might attend to direct connections between rhetorical awareness and its role in learning transfer regarding myside bias.

Summary

In conclusion, this project utilized a case study methodology. The case was bounded by the students who agreed to participate. FYC courses were selected as the site of this research because it is in such courses that universities expect students to learn how to write balanced arguments supported by evidence in preparation for future courses which require researched argument writing. A survey was used to measure participants' propensity toward and mitigation of myside bias. Though a majority of participation activities transpired during the normal course of the class, such as writing assignments, drawings, survey completion, and peer reviews, participants underwent five interviews. All data sources collected were utilized to answer the study's research questions, with a particular analytical focus on the three sources which held the most explanatory power when triangulated.

CHAPTER IV

FINDINGS

The goal of this research was to ascertain and understand whether and how students in FYC courses shift their myside bias as they navigated a curriculum designed build rhetorical awareness. Myside bias was defined and operationalized as a behavior in which one gathers, evaluates, or generates evidence, and/or tests hypotheses, in support of instantiated opinions or beliefs. Rhetorical awareness denotes a writer's sense of purpose and audience leading to the appropriate use of conventions, style, and arrangement in writing (Porter & Ramsey, 1984). Because rhetorical awareness requires writers to consider readers' perspectives, it can lead to altered goals and the use of written conventions that mitigate myside bias.

Chapter II detailed common factors that lead to myside bias and its reduction in former empirical studies, including a writer's argument schema, cognitive processing, and metacognitive practices. It discussed how a writer's position within a rhetorical context, goals for writing, and audience and genre awareness affect the production of rhetorically aware texts. Pedagogical strategies recommended by former studies were summarized in the chapter. With these factors and strategies in mind, I constructed a semester-long FYC curriculum, summarized in Table 9, designed to mitigate myside bias and increase rhetorical awareness (see curriculum in Appendix F). A highly structured peer review was completed for each written assignment before final drafts were submitted.

After an exploratory mixed-methods pilot study verified the value of the current

Table 9*Course Curriculum*

Unit 1		Unit 2			Unit 3	
Week 2: Brief	Week 4: Opposition	Week 6: Stasis	Week 8: Graphic organizer	Week 10: Toulmin analysis	Week 12: PAI outline	Week 14: Proposal argument from inquiry
Write a 1- to 2- page argument on any subject for any audience	Write a 1- to 2- page argument in support of the opposite claim from the Brief using Rogerian strategies & written to a resistant audience	Form a research question; collect information to build background knowledge (facts, definitions, causes & effects, & values)	Collect, evaluate, & read ten sources relevant to your question; provide 10 contradictory sources for a peer; evaluate all 20 sources & write a one-page reflection proposing an argument	Analyze & revise proposed argument by identifying warrants, backing, grounds, evidence, conditions of rebuttal, & qualifiers for an audience	Structure the argument for a self-selected audience	Write a 6- to 8- page argument proposing a solution to a problem
Assess student argument schema; begin explicit instruction in argument	Practice dialogical thinking, Rogerian argument, rhetorical listening; explicit instruction in argument; database navigation	Practice research question construction; explicit instruction in epistemology, “facts,” & definitional argument	Teach & practice research strategies and tools; explicit instruction in evidence credibility; one-on- one conferencing with instructor & librarians	Explicit instruction in argument; practice in audience awareness & adaptation; practice in dialogical thinking	Explicit instruction in argument; practice counterargument generation, concession, evidence weighing	Explicit instruction in citation & plagiarism, paragraph unity, coherence, & development; practice source integration

study, seven college students agreed to participate in the current study from a course which utilized this curriculum. Former studies have used primarily experimental methods to better understand myside bias; this study aimed instead to understand more fully how students negotiate myside bias over the course of an entire semester in order to attend to how writers' unique backgrounds, experiences, and writing contexts affect the phenomenon under investigation. The current study asked the following questions:

1. When participating in a curriculum centered around rhetorical awareness, do students in First Year Composition courses shift their myside bias?
2. If so, how?

To answer these questions, I adopted a multiple case study methodology.

Quantitative results from the data collected proved useful in assessing myside bias shifting, but qualitative content analysis was also used to answer the first research question. The second question required qualitative data analysis in order to discuss what prompted participants to behave as they did. Though experimental methods are often perceived as the "gold standard" in educational research on the assumption that they alone can account for causality, Yin (2014) has argued that case studies can be effectively used "when you are trying to attribute causal relationships—and not just wanting to explore or describe a situation" (p. 31). As discussed previously, Maxwell (2004) and others have similarly argued that qualitative methods are ideally suited to explain the *how* of causality. By examining seven cases, the current study design went beyond Yin's assertion that two or three cases can potentially replicate study findings, as "the more replications, the more robust findings will be" (pp. 33-34). Context is a crucial component of the learning equation, as both research and practice in educational fields

have shown. The case study methodology is appropriately utilized when an investigation must cover both a particular phenomenon and the context within which the phenomenon is occurring, either because (a) the context is hypothesized to contain important explanatory variables about the phenomenon, or (b) the boundaries between the phenomenon and context are not clearly evident (Yin, 2014).

Such was the case in the current study, which adopted Flower's (1994) social cognitive theory of writing as the construction of negotiated meaning as a lens for analysis and description of the ways in which participants' unique contexts affected their myside bias and rhetorical awareness. This framework is founded on the premises that writing is (1) an active constructive process, (2) a social and rhetorical act, (3) the negotiation of meaning, and (4) literate practice in which writers negotiate meaning through three key events: acts of interpretation, acts of negotiation, and acts of reflection.

Chapter IV reports findings by first detailing basic demographic characteristics of participants. I then discuss each of the seven cases in succession. The order in which the cases appear roughly represents myside bias mitigation, from most reduced first to least reduced last; however, as the "reading across the cases" section of the chapter notes, this is an imprecise judgment based on occasionally contradictory data, depending on the source consulted.

For each case, I first described the participant to provide an understanding of the writer behind the writing. The study's first research question was answered through a report of how the participant's myside bias shifted (or did not). What follows is a chronological narrative which answers the study's second research question. Narratives

employed Flower's (1994) theoretical framework of writing as the construction of negotiated meaning as a lens for understanding how each writer interpreted, negotiated, and reflected upon the argument-writing contexts they encountered over time.

These findings are valuable as they illuminate the highly individualized journey each writer took and what each case study contributes to our understanding of the phenomenon under investigation. As my discussion of the cases progresses, I occasionally noted cross-case comparisons in order to highlight similarities and differences between participants which informed the final section of the chapter. In that final section, I read across the cases for patterns and conclusions.

Participant Demographics

Using the methods detailed in Chapter III, seven participants were invited and agreed to participate in this study. Table 10 summarizes basic demographic and background information for the seven participants at the time data were collected, after which a brief discussion of similarities among and differences between each of the seven participants follows. Pseudonyms were assigned to participants in order to protect their privacy.

Similarities among participants are indicative of the cultural context discussed in Chapter III: males were two years older than females, as all three male participants had served 2-year religious missions. All seven participants identified as members of The Church of Jesus Christ faith, the predominant religion in the area. Though two participants hailed from other states, the majority of participants were raised in Utah and

Table 10*Participant Demographics*

Factor	Emily	Kevin	Rachel	Tanner	Sadie	Abigail	Chris
Age	18	20	18	20	18	18	20
Gender	Female	Male	Female	Male	Female	Female	Male
Ethnicity	White	White	White	White	White	White	White
Major	English	Biology	Health Science	Statistics & Economics	Animal Science	Marketing	Engineering
GPA	3.78	4.0	4.0	3.60	3.54	3.54	2.49
Earned credit hours	15	49	34	64	27	53	34
Where credits earned	AP, CC	AP, OU	ACT, AP, CE, OU	AP	AP	ACT, AP, USU	AP, OU, USU
Where raised	Utah	Minnesota	Utah	Utah	Virginia	Utah	Utah
Last English course	AP English Lit. & Comp.	AP English Lit. & Comp.	CE English 1010	AP English Lit. & Comp.	AP English Lit. & Comp.	11 th Grade Honors English	USU English 1010

Note. The following codes represent where credit hours were earned: ACT score credit (ACT), Advanced Placement (AP), Community College (CC), Concurrent Enrollment (CE), Other University (OU), and Utah State University (USU).

the religion was what drew both Kevin and Sadie to the institution. Other similarities among the participants include their completion of at least 15 credits before the semester data was collected, and their racial homogeneity.

On the other hand, several differences between participants may have contributed to study findings. These included a wide variety of majors, past educational modalities, and experiences in English courses. All but two participants self-identified as a “*freshman*” regardless of how many college credits had been earned, on the logic that the semester in which the study was conducted was their first in formal college attendance (including Tanner, who had completed enough credits through the AP program to be categorized a junior). The two participants who self-identified as *sophomores* had already attended two (Abigail) and three (Chris) semesters at USU.

Importantly, past experiences with English courses demonstrate their wide variety of preparation for a course in research writing. For example, due to her high ACT score, Abigail had not taken any English course at all since 11th grade. Rachel took the first-semester FYC course (ENGL 1010) mandated by the State during high school as a concurrent enrollment course. Chris was the only participant who had completed this course on a college campus with a college instructor. Emily, Kevin, Tanner and Sadie were all able to bypass ENGL 1010 due to a passing score on an AP test taken during high school.

Emily: The Reflective Dialogist

If I was actually saying this to somebody, this is the kind of stuff that they would be saying back to me. So, how can I change what I’m saying, um, to, one) answer

questions they were asking me before, and two) address any counterarguments that they were saying? It translated it into just like, “Oh it’s just two friends speaking to one another over a cup of hot chocolate.” And so, it was a lot more of like, um, almost like a discussion, because it was as if I were replying to questions that were being said, but like, I wasn’t, that weren’t actually written, if that makes sense...Um, so it just kind of became more of like a, it felt two-sided, not just one-sided.

Emily identified as, foremost, a writer. Her lived experiences in school and her social life had contributed to this self-conception. An English major with a creative writing emphasis, she noted the important role writing had held in her life repeatedly. Her identity as a single young woman in a world of dating or engaged peers led to her feel somewhat like a social outcast at the outset of the course; she used writing to process these and other thoughts and feelings and had done so for years, which led to her selection of an English major. Writing was a comfort zone for Emily; she viewed it as an effective tool for both self-talk and communication with others. Journaling, in particular, was a crucially important part of her identity. She noted that her friends regularly gifted one another with notebooks to use as journals and encouraged one another to write and reflect because “it’s a big part of who we are.”

Emily’s home life had influenced her approach to writing long before she enrolled in English 2010 or selected a major. She maintained journals since her youth and writing was a space for her to live, to think, to talk to herself and others, and to shine. She shared in interviews that her family had long struggled with mental and physical illnesses, and interestingly, that they all used creative outlets as coping mechanisms: her bipolar mother was a quilter, her anxiety-plagued brother was a videographer, her epileptic sister also wrote. Emily never named her own struggle in a diagnostic way. Instead, the phantom

hovered around the edges of her present and immediate future—one she can keep at bay

by writing about it.

You can sometimes fall into a depressive state...and so, I argued that there are benefits, kind of as a letter to myself, to remind myself that like, it's a good thing. You should take this time to blossom and become a better person...um, loneliness is something that can cause a lot of other mental illnesses. And it's really important for me because my mom—she shares a lot of her stories of when she first moved out of the home she was completely lonely. And now I'm in this spot where I'm in the same place as she was. And I find myself kind of lonely. And like, my roommates—all they can talk about is their relationships.

Emily's thought process was inherently dialogical, and she often utilized conversational metaphors to talk about her writing. She demonstrated an incredible capacity for empathic listening, and though she rarely spoke in class, she excelled in one-on-one peer review conversations by providing astute advice on audience awareness and adaptation. Emily's years of reflective writing practice, her self-conception as "a writer," and her motivation to improve further meant she entered the course equipped with many assets. She described the course as "a step on my ladder" as an English major, which excited her. At the outset of the course, she longed to connect with others, and this desire is evident in the topics she chose, her writing voice and style, and her approach to the course.

Myside Bias Shifting

Multiple data points indicate that Emily's myside bias reduced drastically over the semester. Table 11 demonstrates her scores on the instrument administered at the beginning and end of the course. The instrument assessed the strength of a "fact-based" versus a "balanced" argument schema, and as Chapter II details, the former exacerbates

myside bias while the latter reduces it (Wolfe, 2012). Emily's shifts both away from a fact-based and toward a balanced argument schema, from time one to time two, were the most pronounced among the study's participants (and indeed, among all students enrolled in the courses from which participants were drawn: $N = 47$). Results demonstrate that her fact-based score dropped while her balanced score rose, indicating a strong reduction in myside bias.

Table 11

Emily's Pre/Post Argument Schema

Test	Fact-based score	Balanced score	Definition of argument
Pretest	5.7	4.2	"Intro, 3+ paragraphs (one for each point) and a conclusion."
Posttest	3.0	5.8	"A captivating intro followed by a STRONG thesis then reasons supporting thesis (and counter-arguments against) and a conclusion with a strong clincher."
Shift	-2.7	+1.6	

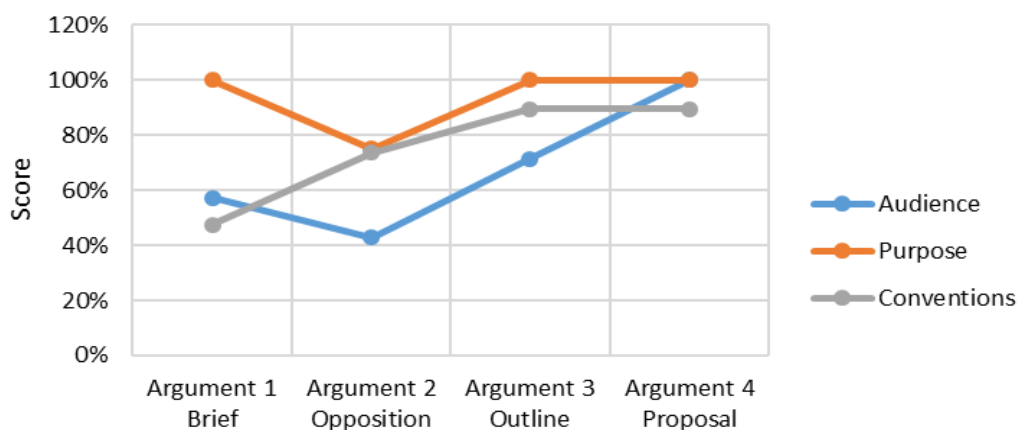
Survey results are further confirmed by the contrast apparent in Emily's definitions of a "good argument" between the start and end of the course, as demonstrated in Table 11. Note her utter focus on formulaic paragraphing characteristics (describing the classic "five-paragraph essay") in her first definition, along with the complete absence of a claim or acknowledgement of alternate views. Emily's revised definition by the end of the course not only highlighted the importance of a supported thesis but went further to clarify her newfound rhetorical awareness in argument: the introduction is still there, but she noted that it should be "captivating." Additionally,

where no mention of alternate perspectives appeared in her first description, she mentioned counterarguments by name at the end of the course.

A strong shift away from myside bias and toward rhetorical awareness also bore out in Emily's written arguments over the semester. Figure 5 demonstrates how Emily's purpose and audience analysis/adaptation moved together; consensus goals came with higher audience scores while mixed goals (consensus and persuasive) correlate with lower audience scores.

Figure 5

Emily's Shifting Use of Audience, Purpose, and Conventions Over Time



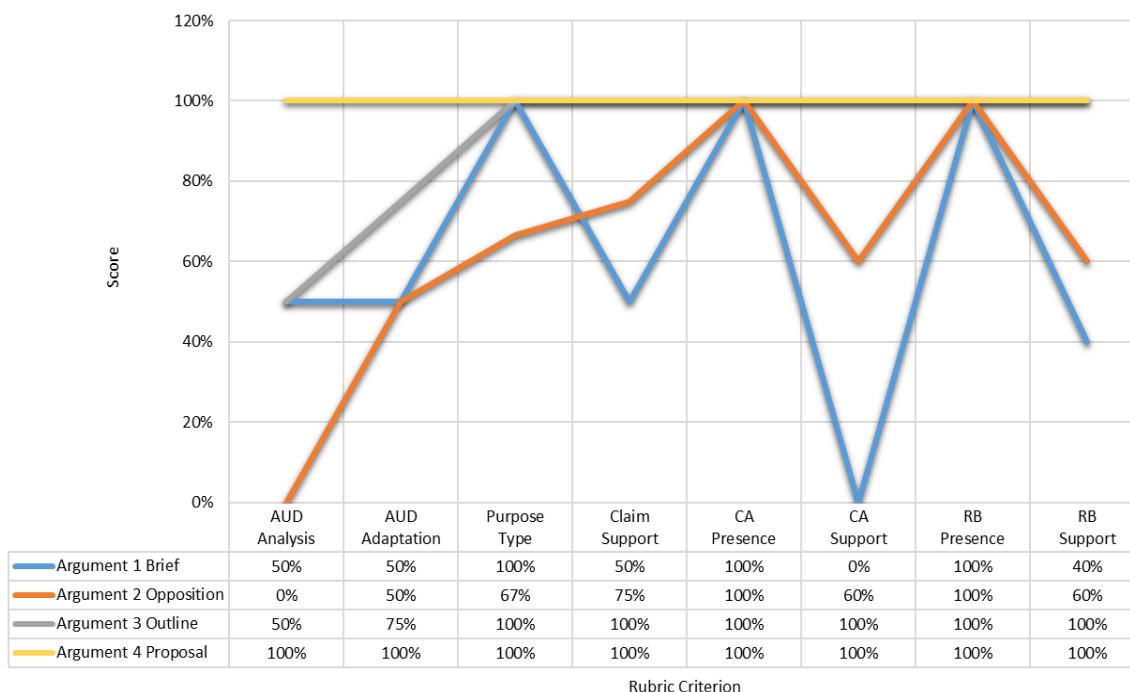
Notably, Emily's utilization of argument conventions moved in a consistent upward trajectory. This is true even in the Opposition argument, where her purpose and audience scores fell, as she became more adept with the genre's strategies of supporting her claims with reasons and evidence, raising, and supporting counterarguments, and conceding or refuting counterarguments where appropriate.

The explanation for this oddity may reside in her audience scores and how they

were allocated. As Figure 6 demonstrates, though Emily's audience analysis score dropped in the Opposition, her adaptation remained consistent with her performance in the Brief. Thus, while her audience adaptation scores either remained constant or rose throughout the course, along with her conventions scores, her audience analysis score dropped only in the Opposition, along with her shift down to mixed rather than consensus goals. This could be attributed to several factors, including her advanced practice of writing, her resistance to the Oppositional claim, and/or analysis she did that was not captured in the written document itself.

Figure 6

Emily's Myside Bias Shifting and Rhetorical Awareness

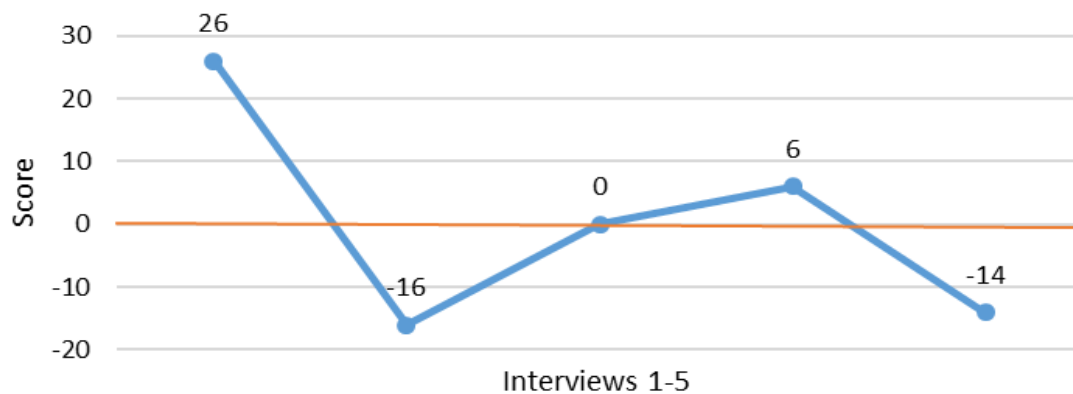


Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student's attention to alternate perspectives.

Finally, Emily's notable reduction in myside bias is evidenced through both quantitative and qualitative comparisons of biased to balanced statements, beliefs, behaviors, and strategies discussed during the five interviews occurring over the course of the semester. Emily's case, like those of her peers, demonstrates that writers are rarely operating in a singularly biased or balanced way. Participants' discussions during interviews were rarely assigned one or the other type of code; instead, they most often were assigned both within a single interview session and sometimes within the same excerpt. In Figure 7, a score of 0 indicates equally balanced and biased codes were assigned during the interview. Scores above 0 indicate biased codes outweighed balanced codes, while scores below 0 indicate the opposite.

Figure 7

Emily's Myside Bias Through Interview Comments



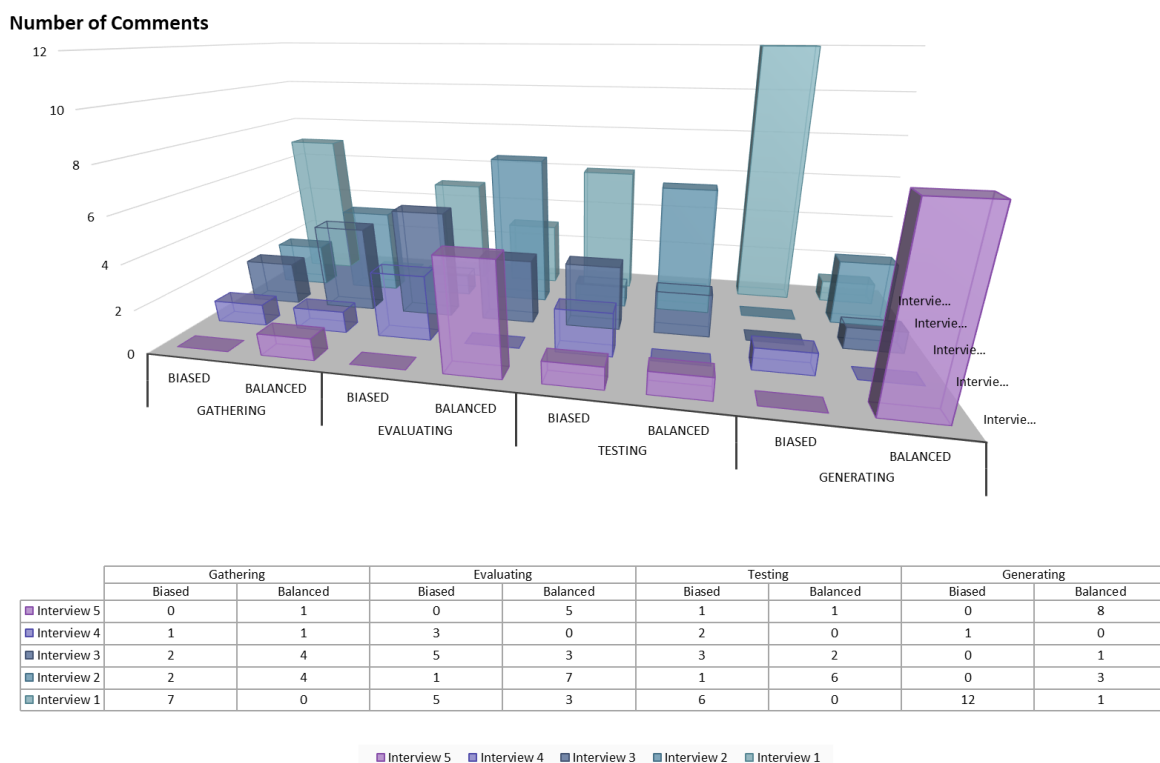
Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus, lower scores demonstrate lower bias. A score of zero denotes an equal number of each comment type was made.

Recall that this study operationalized myside bias by examining four behaviors: gathering, evaluating, and generating evidence or testing hypotheses in support of a

predetermined or preferred claim. Figure 8 visually represents how Emily’s discussions of her writing in interviews demonstrated various levels of myside bias over the course of the semester. Though she began the course with gathering as a major weakness, she turned it into a strength over time; this is especially true during Unit 2, when assignments most heavily featured information gathering tasks. Similarly, she began the course with evaluating as a major weakness but turned it into a strong finish by the end of the course. Given her problematic start, Emily showed perhaps the greatest improvement in testing

Figure 8

Emily’s Myside Bias Through Interview Comments by Criterion



Note. This chart depicts how a participant’s myside bias shifted over time by comparing biased to balanced comments during interviews. The number of comments is represented separately for each of the four ways myside bias was operationalized in the study: gathering, evaluating, testing, and generating. The chart should be read from back to front for chronological progression over the semester.

over time, and as a highly biased generator at the outset of the course, she tied Kevin for the most balanced comments during interviews by the end of the course.

In summary, all three major data points—surveys, written arguments, and interviews—demonstrate a large myside bias reduction. The important question then arises: What led to Emily’s dramatic decrease? The following discussion utilizes the study’s theoretical and empirical frameworks to describe how Emily navigated writing arguments in the course in order to highlight factors most likely at play.

Unit One

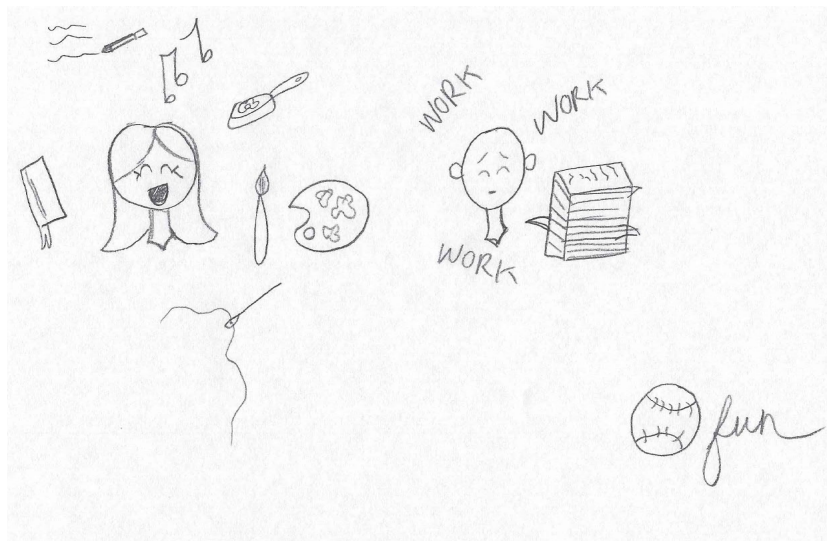
Emily began the course by fulfilling what she saw as an important need to express support for herself and her romantic situation (or lack thereof). She discussed how difficult it was for her, as a young woman who was not in a relationship or dating, to be surrounded by a peer culture she described as obsessed with marriage. In the Brief, the inaugural argument of the course, she argued almost single-mindedly the benefits of being single. Though she cursorily raised counterarguments in her introduction material, she also refuted them without serious consideration, sources supporting the alternative point of view, or meaningful discussion. Her opening sentence, for example, acknowledged: “No one wants to die alone,” after which she asserted that this was not a good enough reason for “settling,” as if all romantic relationships involved that. At the top of the argument itself, she defined her audience as “all the single ladies (single women below 30, including myself)” and her written purpose was “to encourage.”

Emily interpreted the first argument assignment of the course as a chance for her to address an issue she found frustrating. She saw her readers as young women like

herself and even included herself, reminiscent of her penchant for reflective journaling. Emily did not draw her interpretation of the Brief rhetorical situation when prompted because she had not yet selected a claim; instead, she brainstormed ideas on what to write about. Figure 9 shows her depiction of her topic at the moment drawings were collected: why creative people are happier than others. In describing her drawing, she discussed her goal of trying to convince others that being creative will make them happy and her drawing contrasted herself (happy creative) with others (unhappy worker).

Figure 9

Emily's Brainstorm for Her Brief Topic



Emily must have reflected on the validity of that comparison because she completely shifted claims in her first argument to instead assert why singlehood is rewarding. Ironically, in interviews, she divulged the difficulties she was experiencing with loneliness and feeling out of place compared to her roommates and other college

students because she was not dating; however, in her argument, none of this comes through. Tonally, she was as confident as she could be, writing, “Whoever said a woman needs a man to have a reason to look good was obviously a man,” “Singlehood is less of a tragedy as it is a celebration,” and “the confidence of a single woman is the sexiest thing in the world.” You can hear her attempting to talk herself out of her own feelings of grief and loneliness at not fitting into the norm she felt surrounded by.

Emily’s written goal in the Brief Argument (the first of the course) was a consensus goal: “to encourage.” She encouraged herself and others who might be like her in tone, style, and content. Though this goal might be termed a consensus goal, she was still single-mindedly backing a claim that was predetermined in an effort to convince both others and her. Interviews clarified that many other goals (mainly rhetorical in nature) were at play: be audience aware, compromise and find a middle ground, embrace alternative points of view, help others, inform the reader, persuade me, produce authorial ethos, share, communicate, use logos, use pathos. The persuasion goal dominated the text itself, though, as she almost wholly focused on her claim and its supporting reasons.

Emily interpreted the situation as a chance to stand up for herself as an outsider. This resulted in a biased attempt to negotiate the assignment by supporting a claim that depicted her own state of being. She even admitted in interviews that a writer can mask bias with a sarcastic tone in order to “make it appear” they understand alternative points of view. At the same time, Emily’s identity and practice as a writer likely contributed to her strategy of “put[ting] yourself in your reader’s shoes and find[ing] ways to connect to them.” She explicitly stated in the first interview that writers should consider their

audience as lenses while writing; in this case, seeing herself there had the dual effect of inspiring reflection but nearly eliminating all but one perspective on the issue of romantic relationships.

Emily's first argument, the Brief, was her most biased. Her mention of counterarguments was cursory, and she gathered sources that supported her pre-existing claim. When asked how she selected outside material for inclusion, she says she "just kind of went through everything like a sift, um...finding things that backed up my claim, then finding the ones that were appropriate for my audience." Virtually no testing of the claim occurred, as it was her starting point, and she generated an argument that leaned heavily into it.

However, many of her goals were rhetorical in nature and she saw this issue as relevant and motivating. Importantly, Emily longed to connect with her readers, and she forged a connection through her colloquial diction and content. So, while she wrote in support of her pre-existing claim, she noted in interviews,

You kind of just have to step back from the essay and not be writing anything and just really think inward on yourself and kind of forget your own cares for a minute and just think about what makes this person who they are. And then adding the next level and saying, "Okay, what are my experiences that are similar to this person? And from those experiences, how do I connect myself to them in order to tailor this essay, um, to their needs?"

Early on in the course, she demonstrated a strong propensity toward audience awareness and adaptation. In the Brief, this was centered on the introductory and conclusion material and use of pathos over logos appeals. She clearly empathized with her audience and imagined conversations with them; however, her actual analysis of real readers was minimal, perhaps because of the shifting nature of her topic and complex and

changing imagined readership. The fact that she saw herself in that readership likely affected her insular approach, and perhaps her inattention to alternative viewpoints.

In the Opposition argument, the second argument written in the course, Emily saw the rhetorical context very differently. Explicit instructions to write in support of the polar opposite claim from her first argument resulted in her arguing the downsides of singlehood. In this case, she elected to write to her actual roommates, vastly narrowing and localizing her intended audience. In interviews, she noted that writing in support of this new claim “felt like a punch to the face,” but that she used two strategies to generate the argument: (1) real conversations with her roommates, who were all in romantic relationships, and (2) reading outside sources that countered her actual opinion on the matter.

Notably, even though Emily was opposed to the Opposition claim at first, these dialogical strategies led her to see the situation as highly authentic and the issue as more complex than she originally thought. She noted that her writing “became very real all of a sudden” because now she “had to sit down with these thoughts and emotions and pretend like I was talking to this very real audience.”

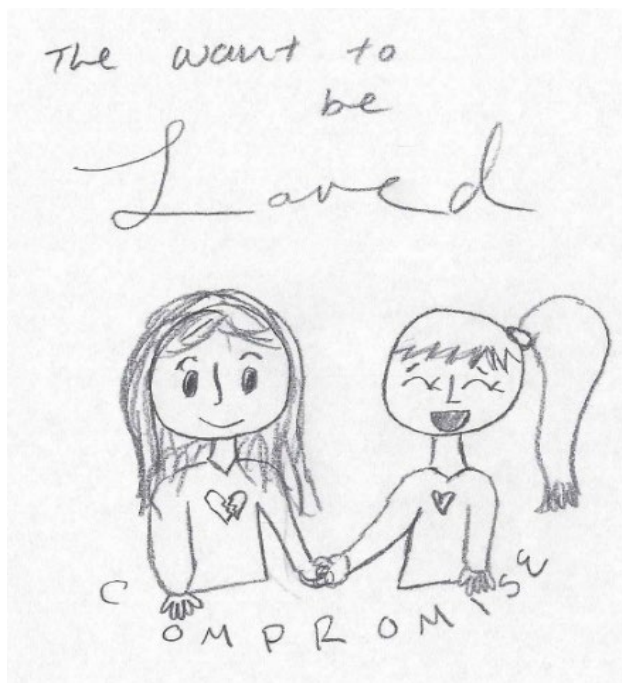
The reality of the writing context was so vivid, in fact, that Emily initiated real conversations with her roommates to help her negotiate both the paper and the problem she perceived within her living space: “As you all go through relationships with men who tell you you’re perfect, I’m forced to watch and wonder why no one has ever looked at me that way.” Her argument acknowledged the downsides to singlehood and proposed a compromise: that “every woman deserves to be empowered by her confidence,” so time

should be made in the apartment for romantic relationship and other kinds of talk because “women [should] support women.”

Emily interpreted this writing situation as highly authentic, with a known audience. Figure 10 clarifies a change in her reading of the rhetorical context between the Brief and Opposition: whereas the former pictured just herself and her justifications, the latter shows a broken-hearted Emily compromising with her whole-hearted reader (i.e., roommate in a relationship) in their shared desire to be loved for who they both are. She discussed adapting for content generation, structure, and source selection in her interviews as she empathized with her reader through real and imagined conversations and *imagined them while she wrote*.

Figure 10

Emily's Interpretation of the Rhetorical Situation in the Opposition Argument



Her written goals, however, were mixed—both consensus and persuasive—or to “vent and find a compromise.” Though her goals were mixed, in this second argument (unlike her first), her rhetorical goals trumped persuasion goals. She pulled those rhetorical skills forward from the Brief and added newly acquired ones: form a good argument, evaluate evidence, learn/understand/form opinion/define terms.

Crucially important in Emily’s progress was her ability to reflect on her own thinking and writing. Reflection does not necessarily translate into action, however; in fact, the first thing she wrote in the course was a definition of critical thinking, which she noted involved “gather[ing] all the data possible before jumping to a conclusion” and this was not at all her approach in the Brief. Yet she wrote in her notebook after writing the Brief that she was proud of her work because,

not only was it self-serving, but it gave me the opportunity to reflect on my own experiences as well as learn from others...I do wish I had included a counterargument, but that’s not any hindrance to how I think I did. *It’s vital to provide others’ viewpoint to acknowledge that they don’t have to be wrong in order for you to be right.*

Emily did in fact raise a counterargument in the Brief, but it was not taken seriously (and she even forgot this fact herself); this omission was corrected in the Opposition, which forced her to apply her insight about the importance of attending to alternate viewpoints. This kind of listening and connecting with others was nearly always a goal for Emily, even when she disagreed with them. When asked whether she thought about her reader while writing the Opposition, she responded:

Yes. Uh, like, literally with like, every sentence. And I was like, “Okay. *If I’m actually having this conversation with my roommate, what would it sound like?*” And my first draft actually came out really angry and I was kind of a little bitter about it. Um, but then while it was being peer reviewed I, I came back to it and I

read through it and I was like, “Oh, gosh. This sounds really mean and this isn’t actually how I want to connect with my audience. This isn’t what I actually would have said if it were a person.” *So, in order to understand what I would say in person I just went on ahead and went and had that conversation in person.* And then that helped me go back and, you know, incorporate some, you know, more nice things to say and, uh, helped me to understand their perspectives a lot better too. Because they actually were telling me how they felt.

Emily mentioned in her first interview that high school theater helped her nurture a habit of examining alternate opinions, with an exercise that required students to listen to someone else and then respond, “Yes, and...” to add to it rather than counter or debate. A lovely policy, though she acknowledged this was not always her approach. Note how she dealt with moments where saying “Yes, and...” was difficult.

Like, I just had so many angry emotions in the moment and so in writing it I was just like, “I want to show you that, like, it sucks being single and you should really, you should value your relationships. You shouldn’t just be toying around with these guys. You should understand that they have emotions.” And, you know, I was angry because I had seen a lot of girls act like this before ...But then later coming back to it, it was like, “That’s exactly what I’m doing in this essay to them.” You know, they’re girls, but it’s the same idea that you’re not valuing them as a person so you’re treating them differently.

Emily could listen to others’ opinions and strove to do so. More impressively, she could critique *herself* by decoupling from her own beliefs and emotions long enough to view her own thinking in a new light. She was open to listening to her peer reviewers, who helped her identify and repair tonal problems in her Rogerian-style Opposition argument. She described English 2010 as a “safe environment” in which to write, talk, and revise.

Finally, Emily reflected on how her argument schema had changed at the end of Unit 1. She critiqued her own approach in the first (Brief) argument by noting how her own mental model of argument was shifting from a focus on structural norms toward

rhetorical awareness:

It was just kind of general, like, evidence, evidence, evidence, evidence, evidence, evidence, counterclaim, wrap it up with a bow and then end out with a really, you know, banging last sentence. Um, and so I was really focused on, like, trying to make it sound good and, um...and I think that kind of overpowered trying to connect with the audience.

Emily's description here suggests a move away from a fact-based to a balanced schema. She noted that her first argument focused on form, on presenting evidence, and "sounding good" rather than on connecting with her reader. In the second argument, she described an increase in audience awareness and adaptation. Her dialogical outlook and practice, drive toward consensus and empathy, reflective tendencies, perception of the issue and context as highly authentic and relevant to herself, changing understanding of the argument genre, and self-efficacy as a writer ultimately contributed to a balanced Opposition argument. This argument supported a claim she originally opposed, yet when asked where she sat on the issue of singlehood at the end of Unit 1, she described herself as "somewhere in the middle." She pulled these skills and tendencies forward into the next unit.

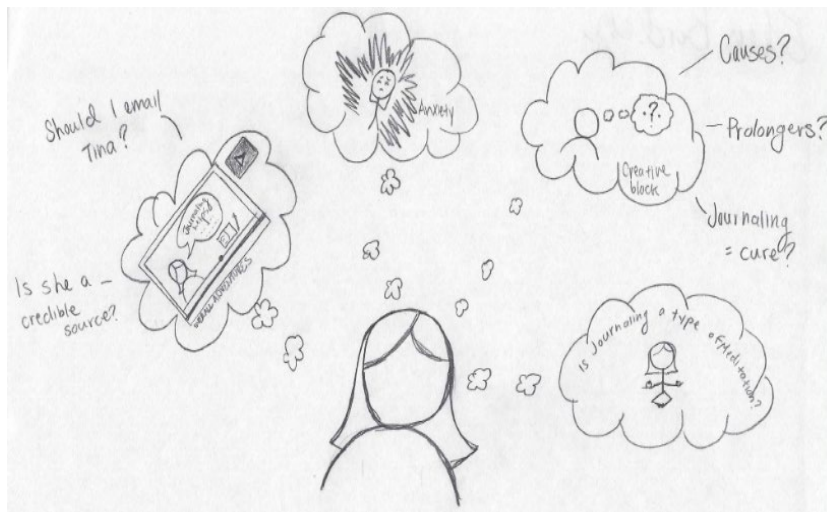
Unit Two

Unit 2 began by asking students to recall and apply what should have been a major takeaway from the Brief/Opposition experience: We produce more meaningful and ethical arguments when we begin with a question rather than a claim. Emily's research question was: Is journaling the cure to creative block? As a long-time journaler and creative writer herself, this question may seem less a question than a claim worded as a question, and Emily's biased testing score in Interview 3 (see Figure 8) validates this

suspicion. The first assignment in Unit 2, Stasis Theory, provided students a chance to articulate a meaningful question, venture into the world of information to test the waters, to clarify the sub-questions inside of the issue, and to refine and rethink the value of the project for the writer. Emily's original Stasis assignment draft included 13 factual questions, 4 definitional terms, 8 cause-effect and 6 evaluation questions, for which she gathered 4 sources to answer and define all of them.

Though she began with a dearly held hypothesis in mind, three important factors are important to understanding Emily's process in the course. First, she was drawing upon years of her own experience and background knowledge in selecting this question, in part as a clever strategy to take advantage of background knowledge gained through years of experience and practice. Second, she remained open throughout the process to new and even contradictory information, as the following discussion highlights, and welcomed new information and advice on direction provided from others. When critical opinions were absent or sub-par, she pursued the gathering and evaluating of alternative viewpoints on her own. Further, she began internalizing the course definition of ethos as authorial credibility built through demonstrating expertise and mitigating bias. And finally, Emily's final argument essentially argued for the value of *reflective writing* as a problem-solving activity. This was not a controversial issue, and it was well-supported by research as well as her own life experiences.

Emily's Graphic Organizer demonstrates her confidence in her claim, as all 10 of the sources she collected and evaluated supported the value of journaling as beneficial for mitigating creative block. Yet Figure 11 helps clarify that her goals for this argument

Figure 11*Emily's Interpretation of Her Progress in Unit Two*

were not persuasive. Having selected artists and writers experiencing creative block as her audience during this stage, it's evident that her goals instead involved learning more about the causes of the problem and viable solutions in order to help her readers, with which she empathized, to overcome the problem.

It's interesting to note that Emily's drawing here, meant to depict where she was in her research process, is an actual image of her reflecting. As the empirical literature clarifies, reflection, as a particular form of metacognition, is implicated in myside bias reduction. In describing the drawing, Emily remarked, "Okay, this is me thinking about my process." Thought bubbles are drawn from her mind, which envisions an anxiety-ridden member of her audience, a journaling YouTuber whose credibility she questions but whom she might contact for advice, a hazy and empty-headed person suffering with creative block, and a definitional metaphor for journaling: meditation.

At this crucial point in her research, Emily was focused on asking and answering questions. She asked, “For somebody to be considered an expert, what does that mean?” and then proceeded to demonstrate a more complex understanding of expertise than did many of her peers who relied on location, credentials, genre, or labels to determine source credibility. Further, she emailed a live human being, a teacher and YouTuber with three decades of journaling experience, when gathering information. Emily’s desire to thoroughly understand her research question led to her pursuit of information that was not easily accessible, demonstrating her motivation to learn and willingness to expend the effort to do so.

Emily’s peer reviewer provided sources that called her own into question, and when she found them to be sub-par, she went beyond to find her own. Rather than shooting alternative viewpoints down or ignoring them, she stated that she “loves all the evidence” and realized it helped her think about creative block in valuable ways. For example, she remarked in her reflective essay on the graphic organizer and peer review that her fondness for journaling,

...may make me a bit biased, which I intend to resolve so that my final essay is as credible as possible. Some of the counterarguments given are biased and give off the vibe of a Negative Nancy. Those I do not intend to include in my essay, not because I don’t want my words to be less credible, but because I think anger or pessimism is no way to spread information.... The evidence all touches a lot on the purpose of a creative block and how it’s maybe actually a good thing, which I like.... Journaling is a topic I’m eager to think more about and find out all I can.

These comments demonstrate her awareness of her own bias and intention to resolve it, her openness to the potential counterarguments to her claim, her drive to learn more, and her audience awareness in selecting the counterarguments that she would

eventually raise in the paper itself. Emily's comments and drawing demonstrate her engagement in an act of reflection (Flower, 1994) in which she identified problems and imagined alternatives. Acts of reflection are a key element of growth and change according to this study's theoretical framework; while not compulsory, reflection provides a means for writers to identify and negotiate myside bias.

In the Toulmin Analysis assignment, students were asked to analyze their hypothesized proposal arguments. Figure 12 shows Emily reading a book about how journaling both helps and hinders creativity. She placed herself closer to the side representing her claim and drew an arrow from herself to that part of the story; however, it is important to note that the book contains both stories. In interviews, she noted that counterarguments to her claim include the notion that journaling might stunt a creative process by producing overthinking. Emily then asserted that this counterargument

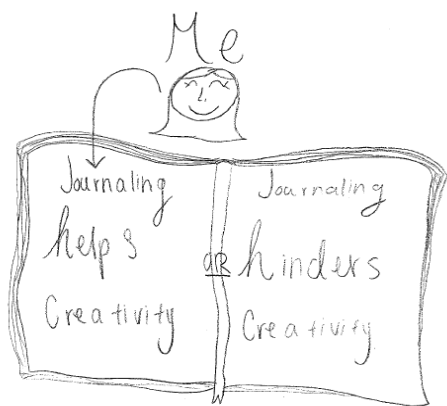
was a very small voice, but I still had to pay attention to it...I kind of put myself on the side of journaling helping creativity 'cause that's where my bias is right now...so I'm just still trying to figure out how to acknowledge that small voice...

Figure 12 also captures Emily wrestling with her own biases in evaluation and hypothesis testing in Interview 3, as her discussion of this drawing demonstrates.

Emily is seen here grappling with her biases head on. Her reflection on alternate voices enabled this kind of metacognitive decision-making. She not only listened to alternative voices, but she also planned to negotiate them by attending to and acknowledging them. At this point in the course, she just was not sure how—because several points of confusion remained for her by the end of Unit 2. Definitional problems abounded, including the delineation of boundaries for “journaling” and deciding what a “thesis”

Figure 12

Emily's Drawing of Her Own Bias Negotiation



exactly contained. Further, she struggled to locate information from sources she could trust as she highlighted the problem with information found on the Internet. Some voices were harder to listen to than others, and her conception of her audience was continually shifting.

Yet, Emily continued to utilize her long-term writing skills and showed signs of new learning. Though her audience was as yet somewhat hazy, it was not completely unclear nor absent from her mind. She mentioned that she determined source relevance through her reader's lens; this was made possible through imagined conversations with her family members and friends who used creative outlets to cope with mental illness. Additionally, she constructed a principled way for determining information credibility: She ranked her sources, then grouped acceptable evidence in order to find a trend that would serve as her claim and reasons. For Emily, the most credible sources were experts on the subject of writing, both those she knew personally and those whom she had read. Her understanding of the argument genre grew, as demonstrated by her solid grasp of

Toulmin terms and concepts. She continually employed qualifiers in revised versions of her claim. She worked hard to learn and was authentically interested in helping her readers because she empathized with their struggle.

Emily had many goals in Unit 2. She was motivated by the desire to help others respond to a problem she saw as authentic, to locate a middle ground among alternative viewpoints on how to do this, to find, filter, and evaluate information, and to form a good argument. She interpreted herself as someone who had enough expertise on the matter to be able to write from a place of knowledge and empathy. At this point, though, her audience was complex and somewhat unclear.

Unit Three

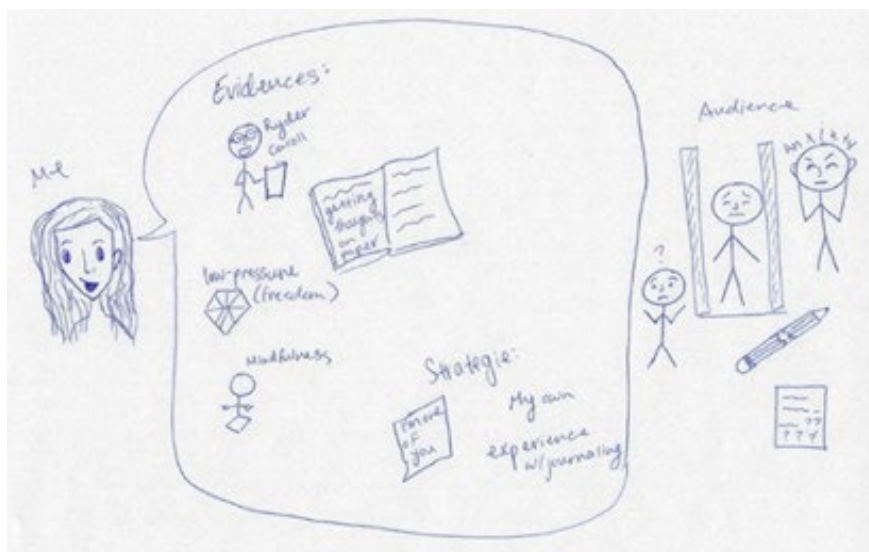
Major assignments in the final unit included outlining and drafting the final argument, the Proposal Argument from Inquiry (PAI). Students typically perceive both tasks as high-effort and taxing, as the majority of them have never written a paper of this length. Emily's goals in the final unit progressed from being more procedurally-focused (find/filter sources, keep it manageable, structure thoughts, get research into usable form) in the construction of her Outline, toward being more personal and rhetorically-minded (have fun, learn, respond to an authentic situation, be audience-aware, compromise, embrace alternate points of view, produce authorial ethos, communicate, use logos and pathos) in the PAI. In both cases, however, she always defined her purpose in the argument as consensus-building.

To prepare students to negotiate this workload, they received further explicit instruction in argument-counterargument techniques and were paired up in a dialogical

activity. This discussion was designed to help them identify the strengths and weaknesses of their arguments, settle on an appropriate audience, and as a type of role play, practice responding to likely questions and concerns a reader among their intended audience might have with their claims and evidence. Emily's conversation with a peer resulted in her decisions to narrow her readership to creative writers rather than all artists, and her topic to writer's block instead of creative block. As Figure 13 demonstrates, during her work on the Outline, her vision of her readership was one of a various and complex group. Some are experiencing anxiety, some are butted up against their creative walls, and some are just confused about how to move forward. Emily's plan was to tell them about her evidence in support of journaling, but she was also thinking about strategies for connecting with her readers. "I'm one of you," she tells them, as she plans to relate her own experiences as further evidence.

Figure 13

Emily's Interpretation of Her Audience and Message



Emily's drawing suggests that she was adapting content for her readers, but at this point, her conception of her readership was still somewhat complex. She empathized and imagined conversations with them while writing and used my class-wide suggestion to post a picture of the chosen audience in a visible place while writing. Emily selected the image of a crazy-haired writer in the throes of writer's block as a focusing tool. She wanted to be relatable and to cast herself as a valid member of the creative writing community she was addressing.

As Emily moved toward the final argument for the course, her focus on audience was pronounced. She adapted content and selected sources for her envisioned readers. She engaged in actual conversations with members of her audience and imagined conversations with them as she wrote. She saw their concerns and counterarguments as potentially legitimate and planned to concede where warranted.

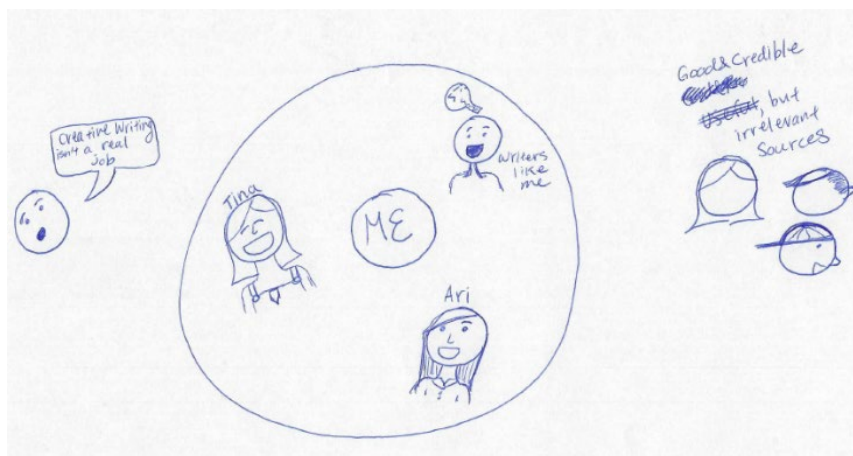
In Figure 14, Emily's final drawing in the course, she depicted the voices she listened to inside the circle with herself (her audience members, experts on her topic, and the study's interviewer), and those she excluded outside the circle (credible but irrelevant sources, and "haters," as she called them—or those who disparaged her creative writing career plan). All excluded elements were justifiable; not all sources can be included in an argument and the "haters" were not relevant to her argument. Most fascinating was her inclusion of the study's interviewer in her inner circle. When he asked her why she included him, Emily responded that it was because

remembering things that we've mentioned and being like, oh, okay. So, maybe my audience should look more like this. Or maybe I should include these kinds of sources. And obviously it affected, like, my research process because I was like, okay. These are kind of like the thoughts that we've gone through so maybe I

should be thinking about these sources in this light too because maybe that's a new idea I need to test out. And so, just really like, playing around with some of the ideas that we've been talking about helped a lot...it connects a lot to like, what journaling is, coincidentally. Because it just kind of is that idea of talking out, talking to yourself and...it feels like you're talking to someone else, so you don't feel crazy. You know? Like you're, you're just talking to yourself, um, and by bouncing ideas off someone you can be like, "Oh, breakthrough...I understand why I'm going through this pattern of thinking and how I can break that and readjust and make it make more sense.

Figure 14

Emily's Voices Included and Discarded



Emily's penchant for dialogical reflection, as evident in her remarks above, was a critical part of her myside bias reduction in the course. In her final survey, she demonstrated that she, herself, understood this: "I was part of the study & became highly aware of my strategies." Her audience analysis heuristic, completed after the Outline and before drafting, was immaculately detailed. She articulated her goals and strategies and made connections between her analyses of readers and the strategies she would need to utilize based on those analyses. The clearer her vision became of her readers, the better she became at adapting her writing to them.

These factors suggest growth in Emily's acquisition of argument genre norms. She described how her old formal way of writing arguments, which her past teacher called using an "aesthetic distance, um, which is just kind of like the idea that like you're personally distant from these people, and so it changes the way that you see them," became very different in English 2010. By its end, she saw arguments as authentic opportunities for dialogical exchange and understanding, where things just feel "two-sided, not just one-sided." Her two-sidedness was evident in her final argument, the highest-scoring of any participant. She included eight outside sources of various types including eBooks, mental health websites, a peer-reviewed journal article, blogs, and YouTube videos. She raised two relevant counterarguments and utilized a concession/rebuttal strategy to mitigate them in support of her claim. In all, her argument conceded to alternative points of view four times. By the end of the course, she remarked, "I love writing essays because it strengthens the way I look at the world and speak to people."

Conclusions

Emily's writerly identity, her interpretation of herself as a strong writer, set her up for success in the course from its start. This seemed so for several reasons. Her established writing practice, through journaling and her major, provided her with experience to negotiate the tasks with an understanding and expertise many of her peers did not seem to share. This background also seemed to prime her for reflection and likely prompted more metacognition. Furthermore, Emily increasingly saw her readers as an important part of the writing equation and her desire to connect with them enabled her

growing empathic stance and willingness to compromise. She viewed her teacher and peers as mentors and was consistently open to receiving feedback. Her pursuit of answers to meaningful questions with which she already had a considerable knowledge base, and her commitment to her own personal growth, seemed to sustain her throughout taxing tasks, such as data gathering and evaluation. Her changing interpretation of the purposes and practices of the argument genre—from persuasive to consensus, formulaic to audience-based—and her growing epistemological understanding of source credibility as a spectrum-based issue rather than an either/or proposition, all contributed to arguments which became increasingly balanced. Emily's rhetorical awareness became increasingly evident in her arguments over time. Her implementation of principled reasoning strategies, such as information ranking and trend-finding, likely helped her shift from her initial fact-spewing, opinion-supporting approach to a more mature treatment of the subject of her inquiry. Perhaps most importantly, her ability and propensity toward both dialogical communication and reflection on her own biases and strategies seemed to contribute to her ability to listen rhetorically to voices she may have found distasteful. All these things, over time, resulted in a very large reduction in myside bias.

Kevin: The Scientific Learner

Well I'm like a...I'm a big...I like science. And so, I'd probably take it as kind of like a little experiment. I'd reform my hypothesis. I'd start going through the process again. But I'd take in all factors. If someone did something to go against my claim, I would research more into their claim. And if need be, change mine or apply it and kind of have a stronger plan for it...I actually really enjoy when people disagree with me or when people are better than me. Because it helps challenge me to become better. I like when people can, can open my, my, my point of view and I can kind of look at it as something else.

Kevin was a learner at heart. His words here were a teacher's dream—so dreamy, in fact, that I initially wondered whether he was performing some kind of “A+ student” role in interviews. He was not—Kevin worked harder than most students I have ever encountered—and he did it for the joy of it. Stunningly, he used the word “fun” to describe reading, writing, talking with others, reviewing peers' writing, and completing assignments 69 times over the course of five interviews. It was not a verbal crutch—he rarely used it to describe anything other than academic tasks (though dating, the subject he investigated all semester, earned five usages). In interviews, his own written work, and surveys, he was the portrait of a highly motivated learner. He communicated repeatedly that he enjoyed what he could use to strengthen his own abilities or develop new ones.

Kevin's natural curiosity, motivation, and passion for inquiry led to an interest in research. He worked in a research lab on campus and, as a biology major, saw himself as a scientist. As his opening quote demonstrates, he was a fan of the scientific method and regularly applied it throughout his projects in the course right from the start. In the initial course survey, he noted he was “excited to learn how to write on research to help me in my science courses & in my lab research.” Kevin's writing at the outset of the course was a bit stilted. He struggled throughout with minor grammar and usage issues but saw value in English 2010 because of its *research writing* focus. Where other participants began the course either lukewarm about or respectful of research writing, Kevin was the only one to say he *enjoyed* research writing and especially liked “creating large layouts for all the information before writing.”

Like Emily, and somewhat surprisingly, he also tackled the issue of romantic

relationships in his Brief/Opposition arguments; however, he approached it from the vantage point of a young man feeling pressured toward marriage. Raised in Minnesota, he discussed how he used to be a shy and timid introvert. Upon moving to Utah, he saw an opportunity to *recreate his identity*.

I decided, well, this is my chance to change everything. And I was thinking, “Well, what do the cool kids have? Like, they have women...they go to parties and everything.” And it’s like, “Well, maybe I’ll be like them.” So I started dating a lot from there. In the start, it definitely was, like, that was a kind of status thing...the Mormon feel. Like, you gotta get married fast.

Kevin was actively open-minded in his approach to learning about the subjects he selected. Like Emily, Kevin was highly dialogical. He sought out conversations with friends, teachers, peers, and others in an effort to see things more clearly. Further, he gathered information far and wide and went far beyond assignment requirements in doing so. A final skill he entered the course with was strong self-regulation, which amplified the value of his many other learning characteristics. He took 17 credits during the study semester and maintained a 4.0 while also working in the research lab.

Myside Bias Shifting

Multiple data points indicate that Kevin’s myside bias reduced significantly over the semester. Table 12 demonstrates that his overall reduction in myside bias was the second highest in the course, after Emily. His fact-based score was slightly higher than hers at the course outset, though it did not drop as significantly, while his balanced score increase was nearly equaled hers. Kevin initially expressed a preference for facts and a distaste for emotion when it came to evidence. “I like numbers,” he noted, “I kind of like to look for the things that are more, like, ‘these are facts.’” He equated passion with

falsehood: “When I read something and it’s kind of written with facts and documents and dates, I start to think, ‘This is probably true.’”

Table 12

Kevin’s Pre/Post Argument Schema

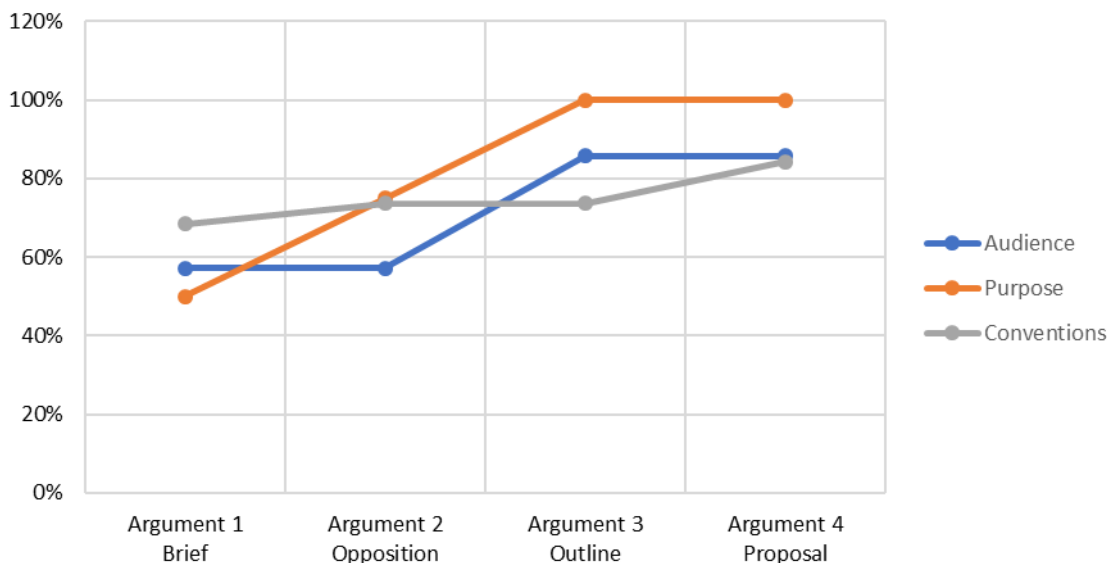
Test	Fact-based score	Balanced score	Definitions
Pretest	5.8	5.2	“Credible information, taking in counter-claims, looking at all aspects.”
Posttest	4.9	6.6	“Depends on the audience. If not biased against, you can state your thesis in the intro & provide your reasons & continue on, if the audience is against you’ll need to take a Rogerian approach finishing w/ your thesis possible at the end.”
Shifting	-0.9	+1.4	

Over time, Kevin developed greater rhetorical awareness and learned to value multiple evidence types. Where Emily leaned into narrative, Kevin was drawn to numbers and “facts.” When they worked together reviewing one another’s work (as they often did), they were a fantastic match for identifying these shortcomings and growing together (which was always a goal they shared).

A notable shift away from myside bias and toward rhetorical awareness is indicated in Kevin’s written arguments over the semester. Figure 15 demonstrates how Kevin’s purpose and audience analysis/adaptation moved together; consensus goals came with higher audience scores, and his goals became progressively more consensus-oriented after the Brief. Yet, compared to Emily, Kevin’s gains in the conventions criterion were far less dramatic. This is supported by his initial survey, which demonstrated a stronger understanding of the features of the genre than did Emily’s. It

Figure 15

Kevin's Shifting Use of Audience, Purpose, and Conventions Over Time



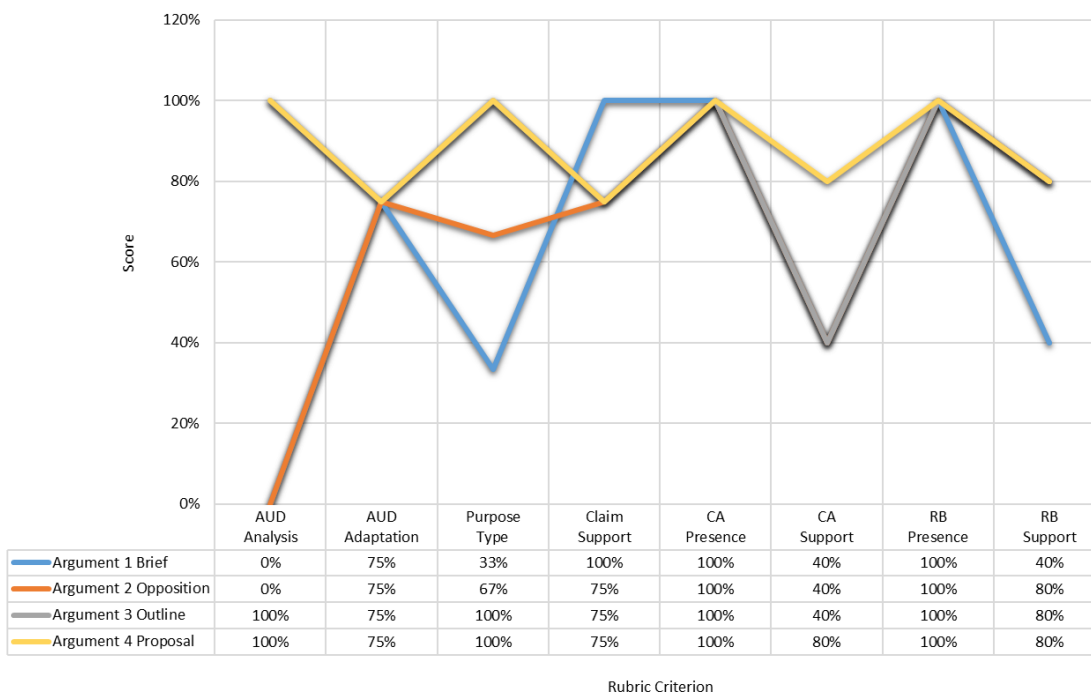
also accounts for his earning the highest initial score among participants in the Brief argument, in which he thoroughly discussed a counterargument.

Figure 16 raises an important qualitative difference between the growth experienced by Kevin and Emily in reducing their bias in written arguments: while Emily's conventions scores nearly doubled over the semester, Kevin's remained more static because they were higher to begin with. For Kevin, the growth instead occurred in his increased audience analysis and adaptation. This increase in rhetorical awareness was accompanied by a move away from persuasion goals toward mixed or consensus goals.

This trend can also be seen in Kevin's interviews. Figure 17 demonstrates that his biased to balanced ratio consistently remained under the zero mark, indicating that his expressed statements, beliefs, and behaviors remained consistently balanced over time.

Figure 17

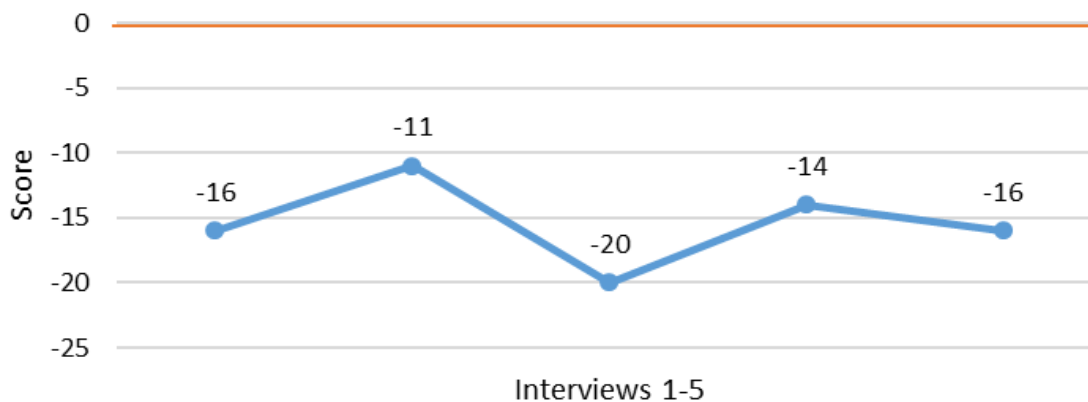
Kevin's Myside Bias Shifting and Rhetorical Awareness



Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student's attention to alternate perspectives.

Figure 16

Kevin's Biased/Balanced Interview Comments



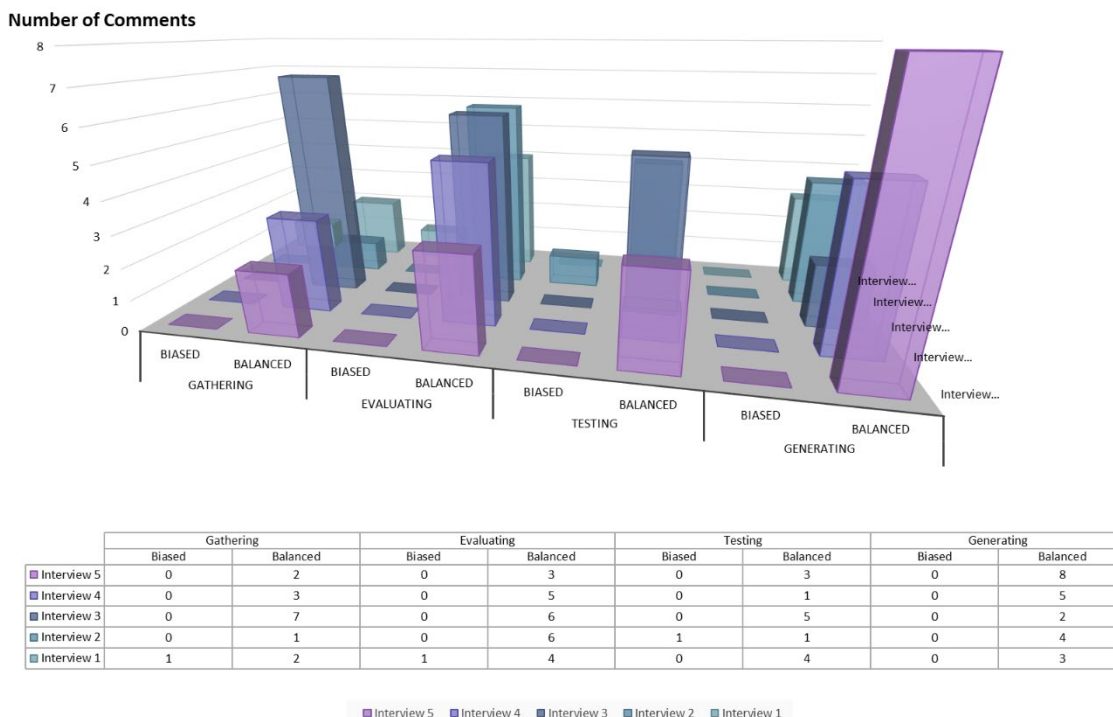
Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus, lower scores demonstrate lower bias. A score of 0 denotes an equal number of each comment type was made.

This makes sense: Kevin demonstrated both an understanding of the importance of reviewing information widely and including alternative perspectives in arguments. His interviews became least biased and most balanced during Interview 3, which discussed the three course assignments most invested in information gathering and evaluating.

Figure 18 demonstrates an interesting contrast between Kevin’s myside bias and Emily’s. His biased coding remained consistently low throughout the course, growing even lower over time in gathering and evaluating categories. For Kevin, gathering and evaluating appear to have always been strengths—more than any other participant. He

Figure 18

Kevin’s Myside Bias Through Interviews



Note. This chart depicts how a participant’s myside bias shifted over time by comparing biased to balanced comments during interviews. The number of comments is represented separately for each of the four ways myside bias was operationalized in the study: gathering, evaluating, testing, and generating. The chart should be read from back to front for chronological progression over the semester.

remained the most consistently balanced evaluator in the study. His testing was a relatively consistent strength in comparison to other participants; however, it was equally biased/balanced in the Opposition argument. Kevin NEVER received a biased generating code while his balanced generating codes were frequently applied across time. Most noticeable is the proportion of balanced codes overall in comparison to Emily's; again, especially in Unit 2 and particularly in evaluating and to a lesser extent, hypothesis testing. His growth in balanced generating was enormous and culminated in his most balanced argument of the semester, like Emily.

What, then, was the cause of his large reduction in myside bias? Kevin's surveys and written arguments suggest such a decrease, while his interview coding displayed shifting throughout the course but generally remained more balanced than biased. The following discussion utilizes the study's theoretical framework to describe how Kevin navigated writing arguments in the course in order to highlight factors most likely at play.

Unit One

More than any other participant, Kevin demonstrated a solid understanding of the genre norms of written argument right from the start. In his first (Brief) argument, he included two outside sources to support the claim that "the key to a successful marriage depends on how many people one has dated before settling down, how long a couple dates, and experiences in previous relationships" and dedicated a paragraph to addressing a counterargument. All data points indicate that evaluating was a major strength for him throughout the course; he was a habitual questioner, searching for loopholes in his thinking, and actively sought out new evidence. He noted that dating helped him

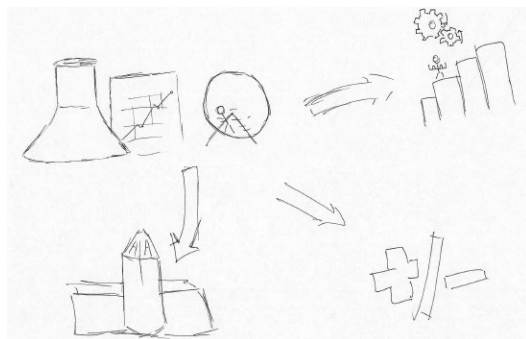
determine what he was “faulting or lacking, and what [I] want in someone else.” In other words, Kevin even viewed his social life as an ongoing experiment in self-improvement.

Like Emily, he spoke with others as a thinking strategy. Kevin’s revised argument was the result of talking with a friend who planned to marry the only person he’d ever dated. Also, like Emily, he changed his topic in the course of a week. He originally planned to argue the benefits of research studies “kind of like this one.” Recall that dialogue was discussed in Chapter II as an important myside bias mitigation factor; a similarity between Emily and Kevin was their self-initiated pursuit of conversation with others in order to expand their perspectives. On the “gathering” component of myside bias, both students used oral dialogues with others to better understand the subjects they wrote about, in addition to their text-based research. Though Kevin did use his introduction and conclusion paragraphs of his Brief to speak directly to his audience—college students in Utah—the body was more scholarly in tone.

Figure 19 is his drawing on the prompt, “Describe the communication situation you face in the Brief argument.” Instead, Kevin’s drawing captures his outlining of the

Figure 19

Kevin’s Brainstorm for His Brief Topic



argument; no audience-related elements are present. In fact, when asked to discuss his drawing, Kevin did not seem to grasp what a “communication situation” actually indicated, responding:

Kevin: Okay, so, how the drawing communicated my essay, or . . .? .?

Interviewer: Um, so the drawing was about the communication situation in your Brief essay. So, about, like, how you’re going to talk to your audience and engage them...

Kevin: Okay. I was drawing a little bit on actual research studies kind of like this...

The drawing represents Kevin’s thoughts on how research leads to strengthening the process of thinking and improving, though science. Importantly, the plus/minus sign indicates his desire to talk about the pros and cons of research, further backing his open-minded attitude toward all subjects—even those he felt passionately about, such as research.

Kevin’s goals in the Brief were many, but “persuasion” was his stated goal. He interpreted the assignment as a chance to demonstrate his argument-writing skills, but also, to speak out about the strain of the cultural pressure he felt to marry quickly. His interviews uncovered many other personal and rhetorical goals: to learn, to form a good argument, to evaluate evidence. While he did adapt some content for his readers, it seems the persuasion goal, as well as the engrained schema of the five-paragraph essay, made attending to the claim his primary task—and one he completed well.

This shifted somewhat in Kevin’s second drawing on the second argument, the Opposition. Figure 20 shows Kevin took the same approach as he did in his first drawing, essentially recounting his argument’s claim and reasons. But Kevin mentioned in this

second interview that this drawing occurred “before I had this conversation with my sister,” who became the audience for his Opposition. Kevin struggled to generate support for the claim that successful marriage is not dependent on one’s dating history and is instead likely through “love at first sight,” as any logical person would. He reasoned that Disney films portray this kind of love as the height of romantic love (thus the castle

Figure 20

Kevin’s Drawing of the Opposition Rhetorical Situation

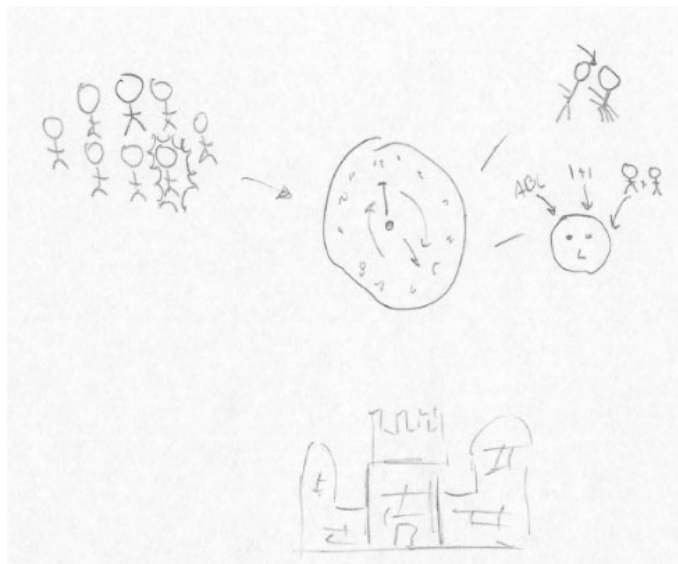


image), and that over time, people who marry young can work through their problems and create a shared history. To come to these reasons, he asked questions, as was his habit:

I just did a lot of, like, what about the people that marry the first person they date from, like high school. And they go through for six, seven years and they’re married. And it’s like, what is that they have? What, what is the difference between them and someone that dates a lot? So, I kind of like, looked at these “What would happen? What do they do? Why are they like this?” And that kind of helped me to be able to write about all that.

It was talking with his sister that helped him find an inroad he could trust to this alternate perspective: her academic performance was suffering from her crammed social calendar. His Opposition argument appealed to his sister's desire to achieve and suggested she prioritize her behavior accordingly, and instead of treating dating like a research project, she should wait for her "own 'Prince Charming' and achieve a 'happily ever after.'"

Kevin's goals in the Opposition moved away from solely persuasive to mixed persuasive and consensus. In interviews, his stated goals became more rhetorically aware (to be audience aware, to compromise, to encourage others, to use rhetorical appeals) and he also expressed the desire to have fun, learn, formulate his opinion, and get it done because it was so challenging. Regarding the Rogerian style of writing, he commented:

Kevin: It was actually really interesting. I kind of liked it. It was really difficult and made me have to critically think a lot. Which was what I liked about it.

Interviewer: What do you mean critically, critically think?

Kevin: 'Cause I had to think about literally everything that I wrote. I had to make it perfect in a way that I didn't offend someone. I didn't, kind of, offend myself. I didn't say something I didn't believe in. It was just a very, taking every detail, every sentence, and like, taking it from a farther perspective and then putting it in. It was very, very difficult but good. Um, I like the challenge. So, it was definitely more enjoyable. Because it was definitely a whole new way to write. Which is what I kind of liked. I liked having the whole new knowledge of having a whole new way to write an argumentative essay.

His joy in learning is evident. Further, his strengthened attention to his reader became clear in his discussion of rhetorical goals, including embracing alternative points of view, compromising, producing authorial ethos, and utilizing logos and pathos. These

goals did appear in his Opposition argument through increased adaptation. More importantly, his coding for audience awareness increased in this interview, where empathy with his reader and counterarguments viewed as potentially legitimate increased dramatically.

One interesting consequence of shifting towards a well-known audience was Kevin's use of the letter genre in his Opposition, replete with "Dear M_____" and "Love, Kevin" as salutation and signature elements. This move toward a more familiar and personal genre format signaled a sense of greater intimacy and was accompanied by more codes regarding Kevin's role as a writer. Increased audience and writer's role awareness were likely linked to his increase in empathy, imagined and real conversations with readers, decreased claim support, and increased counterargument support. Given the difficulty involved in supporting this claim, Kevin created an authentic context to facilitate the writing. Additionally, his reflection codes skyrocketed in this interview, to include more problem detection and elaboration, causal attribution, and alternatives.

It is notable that both Emily and Kevin began the course planning to argue claims crucial to their vocational identities—the benefits of their chosen fields of interest—then switched to topics that resisted the same cultural pressure they felt to conform to social norms regarding romantic relationships. Additionally, they both found a way to consider oppositional claims through dialogue with others, asking questions, and empathizing with narrowed audiences they knew well. At the end of Unit 1, Kevin's fact-based, five-paragraph-essay schema shifted toward one in which he was willing to play, empathize, and ease off of numbers and facts toward narrative, context, and audience-based rhetoric.

Unit Two

Kevin was the only participant to continue in the final two units of the course on the same topic as the first: dating. Writing about something he was interested in was “fun” likely provided sustained motivation. His primary goals were personal—to learn, form a good argument, share the information with others who would find it useful, and have fun—and he struggled very little with bias; he was the outlier high in balanced gathering during this period. His balanced evaluation and testing remained very high and followed a similar pattern to Tanner’s (discussed below). Continuing his research on this subject also enabled him to pull from former background information from both the course and his life experiences, and to focus on building further background information in a subject area he found riveting and immediately useful.

Unit 2 heavily involved research-based assignments—and this is where Kevin was thoroughly in his element. He negotiated the unit in the way I hoped students would: he began with a question, learned as much as he could about it, considered many different sources and perspectives, hypothesized a claim built from that work, and analyzed and refined the claim through principled rules established for himself regarding evidence inclusion/exclusion. He began the Stasis assignment with the question, “What is the best first date?” He then lists an astounding 37 facts, far more than any of his peers, further demonstrating his desire to learn as much as he could on the topic. His Stasis resulted in the identification of four evaluative factors that play into the “best first date.”

In his Graphic Organizer, Kevin located the required ten sources and thoroughly read and understood them, as is evident in his summaries and interview discussions. He

was disappointed in the peer review provided for him, because the sources were not up to his standards for credibility. In classic Kevin form, he then pursued more information that met his bar for reliability.

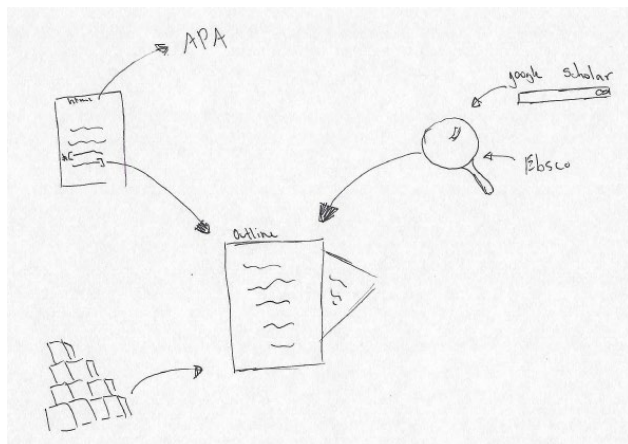
Interviewer: Okay. So, it sounds to me like you even went a step further. So, um, your peer gave you the sources that contradicted your opinion. And then you even went out and checked those sources to see if there was some validity outside of it. That's more, that's more steps than most students would take, I would imagine.

Kevin: Maybe. I just find it really interesting so I was, I really wanted to find something that could be a counter to an argument. Because every little topic is kind of fun because this is kind of how I apply it to my life and I want to know how I can have the best first date. So, I wanted to find counterarguments as well because that's, those are other factors that can help me out. Um, I think I was actually more, like, counter, countering than my peer was. My peer usually kind of just repeated all the questions that I wrote. And so, um, I'm still working through it all.

Kevin's drawing of his research process in Figure 21 depicts him "working through it all." He described the sources he encountered as building blocks, a metaphor similarly used by Tanner (see below), who used similar evidence evaluation strategies.

Figure 21

Kevin's Depiction of His Progress in Unit Two



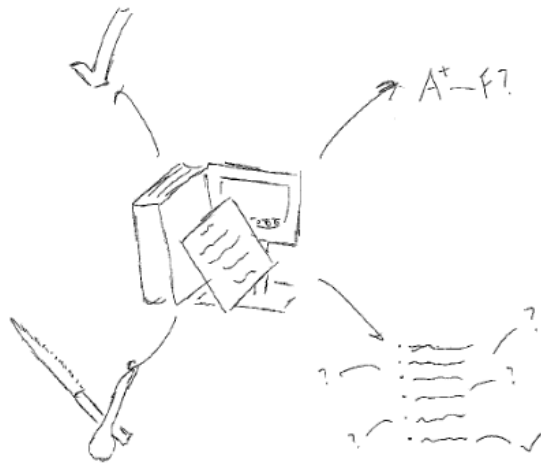
He was thinking ahead about source citation, as well as how he would eventually structure this argument. Most notable was Kevin's inclusion of a magnifying glass as a critical step between pulling sources (which were solely scholarly) and using them in his upcoming outline. The magnifying glass represents how "I can just, uh, look at the sources well. Kind of find all the information I can out of it. Look it over in detail."

This points to an important finding in Kevin's case. Though he communicated and displayed a heavy reliance upon what he terms "facts," which might suggest the problematic fact-based-schema, both the *purposes* behind his drive for facts and the *behavior* once the facts were in hand distinguished him from other participants who similarly discussed the importance of facts. Kevin's motivation in this project was primarily to learn about the subject, which he saw as highly relevant to his life, and which spurred him towards attentive reading and learning. Additionally, Kevin utilized many principled strategies for weighing evidence. For example, Kevin: (a) gathered primarily scholarly evidence types (such as literature reviews and surveys) that helped him identify evidence trends; (b) used the evidence itself to formulate his opinion; (c) remained open to evidence for a sustained period of time during which he was open to opinion alteration; (d) worked harder than the minimum assignment requirements to ensure a full understanding of the question and its related evidence; and (e) synthesized for trends across information to produce a claim instead of relying upon isolated cases.

Kevin's depiction of how he negotiated his biases (see Figure 22) shows his "dissection" (the scalpel) of each piece of evidence and evaluation of them (the grades). He stated that his desire to learn about the subject prevented him having "a huge issue

Figure 22

Kevin's Drawing of His Own Bias Negotiation



with bias.” This seems the picture of scientific learning, and though these strategies resulted in his post-Graphic Organizer reflection that he was beginning to note “correlating factors” that suggested a certain claim, he still had many remaining questions and much research left to complete. As the course moved toward the Toulmin assignment, where audience awareness tasks began raising flags about the relevance of information for a chosen reader, Kaden mentioned his need to think about whether the context of this data would match his intended audience, given the fact that cultural norms within Utah were likely unique.

This leads to an important issue in Kevin’s case post-Graphic Organizer: there was a glaring bias problem with his hypothesized thesis. He assumed a gender/sexuality dichotomy in dating and essentially argued that males and females operated in certain ways, forwarding an “if/then” strategy for creating “the best first date” based on one’s gender and assumed heterosexuality. Whether this was the result of his own cultural

script about dating, an evidence skew in empirical studies of dating, or some combination of the two, is unknown. Yet it took consideration of my feedback on his Toulmin assignment for Kevin to recognize this flaw (as the missing warrants were not pointed out by his peer, either):

Interviewer: Your instructor noted that there were several warrants you did not initially identify in your argument, which assumes that (a) dates only occur between people of different genders, (b) all people of a particular gender find the same key traits and actions attractive, and (c) people can control their actions and personalities while on first dates. How do you plan to deal with these warrants in the final paper?

Kevin: Um, I definitely, I'm just going to research them more. I'm gonna find information that I could use or information that backs or an argument against it or whatever I can use. Cause every warrant that there is I kind of enjoy it. I kind of enjoy every little opening that I can find and every opening I can fill.

Further research was exactly what Kevin did. Rather than seeing these warrants as devastating to his argument, he revised his Toulmin assignment to include the three missing warrants. In each case, he realized he could not back them and would need to somehow account for them in his final argument.

He accomplished this by turning to his audience. I offer to help all students analyze their audiences; Kevin was the only one to take me up on this offer and undertook a survey of students in our English 2010 course to better understand his audience. He asked them about their dating preferences, habits, and definitions of a “good” first date. Interview coding for Kevin’s reflection practices skyrocketed in the third interview, where his problem detection and elaboration, alternative imagination, and evaluation of strategies became far more pronounced than in previous or subsequent

interviews. His evaluation comments were an outlier high in Unit 2, indicating he actively considered alternate strategies and analyzed which of them would be most useful. All of this required considerable extra effort, which Kevin consistently described as “fun.” Earlier than many of his peers, as we moved into the final unit, Kevin began to think about how to adapt his research for his readers.

Unit Three

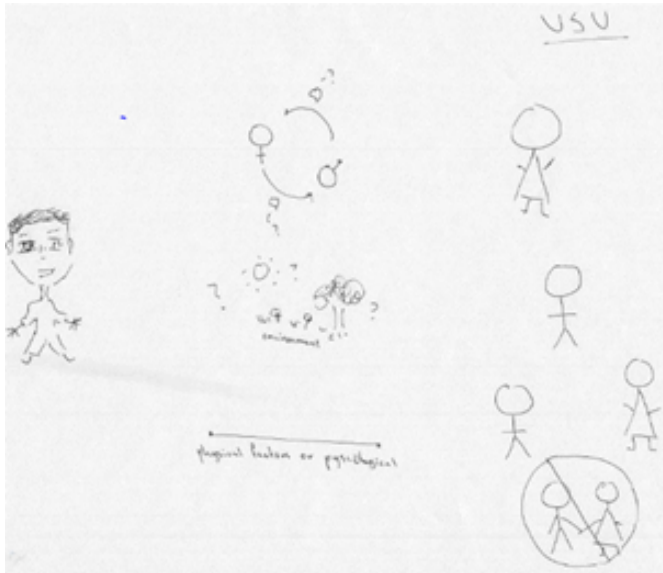
Kevin’s Outline, the third argument, showed further progress in myside bias mitigation, though it highlighted how incremental his progress was throughout the semester as he took the research and thesis formulation processes so seriously. As he moved toward a greater understanding of his readers, he became more empathetic and eventually revised his final argument substantially. This process did not happen magically; rather, it was the result of hard work, talking with others, strategy reflection and deployment, revision, and multiple drafts.

Kevin was aware of the fact that he would be speaking to specific readers. Yet, as Figure 23 demonstrates, he was still focused on his thesis. His audience, on the right, was labeled simply “USU.” The center of the piece represented “the factors females find attractive in males, males found attractive in females...the environmental factors that play into a date...and whether people find physical factors more attractive or psychological factors, like personality.”

The level of detail Kevin used to represent himself stands in notable contrast with his audience. He expresses the desire to be audience aware and began to develop rhetorical goals. He adapted his Outline to his readers to the extent that the requisite

Figure 23

Kevin's Conception of His Audience and Message



content is there: a claim, three supporting reasons, three counterarguments and their rebuttals. He asserted in interviews that “argument doesn’t have to be a battle,” that alternate points of view do not have to compete, and that concession is a useful strategy. But at this point, he did not yet have a strong grasp of who his readers actually were and seemed to be operating on the assumption that they were like himself and those within his social circles.

Skills Kevin had utilized all semester remained with him throughout drafting, peer review, and revision of his Outline. His balanced evaluation coding was an outlier high, as was his balanced generation coding. His preference for dialogical exchange increased during Outline construction. He spent much time and effort interpreting his peers’ feedback during this phase, perhaps because they composed a portion of his audience, which at this point consisted of college students throughout the entire state of Utah.

Additionally, Kevin actively sought out help from multiple sources, including myself and the course librarian.

He was still struggling to settle on a thesis at this point, as he was attending to such a wide array of information. His audience was large and complex. He sought my help, and I suggested he turn to his audience to define the scope of his claim and reasons. This eventually resulted in his decision to narrow from all Utah-based college students to USU college students. He found our exchange useful and almost seemed to be asking my permission to exclude some of the information he'd located, telling the interviewer that consulting me and the librarian was a useful strategy when he "got stuck."

This raises a critically important finding of the study: regardless of an individual learner's aptitude, constructing an argument based in evidence is an incredibly complex task. Kevin was a highly motivated, incredibly hard-working, and bright student; yet, like every other participant, he found filtering information out extremely difficult, despite any curricular support designed to overcome that obstacle. This observation calls into question some former studies of myside bias which utilized contrived and timed tasks to assess the phenomenon, as these studies might be tapping cognitive efficiency or some other skill rather than myside bias due to the nature of their designs.

This observation aside, Kevin's goals at this point still included the formation of a good argument through evidence evaluation, learning, and having fun. He was struggling at this point to get his research into usable form, to filter out information, and to direct his writing to his selected audience.

At this point, Emily and Kevin engaged in a dialogical activity where they were

prompted to ask critical questions of one another related to proposal arguments. Though Kevin had already decided to narrow down to USU students, Emily's questions helped him see that further analysis of his audience was going to be critical, as they were still a various group of individuals who likely defined the central issue of a "good first date" differently:

Emily: What exception to this proposal should be made?

Kevin: Exceptions. I was... I have no idea (laughing).

Emily: Like maybe, what people are going to find your evidence wrong? People that are going to say, "Well, that's not how I date." Or you know, "That's not the successful first date that I'm looking for." Because maybe the definition of a successful first date needs to be defined. Is it, will you get laid, is it, that...?

Kevin: Yeah you know what, yeah.

Emily: Is it that you, meet each other's parents, is that you're going to get married in the temple? Is it that, you um... see your whole future laid before your eyes with this person, that you imagine wheeling them around as an old person in a wheelchair? What is a successful date? So, what're the exceptions to what you're saying. What you're saying is that a successful date is this, then maybe that doesn't apply to a certain group of people.

Kevin: Interesting. That's true. That is very true.

Emily: You also have to look at like, 'cause everyone's goals are different.

Kevin: For sure. So, it'll definitely depend on the person as well.

This conversation seemed to provide a turning point for Kevin's rhetorical awareness. In talking with peers, he "realized they weren't really interested in the facts. They wanted to kind of hear the fun stories and like, things they could relate to."

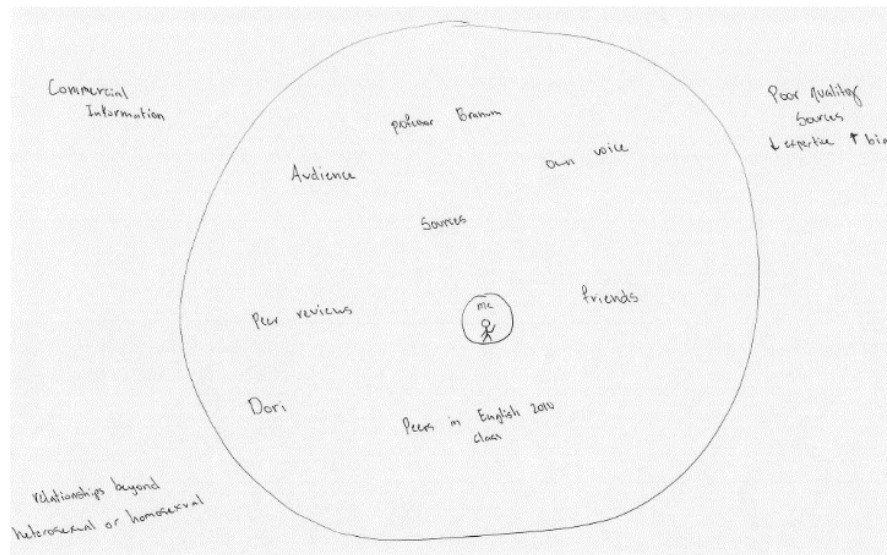
Kevin's final argument, the Proposal Argument from Inquiry (PAI), demonstrated two major shifts from his Outline: a tone that was newly audience-aware and increased

support for counterarguments. He noted that concessions were critical and that he could not “just throw facts” at his readers. In the argument itself, he addressed the fact that not all his readers might relate, particularly those who might identify as non-binary or LGBTQI. He noted this far earlier in the final argument than he did in his Outline, and he conceded that these were weaknesses in his claim while still reasoning with evidence that many of its precepts could transfer to other relationship contexts. In interviews, he asserted (accurately) that his audience was primarily straight, member of The Church of Jesus Christ, and politically conservative—and justified the proportion of text spent relying upon this analysis to his audience demographics. This was a reasonable step to take, but his argument at times attempts to gloss over critical differences. For example, he asserted, “Even though this paper focuses mainly on heterosexual relationships, the principles shown can be applied to homosexual relationships as well to create a successful first date” directly after citing a study that highlights critical differences between gay and straight women.

Despite this clumsy moment, Kevin clearly worked hard in the course to attend to alternative viewpoints. Figure 24 shows the wide variety of voices he felt he especially listened to during the course, including his teacher, peers, reviewers, friends, the course librarian, his sources, himself, and his audience. He excluded poor quality sources, which he defined as low expertise/high bias information, sources that stand to gain monetarily, and those involved in “relationships beyond heterosexual or homosexual,” indicating he now acknowledged a far wider spectrum of human sexual relationships. The sense during Interview 4, when questioned about negotiating the sexuality issue in his argument, was

Figure 24

Kevin's Voices Included and Discarded



that it was simply beyond Kevin's cultural script:

That is actually a counterargument that I have. And it's actually something that I found a lot of sources on. And it's definitely going to be in my paper because it's definitely a huge counterargument that is applied in my paper. And my teacher kind of showed that to me. She was, cause when I talked to her, she's like, "The biggest problem you have in your paper is this." And she just kind of said it. *And I did, it just blew my mind. I'm like, 'cause I didn't even think about that.* And so, that's when I talked to the librarian and we got it all worked out. And it was, it's a whole, it's gonna be fun.

I did not define this issue as "the biggest problem" in Kevin's argument; instead, I defined it as the most glaring warrant for his claim. Nonetheless, Kevin communicated with the course librarian for additional information and ended up attending to it in his final argument. Our conversation lasted nearly an hour and involved me questioning him, rather than directing him, about his evidence. That he sought out my help twice over the course of this assignment was further evidence of the lengths to which Kevin was willing

to go in order to produce a strong argument. Kevin took advantage of all resources at his disposal on a research question that, as for most of his peers, turned out to be more complex than he had imagined.

Finally, during Unit 3, Kevin's reflection and writerly role codes sharply rose. He noted in his final interview that his conception of argument had changed drastically since the beginning of the course, and that he appreciated this newfound skill.

It's become more than just an assignment. It's become more like learning how to completely change how I write...Before, I would write kind of in a high school way where you could cheat the system and write words that are kind of fancy and get a high score in the computer rating system. And so, I didn't have a very good way of writing. I could write well but not. I would just write like a typical five-paragraph essay and that was my writing style. So, it's been kind of interesting learning how to completely write in a, in a way that's my own. Kind of my own tone, my own audience. And so, it's been like a learning how to write in a whole new way...

Furthermore, by this point he was already transferring the collaborative method of writing and revising from the course to other contexts:

I typically write pretty alone...But I just felt like this course has changed in a way where I have to focus more on my audience. And by focusing my audience, I had to run my paper through mine...I've actually already started to implement it in other aspects as I'm writing research papers for my lab that I'm researching in. I'm also looking, seeking points of view, counsel, from other scientists and other researchers. So, it's kind of been a good opening more than anything. Rather than a thing that's staying in 2010, it's been a good start to help me in a whole new way of writing that's actually a lot easier and a lot better.

Conclusions

Kevin's interpretation of himself as a researcher primed his inquiry-based approach to the course. He came to English 2010 equipped with many assets, including his passion for inquiry, his work ethic and ability to self-regulate, his openness to

alternative viewpoints, and his goal to learn and grow personally. He saw himself as a scientist-in-training and thus enjoyed applying scientific reasoning to subjects about which he truly cared and perceived as personally relevant. He was able to reflect on his strategies and generally altered them when they failed him. Finally, he appreciated the dialogical aspects of research, writing, and being in the world. Kevin's story of growth was largely due to these affordances at work. The course provided him with experience in the writing process, which he came to value greatly and transfer to other contexts. Kevin interpreted his teacher as mentor and peers as colleagues. His understanding of the purposes and strategies of argument became less formulaic and more complex over time—and this new understanding was amplified by his goals shifting toward consensus and away from persuasion. A desire to inform, coupled with his goals and growing ability to write for specific readers, contributed to a final argument that demonstrated his dedication to improved argumentation. All these things, over time, likely contributed to his substantial reduction in myside bias and increased rhetorical awareness.

Rachel: The Constrained Problem-Solver

Cause I know my mom wants to read it. Like, she's already told me, she's like, "I want to read this when you're done with it." I'm like, "Don't worry, you will." So, I feel like I'll give her a copy and I'll let her read it on her own. And then, like, I'll just sit there 'cause I know my mom's someone who's, like, going to want to discuss. And I kinda want to talk to her about it. And so, like, I'll just kinda keep myself, like, in the room with her, like, so that, like, we can talk about it as she reads through it and after she's finished. And like, I'll probably do that, kind of like with the rest of my family members as well.

Rachel was determined to solve real-world problems. Not big-picture societal controversies—like global warming or racial injustice—but her own personal problems,

such as earning a living, paying for college, and improving her family relationships. She used English 2010 as an opportunity to locate, and more importantly—implement—tangible solutions for personal challenges she faced. Once she saw the potential to move beyond writing as a performance for a teacher, she consistently used her research and writing to bring about practical and positive life changes for herself and those she loved.

Rachel brought many assets to the course on day one: a strong sense of self-efficacy and an incredible work ethic, coupled with an ability to self-regulate, among them. She was a high-achieving student, worked and excelled in her retail job, and saw herself as good at most things, remarking, “I enjoy so many different things. Like, I’m surprised I even picked a major because, like, in school I always loved every single topic that I learned. I just feel like I’m pretty well rounded overall.” In these ways, she was similar to both Emily and Kevin.

It’s difficult to imagine that these abilities did not grow, at least in part, to the constraints she faced in her personal life. She said little about these problems in interviews—which were some of the shortest among the study’s participants due to her brief answers and general disdain for conversation; however, her writing—which was so earnest and honest—highlighted them. She struggled to connect with others even as she consistently sought and fed off of their approval. Her initial arguments were launched in an attempt to solve a very real and tangible physical problem: she received no financial or other help from her family for college, so her success or failure depended utterly on her ability to make her own way. Though she sincerely loved her family, there were serious problems with mental illness that strained communications and made her nervous and

upset. She interpreted her final researched argument, addressed to her parents and four siblings, as an opportunity to resolve these communication problems.

Rachel's sincere desire to fix her personal problems led to her persistent pursuit of claims about which she felt strongly, and this drive routinely prevented her from reflecting about her own thinking and writing processes. For example, though she described her family as "the Standard LDS family" in her incredibly detailed audience analysis heuristic, she then describes each member in detail in ways that reveal how troubled her home life was. Her father grew up in an abusive household and suffered with PTSD and agoraphobia. Her mother was raised by an alcoholic father who committed suicide and suffered with depression and anxiety. Rachel was the oldest of five and defined herself as an "emotional overthinker." Regarding her siblings: one brother had depression and was suicidal, another had anger problems, depression, and was also suicidal, her sister had anger management problems, anxiety, and was violent—and the baby of the family was the sibling she was closest to as he showed her affection and "loves me more than [my] mom, apparently."

Despite these challenges, Rachel remained positive and believed in the viability of real-world solutions. Her home life constraints, like Emily, led Rachel to journaling as a coping mechanism. Yet the nature of her journaling was radically different from Emily's. Instead of a place to reflect and play, Rachel was all business in her journals; they were where she went to neutralize her feelings and instead practice talking *in writing* before it took place *in person*. Her goal in the first paper was "...just to structure my own thoughts so that when I do go to my boss and present my case I can be more, like, better at it."

This quality of Rachel's reflection, its predication upon persuasion goals, prevented her from open-minded consideration of alternate perspectives. This likely contributed to her somewhat one-sided argument schema remaining basically stable throughout the course and even becoming less balanced. Her goals nearly always involved some level of persuasion, though this trend eased off toward the end of the course when it was accompanied by more balanced generating. Rachel repeatedly mentioned how her arguments were crystalized, well-communicated versions of her plans for resolving important personal problems on paper—before attempting to resolve them in real life, verbally, through conversations with others.

Myside Bias Shifting

Multiple data points indicate that Rachel's myside bias decreased over time, though her survey data is contradictory. Her myside bias decreased substantially in written products, notably in interview coding, yet her pre/post surveys demonstrate both decreased and increased myside bias.

Table 13 displays survey data indicating that Rachel's fact-based schema score dropped over the semester; however, her balanced score also dropped. This suggests both a slight overall reduction in myside bias *and* a schema that became slightly less invested in acknowledging alternate points of view over time. This result contrasts somewhat with her changing definitions of argument over the course. Rachel initially possessed a good understanding of the primary elements of argument—including rhetorical elements—though she was focused on the claim. Yet by the end of the course, her definition included counterargumentation elements and tied structure to audience resistance.

Table 13*Rachel's Pre/Post Argument Schema*

Test	Fact-based score	Balanced score	Definitions
Pretest	6.1	6.4	“Has a good balance of ethos, pathos & logos; a solid, clear thesis; strong, relevant points/example; clear descriptions tying points back to claim; an intriguing introduction to get the attention of the reader.”
Posttest	5.5	6.0	“The structure of a good persuasive essay really depends on your audience & their resistance to your topic. For a non-resistant audience give some background & intro → points/reasons → counterarguments & rebuttal → conclusion, but for a resistant audience, start w/ acknowledging their POV & work through the counterarguments, & delay the claim till the end of the paper.”
Shifting	-0.6	-0.4	

Rachel was one of only two participants to have completed a first-semester composition course, English 1010, rather than skipping it via test scores; this was likely a factor in her greater attention to rhetorical strategies in her initial definition. Her final definition captured these initially absent elements and showed growth in her understanding of structuring arguments for specific audiences. Still—her focus on form here is notable. Furthermore, her final definition underscored a persuasive goal as its foundational assumption, which held true for Rachel throughout the course.

As Figure 25 demonstrates, Rachel demonstrated strong myside bias reduction in her written arguments over time. Her stated goals in the first two arguments were solely persuasive, then became mixed (persuasive/consensus) in the final two.

Figure 26 further shows that this shift was accompanied by a general trend toward increasingly stronger audience analysis and adaptation, though the latter dipped slightly

Figure 26

Rachel's Shifting Use of Audience, Purpose, and Conventions Over Time

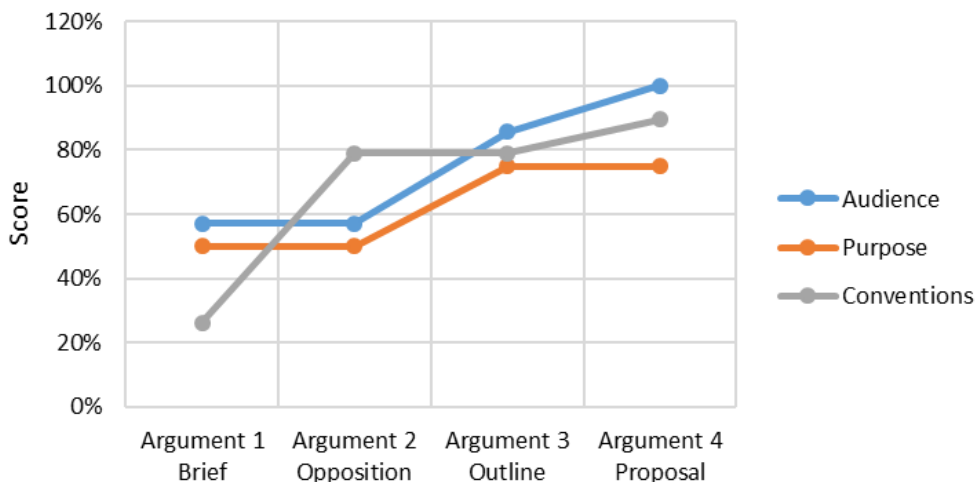
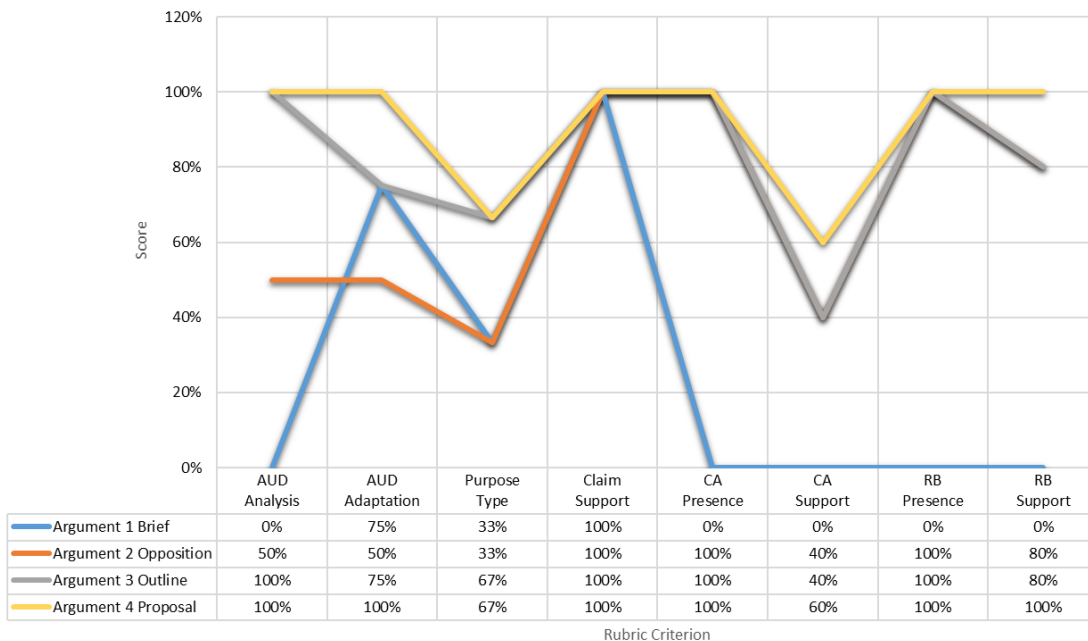


Figure 25

Rachel's Myside Bias Shifting and Rhetorical Awareness



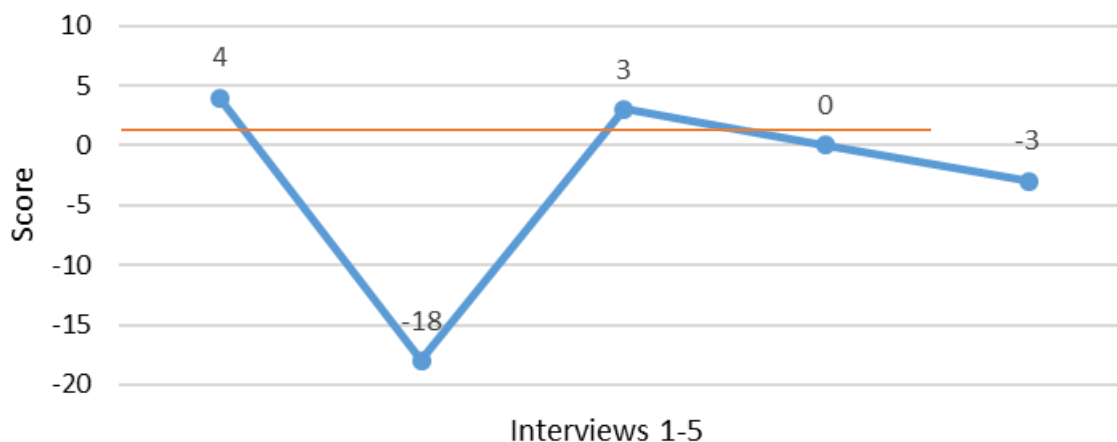
Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student's attention to alternate perspectives.

when writing the Opposition argument, which she described as very difficult to write. Her ability to wield argumentative conventions also increased steadily over time, in alignment with increasing audience awareness and consensus goals.

Rachel's growth in balanced written argument is backed by her interview coding, yet less pronounced growth is indicated, as Figure 27 suggests. Her bias was most strongly mitigated during Interview 2, during Rachel's discussion of her Opposition argument. Former empirical studies of myside bias have shown that explicitly cueing a writer to detach from a cherished point of view is key to balanced consideration of alternative viewpoints. This was clearly the case for Rachel, as this assignment required her to argue an oppositional claim and it led to a strongly more balanced discussion about her writing at this time.

Figure 27

Rachel's Biased/Balanced Interview Comments

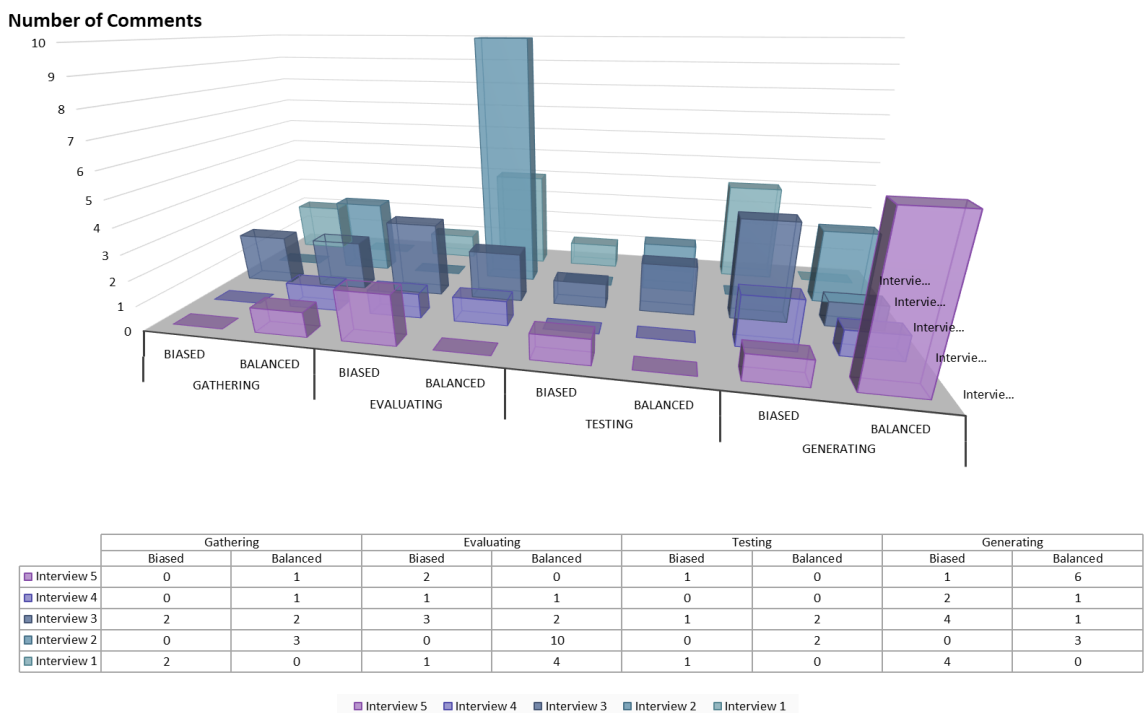


Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus, lower scores demonstrate lower bias. A score of zero denotes an equal number of each comment type was made.

Note, however, that this move toward balanced reasoning was rather short-lived, as her third interview coding score jumped right back to where it was during the first interview. Further evidencing this trend is her radically more balanced evaluation score while writing the Opposition, as Figure 28 clearly demonstrates. Never again would she achieve that level of balance in evaluation nor in any of the other four behaviors the study used to operationalize myside bias. A final observation is the huge increase in balanced generating she achieved in the final interview when discussing her final argument of the course. This oddity again demonstrates Rachel’s ability to perform in her writing, as she

Figure 28

Rachel’s Myside Bias Through Interviews by Criterion



Note. This chart depicts how a participant’s myside bias shifted over time by comparing biased to balanced comments during interviews. The number of comments is represented separately for each of the four ways myside bias was operationalized in the study: gathering, evaluating, testing, and generating. The chart should be read from back to front for chronological progression over the semester.

saw it as the place where she could construct idealized solutions in black and white, regardless of how messy the problems and future conversations might be.

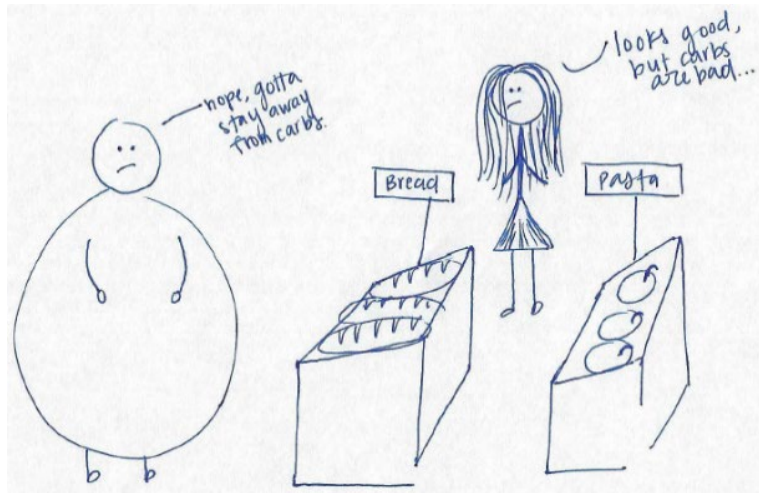
For Rachel, gathering was neither a major problem nor strength over the course, though she was at her best when writing in support of a claim she did not espouse. Her evaluation was most balanced at this same point in time. She dearly desired solutions for her important life problems, and this, combined with her work ethic, may have prompted her wide research and reading—and thus, more balanced testing—when constructing her final argument. Her generating practices became steadily and impressively more balanced and less biased over the course of the semester. The following discussion provides more insight into how Rachel’s interpretations of argument, herself as a writer, and the world around her led to negotiations resulting in her reduced myside bias.

Unit One

Like both Emily and Kevin, Rachel’s first course drawing demonstrates the difficulty she had in selecting a topic to write about at the course outset. Though the prompt asked her to sketch the rhetorical situation she faced in the Brief (first) argument, she instead sketched out her argument on “why carbs are good.” Figure 29 also suggests two emerging patterns that held true for several participants. First: it was difficult for relatively new academic writers to consider the rhetorical aspects of their arguments, even when they had received former instruction in rhetorical principles, as Rachel did. Second, for this same group of writers, an argument seemed to involve picking *one of the two possible sides*—most often framed as dichotomous issues (i.e., good/bad, right/wrong, best/worst).

Figure 29

Rachel's Brainstorm for Her Brief Topic



Rachel changed her initial Brief claim to argue instead why she deserved a raise, as she began interpreting the assignment as a chance to solve a real-world problem. The argument was written directly to her boss, in letter format. She used five logical reasons to support the claim, citing evidence her boss would recognize, but no outside sources. Rachel's first interview contained no reflection codes of any kind. When asked, she said she changed topics because the new one “fit all the qualifications for this paper” and explained:

I was like, sitting there trying to start writing a paper about carbs and I was about to like, delve into the research but then just part of my brain... Like, I had just gotten home from work too, and was just like, “No. You should write this paper about why you deserve a raise.”

Interviews clarified that Rachel had been generating supporting reasons for this claim for some time, which made the writing of this draft quick and simple. Her persuasive goal was evident in her response to being asked whether she was thinking

about her boss's point of view: she was "not necessarily [trying] to get in her head. I'd say more like just...better portray what I was feeling and wanting in a way that she would be more receptive of as a boss."

Rachel's case was difficult to analyze for quite some time. She mentioned in the first interview, for example, that she was "one who just kind of analyzes and evaluates a lot of perspectives on things...I'm not super strongly opinionated because I do see both sides of an argument." When confronted with alternative points of view, especially when instructed to detach herself from her preferred claims, she demonstrated great potential for considering them. Yet they rarely occurred to her in isolation.

Evidence strongly suggests that this was due to two things: her mental model of written argument, and her general distaste for conversation, bordering on a social aversion. Consideration of alternative perspectives was something she was generally willing to engage in in order to achieve her goals; however, she operated on the assumption that recording such considerations *in writing* was just not something one did when mounting an argument. When prompted about how she would hypothetically respond to evidence that contradicted her Brief claim, she responded:

I'd like, take everything into consideration. If there was something I needed to work on then I'd spend a little bit more time before making the argument to, um, make my side stronger. Like, if for some reason I sucked at showing up to work on time and that was a reason I didn't deserve a raise, well I'd make a better effort to be on time and then I'd go and present my argument, I feel like.

In other words, Rachel's priority was to fix the real-world problem. However, when asked whether she would include oppositional claims if confronted with them in her Brief, she states that "with this, where it's like, I'm trying to sell myself, then I feel

like you really gotta show all the good parts.”

This drive to focus on her positive qualities in the Brief, because so much was riding on getting a raise at work, resulted in serious difficulty when Rachel began drafting the Opposition argument. In her second interview, Rachel spoke about this difficulty and how she negotiated it.

So, like, it was, it was harder for me to write this at first. Like, I really struggled. It took me, it definitely took me a while to wrap my head around it. And like I said, like the whole first draft that I wrote I totally just ditched it and threw it away and restarted because it was hard, like, going against my own views. So, *trying to like step back and imagine myself as a completely different person*, like, with this audience it helped a lot.

Rachel’s description here for how she overcame her myside bias, a strategy also utilized by Tanner (discussed below), has been suggested by empirical studies, as mentioned in Chapter II. When an assignment requires students to detach from their views, role-playing or persona adoption can help them consider alternate perspectives. This strategy helped Rachel get past her writer’s block long enough to consider counterarguments to her claim. This example underscores the important role identity plays in myside bias: some beliefs may run so contrary to our conceptions of *who we are* that they are impossible to entertain *and remain who we are*.

Rachel implemented several other new strategies to help her generate support for the distasteful claim that she should not receive a raise. These included actively researching for counterarguments, using multiple search terms to read widely, and empathically listening to stories of employers recounting why they could not offer raises to their employee. Rachel’s reflection coding was never higher than it was during this time as she actively considered alternate points of view and their validity.

Multiple perspectives are evident in her second drawing, represented here in Figure 30. Rachel described this image as depicting her boss sitting at work, worrying about schedules, money, and time. Tellingly, however—Rachel is less clear on who the other figure, the one explaining to her boss that Rachel deserves a raise, *actually is* in this image:

And then over here you've got...I don't even know who this is supposed to be. Maybe it was me, maybe it was my coworker. But she's over here, like, "Rachel does this this this and this and they're all, like really great things." It's like the probably having a conversation of like, "Oh, well Rachel deserves a raise because of this" or "I can't give her a raise because of that."

Figure 30

Rachel's Drawing of the Opposition Rhetorical Situation



Several issues are then evident here. Rachel was making progress in acknowledging multiple viewpoints that conflicted with her own, and her “acknowledging voices” codes increased dramatically in this interview. Furthermore, Rachel was likely still confused about what a “rhetorical situation” was, as this prompt asked her to depict the rhetorical situation she faced in the Opposition argument, yet her drawing remains focused on her Brief claim (that she should receive a raise). Perhaps

most interestingly, despite her progress at this point in the semester—Rachel’s persuasion goal still ruled her agenda. She commented in her second interview:

So, the goal was to show why I didn’t deserve a raise. And for me it kind of became more, like, other than like, that being required as just part of the assignment, um, I started to view it more as, like, if I can...if I can, like, convince, like, theoretically those two people why I didn’t deserve a raise then it would help me make a stronger argument when I approach my boss.

In other words, she was using the Opposition argument as a tool for her to strengthen her *actual* argument (i.e., that she deserved a raise). Rachel chose her coworkers as audience for the Opposition argument, constructed (like the Brief) as a letter to them. The assignment required her to select an audience resistant to the claim, and Rachel reasoned that these coworkers understood her work ethic well enough to disagree with her not deserving a raise. Interestingly, Rachel did not select herself as audience—though I suggested this option to her—even though she was the most obviously resistant reader to the claim. Perhaps she could not bring herself to imagine that conversation—or perhaps her vision of her reader was simply unclear.

Rachel appreciated writing the Opposition because it had exposed her to the possibility of the future conversation with her boss not resulting in a raise. It “helped, much more than the Brief, better prepare me for, like, when I do have that conversation.” By the end of Unit 1, Rachel was practicing consideration of alternate perspectives but for a pointed reason: to prepare herself by anticipating problems that conversation might raise that would prevent her proposed solution from becoming a reality. This hesitance rings dissonantly in the tone of her Opposition, where she concludes by telling (threatening?) her coworkers: “I guess if I decide I need to earn more money bad enough

to maintain my lifestyle, [our workplace] can train others to do what I do and I can put my skills to use at another company.”

Unit Two

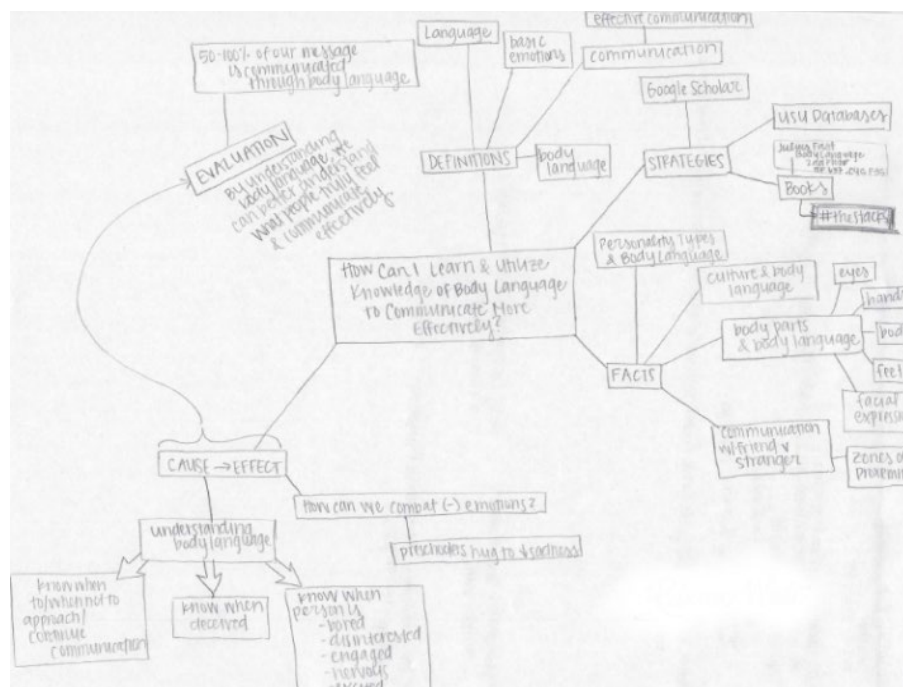
Throughout the second unit of the course, Rachel worked hard to learn all she could in response to her research question: “How can I use body language to more effectively communicate?” This question was driven by a concern she mentioned in interviews: Rachel stumbled over her words and was not confident in her abilities to converse with others. Her speech often featured verbal crutches (e.g., “like”) and she mentioned this to the interviewer early on: “Well, sometimes I just kind of stumble over my words, as you saw a minute ago. So, I feel like if I just get my thought written down on paper and like, more organized in my head at least then when I actually go to say it, then it just comes out a lot more fluid.” Rachel used writing, in part, to iron out her perceived verbal constraints.

Her Stasis assignment was beautifully detailed in its completion and color-coded for facts, definitions, cause-effect, and evaluation issues. It contained six sources and demonstrated her earnest desire to learn more about effective communication strategies.

Figure 31 highlights Rachel’s view of her own progress in the second unit of the course. Her approach to this drawing was to produce a detailed concept map with her question centered and surrounded by all she was learning. When asked why she created a map rather than a drawing, she responded that “webs and maps are kind of my go-to.” It’s unsurprising that Rachel, a dedicated problem-solver, would be drawn to maps because they clarified the terrain and provided ways in, around and out.

Figure 31

Rachel's Depiction of Her Progress in Unit Two



Perhaps more interestingly, her “strategies” utilized during this period were simply depicted as *the locations* where she had gathered information (databases, the stacks) or *types* of information (books). In other words, these were not strategies at all, but information containers or types. In stark contrast with Emily and Kevin, Rachel’s third interview was not coded with any type of reflection codes during this period; reflection was not often detected in her interviews as a whole.

It’s important to note that this unit taxed all students in the course because of the time-consuming work involved in locating and evaluating information. Rachel’s detailed concept map provides a vivid representation of all she was doing to build her background knowledge. As a matter of necessity, this building required her to ignore certain voices

and attend to others—and like many of her peers, the ignoring code was assigned regularly during this unit as she attempted to filter information in and out. This difficult process is one that students necessarily must negotiate on their own, aside from talking with others about finding their way toward solutions.

Yet Rachel clearly wanted to learn during this stage and her Graphic Organizer demonstrated this fact. Unlike many of her peers, she wrote detailed summaries of her sources, rather than pasting abstracts, and her organizer was over thirteen pages long. The majority of her sources were books—in stark contrast to her peers’ preferences for concise resources. She noted that her high effort here was meant to “prevent problems down the road” when it came time to develop a claim and supporting reasons. She had beautiful intentions.

Yet previous studies have shown that high cognitive load often leads to reliance upon cherished ideas when formulating claims. This seemed to have occurred in Rachel’s case. Her reflective essay following the Graphic Organizer assignment resulted in her hypothesized claim: “We (me, my family, and friends) should learn about ways people communicate because effective communication is a two-way street which will lead to stronger, healthier relationships.” Wonderfully, Rachel let herself be led to a subject area that her research suggested—moving away from a sole focus on body language toward communication generally. However, the cherished idea here was less topic-specific than belief-specific; Rachel repeatedly strove toward arguments that would provide solutions to her life problems. Her argument at this point was logical. What challenged her was the difficulty she had in perceiving the *practical* counterarguments to this hypothesis. Rachel

had an incredibly difficult time seeing past the moral correctness of the argument to identify any logistical obstacles to achieving its fruition.

In her Toulmin assignment, Rachel commented that her goal was to make sure the points she used actually led to her claim, “to remove flaws and holes where people would be like, ‘Oh, but this can happen and then that’s not true anymore.’” In other words, rather than using Toulmin as an analytical tool for refining her argument, *she interpreted it as a tool for anticipating and eliminating alternate points of view*. During this period, her speech was characterized by many conflicting codes surrounding her goals, for example: learn *and* support a pre-existing belief, be audience aware *and* combat counterarguments, formulate an opinion *and* persuade others. Audience codes were sparse at this time until she narrowed her audience to her family later on.

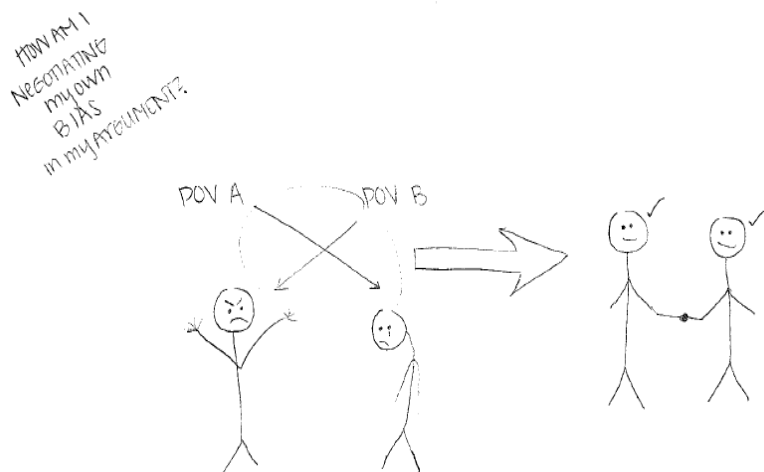
After making that decision, Rachel began to think more concretely about how to adapt her highly technical data for her intimately known audience. A peer reviewer (Sadie) suggested she utilize religious sources in addition to her academic ones in order to appeal to her newly narrowed readership, and this suggestion appealed strongly to Rachel:

Um...I felt like it was going to be so much more meaningful. Like, I just felt like, lightbulb moments of like, “Oh, this is going to click a lot better with my family” rather than like, “Oh, hey, look at all this like research and numbers.” Cause like, research and numbers are good but I feel like pulling in values, um, of like, what my parents and my siblings like all believe will like, combine with the numbers. Make a much stronger argument.

In Rachel’s discussion of her drawing in Figure 32 she contrasted two scenarios: the first depicts two people with different points of view, one “ornery” and one “sad.” The second shows two people holding hands, with check marks above their heads, happy

Figure 32

Rachel's Drawing of Her Own Bias Negotiation



and content. She explained that the arrow represented how, if she could “look at other perspectives too, then that would help eliminate bias and make things go smoother.” This representation highlights how resolving problems, reducing disagreement, and in the case of this project, improving communication, was her ultimate goal. Her observations here were important, as her Toulmin assignment articulated only two potential conditions of rebuttal. She commented about this:

And I was like, “Oh, but you know, I feel like doing something like that would be like, way more persuasive since my audience is my family.” And so, I, I’ve, I started delving a little more into that.

Rachel’s persuasive goal still reigned by the end of Unit 2. She wrote in her writing notebook that the peer reviewer’s advice to include religious sources for her audience “was very helpful” because it

will help me target my audience in a much more meaningful way. I don’t know why I didn’t think of doing that sooner considering how religious my family is

and how significant/persuasive that could be with my family—especially my parents.

As she moved into the final unit of the course, she was beginning to consider her readers' perspectives more actively and wrote a highly balanced final argument.

Unit Three

Rachel's work in building her background knowledge in former assignments paid off in the final unit, as she did, in fact, prevent the problem she anticipated in her Graphic Organizer. With a firmer understanding of her topic, she was able to focus her attention in the final four weeks of the course on how to adapt this information to her audience. Her goals in the Outline shifted from solely persuasion toward combined persuasion/consensus-building. This shift, coupled with her desire to achieve a solution to the problem of family communication, likely led to her heightened awareness of the importance of compromise. Her assignments demonstrated increased audience analysis and adaptation for content, source selection, and structure—with occasional lapses through assumptions that every family member was on board with her claim. Additionally, she still generally struggled to anticipate the practical counterarguments to her proposal (e.g., body language may not be entirely controllable).

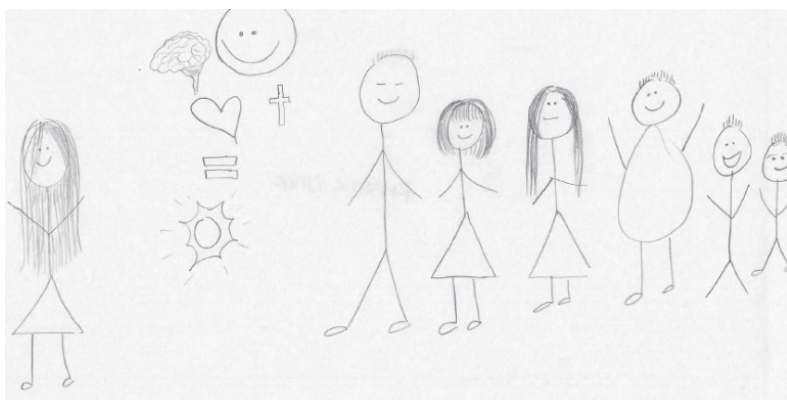
Like Kevin, Rachel conducted a concrete analysis of her audience. She administered a quiz printed in a popular book on communication strategies, Gary Chapman's *The Five Love Languages*, to her readers. Her final argument included two graphs representing each family member's preferred love languages. It was a high-effort and wonderfully adaptive strategy. Yet her argument clarified her tendency to focus on

the solution rather than the problem: She focused on family members' similarities and deemed two love languages (time and service) as dominant, despite the fact that her family members' preferences shown in the graph varied widely. Furthermore, she did not describe how this knowledge could be practically used to improve communication, nor did she articulate how their individual differences might be addressed.

Figure 33 captures Rachel's vision of what and how she planned to communicate with her readers. Each family member was depicted, and they composed over half of the drawing. She described her strategies in this drawing, represented by the symbols separating her from her family. The heart represented that "you need to be genuine, and like, have that love." The cross represented her plan to appeal to the family's common religious values which highlight the importance of family. Rachel's textual adaptation for her readers increased.

Figure 33

Rachel's Conception of Her Audience and Message



Rachel also revealed during the fourth interview that the sunshine and smiley face represented her plan to stay positive in the argument:

Um, just cause like I feel like as I wrote it, I was trying to be really aware of my audience. And one of the things like, I know my family loves me and they know that I love them. But at the same time, I feel like it's not something that we're super verbal about. And I feel like it's something that we need to be more verbal about. So, in like, my paper, I'm really just expressing my love for them and like, um, you know, tying in like more of like the good memories of, like, times that we had good communication and why it worked. And like, just kind of being like, hey, see, like if we, if we use our words and like, we learn how we communicate with each other then, like, everything's going to be a lot better.

This excerpt demonstrates the role Rachel continuously assigned herself when writing arguments: Stay focused on the solution and present it in the best possible light in order to see it realized. She noted in this same interview that she identified as an optimistic person who saw everything positively by nature, but also mentioned that she was "sometimes overly optimistic." This inherent trust and positivity may have contributed to her general confusion over the need for evidence evaluation. For example, she responded to a general question about evidence evaluation at this time by asking,

Um, like, I just...what do you mean exactly? Like...? How did I evaluate it? Um, so as I was looking for like the personal examples of my family, I was finding, like, I was looking for ones that were like more positive generally.

This response dealt with how Rachel gathered evidence, not how she evaluated it. Perhaps this initial filtering out of "negative news" explains her difficulty in generating counterargument evidence, as this was a trend for her. When asked how she evaluated her sources throughout the course, she was consistently confused by what the question was asking. In Interview 4, when asked how she evaluated evidence contradicting her claim, she responded, "Um, I feel like there weren't many that contradicted it that much. But like, if there was something then like, I kind of like, just set it to the side but like, I'd still go back and look at it every now and then." This highlights two important points in

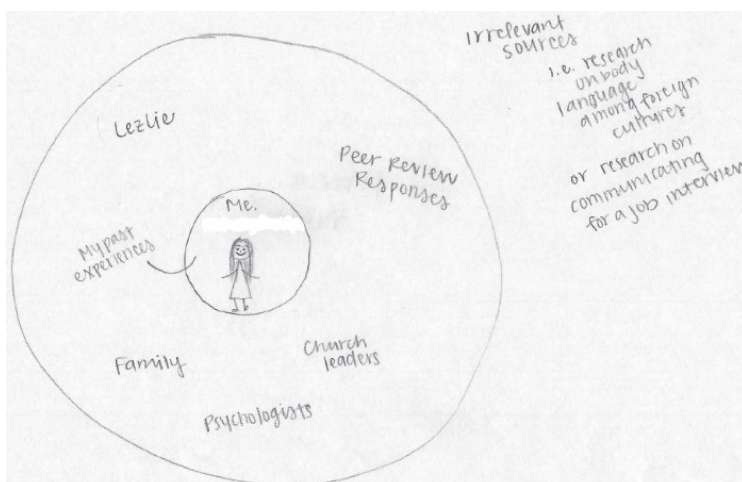
Rachel's case: She apparently was not aware of evidence calling her argument into question, but if and when she encountered it, she utilized no principled strategy for evaluating it.

Rachel was concerned about her inability to consider counterarguments and attributed the problem to the time it took to reason through them. Yet unbelievably—three different people (myself, Kevin, and another peer reviewer) called out the practical counterarguments missing from her Outline and final PAI argument—but Rachel did not fully address them in either her Outline or PAI first draft. Though she made competent moves toward adapting for her readers, her goal to “open the reader’s eyes” and persuade seemed to have prevented her from hearing or attending to things that might prevent her problem from being solved.

Rachel's final drawing in the course, represented in Figure 34, confirms this. The circle of voices she described herself listening to include her own, her family's, religious

Figure 34

Rachel's Voices Included and Discarded



leaders, psychologists, her teachers, and peer reviewers—despite the fact that she ignored practical counterarguments noted by at least two of those entities. Interestingly, the only voices she claimed to have ignored were “irrelevant sources,” or those which were not well-adapted for her readers.

Time may have been a factor for Rachel, because the second draft of her final argument did include the practical counterarguments and (briefly) address them. This suggests an important finding in the study: Time is a crucial factor for argument writers, and their ability to regulate it is critical. Her final interview captured how time factors into counterargument generation and also highlighted how Rachel’s goals shifted slightly at the last minute:

Interviewer: You resubmitted your PAI at the last minute, the morning the final draft was due. What about your argument were you most concerned about at that point?

Rachel: Um, the counterarguments, cause I, I understand that counterarguments make a paper more credible and I was just struggling to like come out with good counterarguments and finding enough, like, research to back my view on it. Well not necessarily like, research to back the view. I guess more just like tying it in in a way that effectively got the message across.

These goals were also reflected in her plan to have “a little one-on-one” with her family members to discuss the argument. She realized these conversations would need to take place individually—one with mom, another kind with her sister. The tone of the written argument is positive, and she worked to make it accessible to everyone from an eleven-year-old to her parents. But she saw (and feared) that the actual discussions that were meant to follow the written text—her focus all throughout the project—would need to be even further tailored to each of her unique family members.

Conclusions

Rachel's interpretation of herself as a competent, hard-working student affected her progress in the course positively. She came to the course with many skills, including a strong self-efficacy, high motivation to learn, and an incredible work ethic. Her interpretation of the purpose of written argument as the creation of an ideal, crystalized solutions to real-world problems she faced led to her difficulty in attending or listening to contradictory evidence unless she was explicitly cued to do so. She possessed strong reading skills and gathered information widely; yet she did not have a principled method for filtering out or evaluating information. Rachel did not seem to possess strong reflective tendencies nor strategies; evidence of metacognition throughout the course remained consistently slim. Furthermore—she did not enjoy talking with others generally and was often nervous communicating orally with others, which led her to select this very problem as her major course project. However, dialogical interactions with peers, her teacher, and her readers, combined with sufficient time to revise, did assist in her myside bias reduction. Her strong desire to effect real solutions to real personal problems with very familiar readers set an initial bias in each of her arguments; however, the importance she placed on finding solutions to these problems also, and somewhat ironically, may have led to her production of balanced written arguments demonstrating genre norms and rhetorical awareness. Her growth in audience analysis and adaptation and her goal shifting to include consensus-building were key elements in this shift.

Tanner: The Analytical Builder

Like...(pause)...it's kind of almost like acting if that makes sense. Like, I'm putting my thought on the shelf and like, putting myself into the role that they're already living in and seeing how I would react and how I would live in that place. And if I were to come to the same conclusion I suppose...I feel like that's where I start asking questions. Start asking like...for example, my roommate and I have a lot of discussions like that where we'll maybe be on opposite sides of an argument. We'll discuss, like, the wherefores and the what's and all of that. Why is it that way? I feel like a lot of the times it ends very, very well. It ends with a lot of like, alignment on both sides. I think just asking questions and being civil and like, understanding you could very well be wrong.

Tanner's case is a fascinating one for its complexity. Though he had completed the most college credits of any participant, all sixty-four of them were solely Advanced Placement (AP) credits earned during high school. This technically defined him as a junior, though because it was his first semester on campus, he classified himself a first-year student. This underscores how much *experience* mattered to Tanner. His experiences, both at home and other social contexts, hold strong explanatory power for his myside bias mitigation.

Tanner consistently wrote about political (or politicized) issues. His first (Brief) argument promoted congressional term limits and his final (PAI) argument pressed the value of nuclear energy; he devoted his entire semester's work to controversial issues within larger societal domains. In the first interview, when asked why he wrote on term limits, he responded,

It's something that I kind of *feel strongly* about. I feel...*I have a lot of like, strong political opinions. I'm that kind of guy.* Um, and that's one I feel pretty strongly about. I feel like it would be a solution to a lot of problems we currently face in government.

Words such as those italicized in this excerpt appear to cast Tanner in the role of

one headed down the primrose path of myside bias, and this indeed held true in his initial written argument. Like Chris (see below), he was highly interested in politics, a subject area that former studies have shown to be particularly ripe for myside bias. But like Rachel, Tanner was genuinely invested in solving problems—societal, rather than solely individual in nature—and this commitment translated into a kind of activist approach to his audiences, who were always voters.

Critically, and unlike either Rachel or Chris, Tanner possessed several skills that prevented him from closing himself off to alternative worldviews and instead caused him to seek them out. Like both Emily and Kevin, these included a penchant for dialogical interactions and consistently applied reflection. In his case, this behavior began early on and prepared him well for a future of critical thinking. Tanner's description of his family life growing up seems to hail from a progressive parenting manual. He told the interviewer that his parents, "Who are very politically inclined in a certain direction," ensured that family dinner time was devoted to reasoned conversations about world and national problems. Two of his grandparents were attorneys and one was a local judge—suggesting this tradition was engrained for both Tanner and his parents. Political talk at the family dinner table, a difficult prospect for many, meant something very specific to Tanner: an ever-present expectation for *evidence-based* discussion. Though he noted his parents leaned ideologically to the political right, he also cautioned that they were "the kind of people who, um, they won't get mad if you bring up an opposing argument so long as you're willing to back it up. Growing up with that was really helpful for this kind of thing."

Tanner had lived in Sweden for two years while serving an LDS mission. In interviews, he spoke about how encountering viewpoints in high school and abroad which differed from his parents' was eye-opening. When asked whether he aligned himself with one political ideology or another, he responded like the math and statistics double-major he was:

I feel like...I feel like all people, but me personally, *I'm kind of the lump sum of all the people who have influenced me over the years*. So, I'd say I have a lot of views that do align with my parents, for example. A lot of views that align with my economics teacher. A lot of views that align with friends of mine in Sweden. And then a lot of views that I feel like *maybe I don't belong to any of those but maybe some sort of strange amalgamation of them*. Hard to tell.

Tanner's family background, schooling, and traveling experiences contributed to his complex understanding of "truth," the power of rhetoric, and an acceptance that subjective life experiences lead to valid perspectives that might contradict his own. He purposefully sought out alternative points of view through reading, dialogues with diverse people, and imagined conversations in which he attempted to stand in others' shoes to empathically listen. He interpreted arguments as useful forms of communication, since they were "the only way things get done in our world." Tanner was a strong evaluator; after the Brief argument, he continually employed questioning, evidence-based reasoning, and empathy strategies instead of attempting to support a predetermined claim.

Myside Bias Shifting

Multiple data points indicate that Tanner's myside bias decreased over time. This trend is most evident in his written arguments, where his overall scores increased more steeply over time than any other participant's. Myside bias reduction appears minimally

in interview coding and his pre/post surveys.

Table 14 displays survey data indicating that Tanner’s fact-based schema score remained *identical* from time one to time two. This may be explained by Tanner’s initial and consistent reverence for evidence-based reasoning, which remained stable throughout the course, and the fact that his score (4.90) at the course outset was lower to begin with than all but one other participant’s (Chris, 4.60). However, his balanced schema score rose, resulting in an overall reduction in myside bias, according to survey data.

Table 14

Tanner’s Pre/Post Argument Schema

Test	Fact-based score	Balanced score	Definitions
Pretest	4.9	5.6	“It’s orderly and straightforward, with a clear thesis and intent and well-supported claims from reliable sources. Strong argumentation and logic are also important.”
Posttest	4.9	6.0	“It depends a lot on the audience. It should make a claim, and back it up with evidence and reasoning.”
Shifting	No change	+0.4	

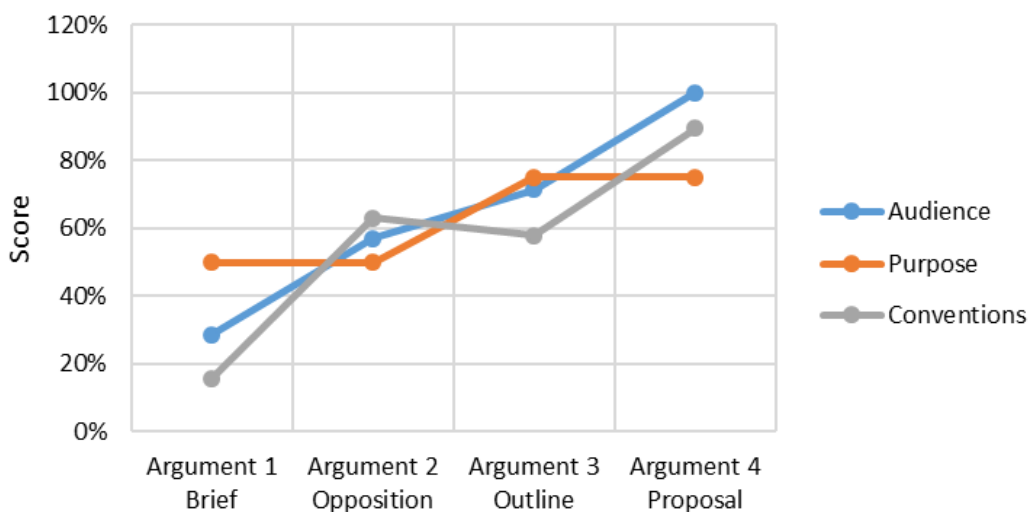
Tanner’s increased balanced score is further supported through a comparison of his pre/post definitions of argument. Initially, Tanner’s conception of a good argument involved an intense focus on the production of a thesis supported with reliable evidence, logical reasoning, and orderly straightforwardness. A claim backed with evidence and reasoning was a feature that held throughout the course, as his final definition demonstrates; however, in his revised definition—even before mentioning these crucial features of the genre—he first provided a qualification: “It depends a lot on the audience.” Notably, however, counterarguments were not mentioned in either definition.

An explanation might be present in Tanner’s approach to evidence evaluation, which, by definition, involved consideration of alternate perspectives, as discussed further below.

Figure 35 displays Tanner’s written purpose shifting in the four arguments of the course. Striking here is the tight alignment in progression between all three criteria: audience, purpose, and conventions.

Figure 35

Tanner’s Shifting Use of Audience, Purpose, and Conventions Over Time



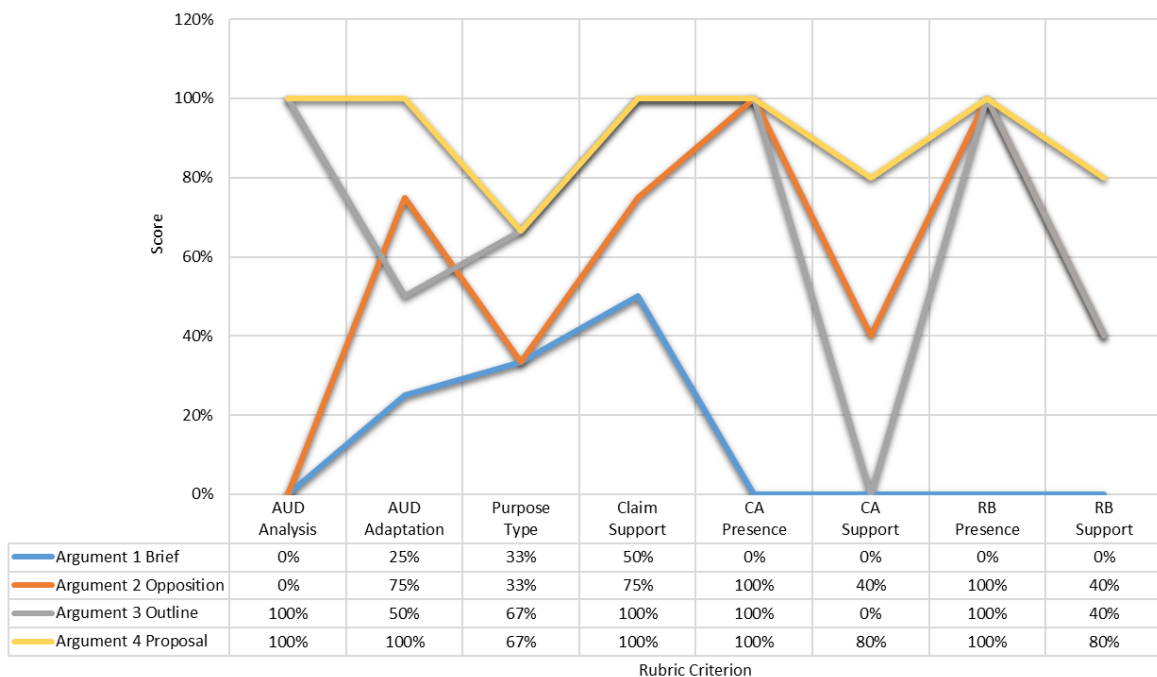
Tanner’s stated purposes for the four arguments followed an identical trajectory to Rachel’s—persuasive, persuasive, mixed, mixed—and as Figure 36 further demonstrates, patterns in the two participants’ written arguments demonstrated several similarities, including a steep overall progression and identically timed counterargument and rebuttal appearances.

Yet Figure 36 also shows that, by the end of the course, Tanner produced more support for counterarguments than Rachel, who instead increased her rebuttal support. An

important difference can also be seen in Rachel’s interview coding (see Figure 27), which shows her bias reached its all-time low in the Opposition, when she was cued to detach from her own beliefs; Tanner’s bias all-time low occurred during Unit 2, when evidence gathering, evaluation, and testing were primary tasks (see Figure 37 discussed and shown later in this section).

Figure 36

Tanner’s Myside Bias Shifting and Rhetorical Awareness



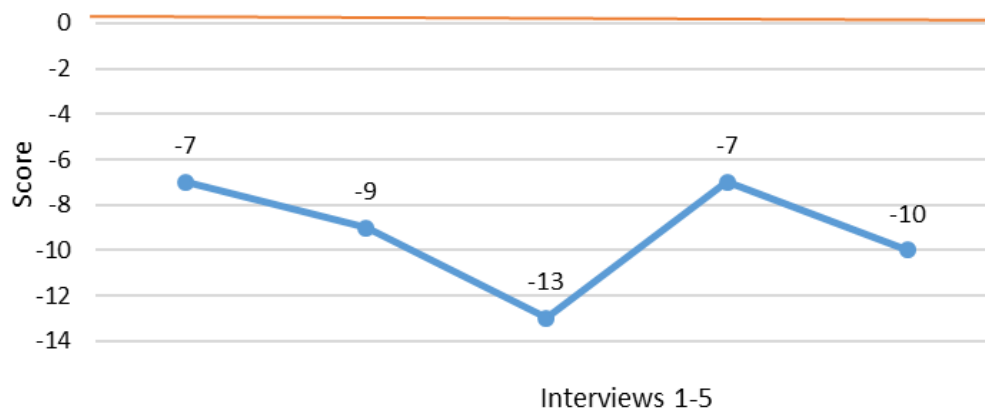
Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student’s attention to alternate perspectives.

Figure 36 also demonstrates Tanner’s incredible progress from his first to final argument. As his purpose moved toward consensus, his audience scores also gradually increased. The low score in his Brief (first) argument was due to a complete absence of

counterargument presence as well as no audience analysis and little audience adaptation. But Tanner quickly acquired these conventional norms in the Opposition, and increased his audience adaptation dramatically, resulting in a large increase in rhetorically aware text production and mitigated bias. His Outline (third argument) hovered near these levels, though his goals became mixed, and his final argument incorporated his highest level of audience analysis and adaptation and use of conventions argument conventions, ultimately resulting in his highest-scoring argument.

Tanner's and Kevin's cases also demonstrate interesting comparisons. Though they were similar in many ways, Tanner's audience adaptation progressed more slowly than Kevin's. Further, Tanner's claim support grew over time, while Kevin's actually lessened. This was likely a result of shifting goals; recall that Kevin's move toward audience consensus occurred earlier and more dramatically than Tanner's. Additionally, Kevin's initial survey scores suggest more room for growth; his fact-based schema score was higher and balanced schema score was lower than Tanner's at the course outset.

Figures 37 and 38 highlight additional similarities and differences between Tanner and Kevin. Both writers' interview coding scores remained below the zero-bias line throughout the entire course of the study, and both were at their best in Unit 2 when gathering, evaluating, and testing tasks reigned. But Tanner's balance improved in the Opposition, where Kevin's slightly declined. And Tanner's testing was an outlier high for balance during Unit 2, far outweighing even Kevin's. Crucially, both participants stayed steadily more balanced than biased and also improved over the course. And both showed a steady increase in balanced generating codes in interviews, which matched their

Figure 37*Tanner's Biased/Balanced Interview Comments*

Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus, lower scores demonstrate lower bias. A score of zero denotes an equal number of each comment type was made.

improvement in written arguments.

Finally, second to Kevin only, Tanner was less biased in his gathering practices than his peers, and especially when it mattered most in Unit 2. Like Kevin, Tanner was a consistently balanced evaluator and hypothesis tester for whom biased codes were rarely assigned. His balanced testing skill peaked in an outlier high among participants during a crucial period, and he showed consistent improvement in balanced generating with his bias score in this criterion dropping to 0 after the first interview and his arguments becoming increasingly adapted for his readers.

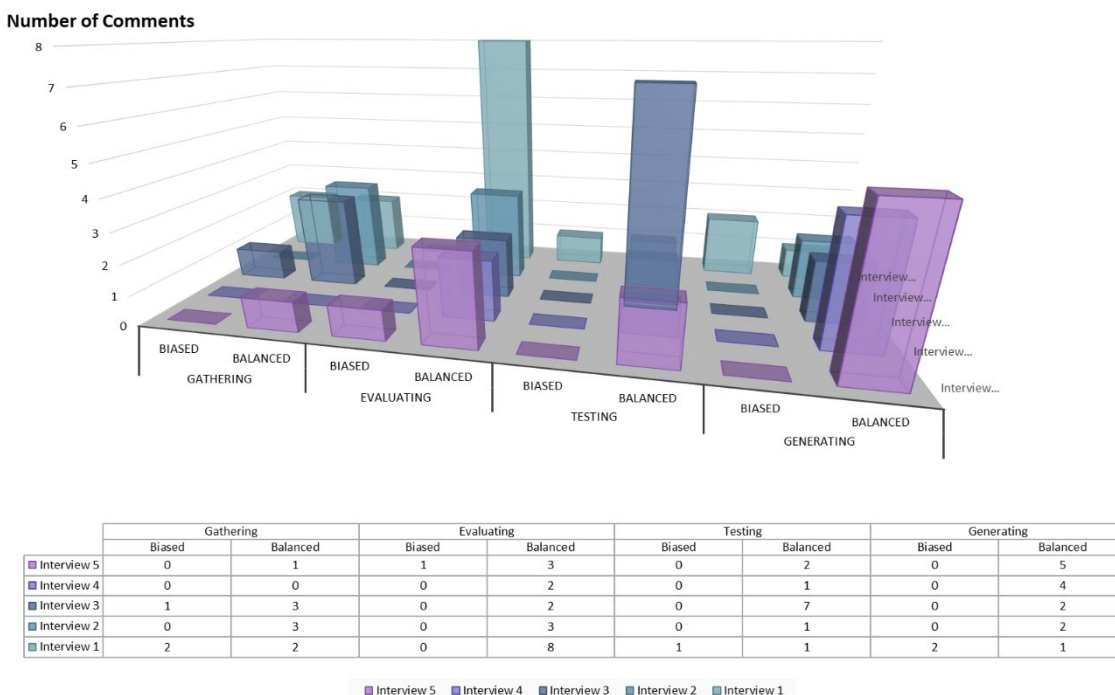
Unit One

In many ways, Tanner's case demonstrates how a changed mental model of argument, toward greater rhetorical awareness and increased use of genre norms, can be a

major factor in myside bias reduction when a writer already has strong critical thinking tools in his toolbox. He interpreted the Brief (first argument) as an opportunity to present a solution to political corruption. He began the course with a predetermined claim: “The U.S. should place term limits on congressmen,” built on evidence he had been collecting for some time (see Figure 38)

Figure 38

Tanner’s Myside Bias Through Interviews by Criterion



Note. This chart depicts how a participant’s myside bias shifted over time by comparing biased to balanced comments during interviews. The number of comments is represented separately for each of the four ways myside bias was operationalized in the study: gathering, evaluating, testing, and generating. The chart should be read from back to front for chronological progression over the semester.

Figure 39 shows that, like the majority of his peers, Tanner’s initial understanding of the notion of a “rhetorical situation” was somewhat lacking. Yet his approach, a

metaphorical representation of his argument, demonstrates his advanced epistemological understanding—particularly regarding the evaluation of solutions for complex problems.

Figure 39

Tanner's Drawing of the Brief Rhetorical Situation



Tanner's idea for his first drawing was spawned by his memory of a recent fishing trip with his grandfather. He explained that the “nasty lake” represents the complex, murky and controversial issue of congressional term limits. Tanner said his Brief argument was represented by the “tiny bit of cleanish water,” depicted as a stream running through the lake, which he hoped would help clarify this issue because “this topic specifically is one that’s stagnate. Like, people do not like to talk about it. People do not talk about it and the people who could do something about it are rather opposed to it.” Importantly, he also noted,

I have no delusions of grandeur that like, my essay...like, whatever I write is

going to like actually change the situation, like, drastically...I also don't have any delusions that like, my thoughts are completely pure and "the truth." Whatever I argue is not going to change someone's mind like (*snaps fingers*) at once. However, I think that this is like an effective metaphor for that...add a little bit of clean water over time, hopefully some of the nasty will flow out later. The more clean water you can add to it, the better.

Tanner understood that time and energy were important parts of complex problem-solving. Furthermore, he valued argument and believed it occurred "because we're diverse...and everyone feels like the hero of their own story, and they're not wrong." Though his goals in argument were persuasive, he possessed both the drive and ability to consider alternate points of view and weigh them carefully.

This is a point worth underscoring in Tanner's case, as it highlights a critical contrast with Chris's case, discussed below. From the very beginning, Tanner saw the gray areas in controversial issues. During this first interview, Tanner remarked,

(*Sigh*) I feel like anytime that someone claims that...(pause)...nationalism is rather akin to racism in my mind. It's the idea that we are better than someone else simply because we were born in a certain place. Um, I feel like it can be a useful thing in a lot of cases. Like, if a nation needs to pull together and like, do a thing, then nationalism is an easy button to push to make that happen. But I feel like it's very, very easy to let that get out of control. Um...and use it as an excuse to hate or disparage or hurt other people.

Tanner's words consistently demonstrated his drive to question—and to listen empathically throughout that questioning process. He was drawn to politics because he valued social justice. This was true even in cases where solutions could result in negative outcomes for himself; at the time Tanner argued for term limits, Utah stood to lose from such a policy with famously senior politician in office.

As a mathematician, Tanner possessed a more sophisticated understanding of quantitative evidence than any other participant. Kevin, Sadie, Abigail, and Chris all

discuss their inherent trust of numbers as more “factual” than other evidence types.

Tanner’s background knowledge in statistics was a critical differentiating factor from other participants because it facilitated his ability to evaluate sources in an epistemologically advanced way. For example, when asked in the first interview whether it was important to him to be free of bias, he responded,

That’s a hard question. I don’t...I want to say yes. I want to say that I don’t want to have bias. But I also know that’s not realistic. I don’t feel like we really can look at an issue and say...like actually spit back the clean, like, unadulterated version of whatever it is. Every person...like...gets filtered through whatever they’ve gone through and I feel like that’s not necessarily a bad thing in all cases. I feel like it’s important that I get all sides of the issue. I feel like rather than trying to find a single source without bias, possibly trying to find things around...like...the actual truth that I’ll get close and then, like from a statistical point of view, take the average of them. Like, finding what’s in the middle.

This raises a crucial point for Tanner’s case: though his goals always included persuasion of his readers, they also always included *the goal (and ability) to determine a consensus among the information* he encountered before claim formulation. He felt “truth” was something for “philosophers or English majors” to discuss, and instead read widely and then attempted to

combine viewpoints and try and figure out what lies in the middle...It’s hard to put a bias on like, a number. You can bias the way that you do the study, which is why it’s again, important that you look at several different studies... it’s important that I get all sides of the issue...but rather than trying to find a single source without bias, trying to find...like...the actual truth, I’ll get close, and then, like from a statistical point of view, take the average of them.

Why, then, was his Brief so one-sided? Time was a factor he mentioned in interviews. Additionally, despite his strengths, Tanner’s Brief was the product of an undeveloped mental script for argument conventions. He and Rachel were the only participants who did not even hint at a single counterargument in the inaugural argument

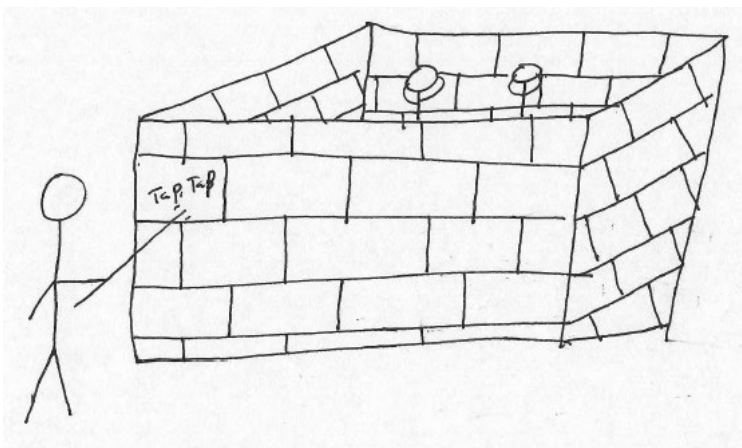
of the course. Like Rachel, his goals discussed in interviews included evidence evaluation, forming a good argument, and persuading others; however, they went beyond hers to include more rhetorically oriented goals such as compromising, finding a middle ground, embracing alternative perspectives, and interestingly—*persuading himself*.

This fact highlights an important problem with his Brief, which he repaired in his Opposition: Tanner's conception of his audience in the first argument was hazy while he wrote. In his second interview, he admitted that his Brief audience was more himself than the Logan City voters he had claimed to write for. This altered radically in the Rogerian argument when Tanner was required to support the view that congressional term limits should not be imposed.

Figure 40 is Tanner's depiction of the new rhetorical context he faced in the Opposition (second) argument. In describing the drawing, he mentioned he was "proud of this one," and that it was his first thought when Rogerian argument was introduced in class. When asked to explain the drawing, Tanner remarked,

Figure 40

Tanner's Drawing of the Opposition Rhetorical Situation



So, here we got this guy right here. And he's outside in this little brick enclosure. And he's got a stick and he's tapping at bricks. Um, and inside is little people who...I don't think of them as malevolent. I think of them as kind of like, sort of stuck in a little world of their own...I feel like a lot of times when you write to like an opposing demographic, like, you think of it as a fight. Um, this is a little bit more like just trying to, just trying to communicate. Just trying to talk. I was like, "Alright, so we're just tapping at bricks." We're trying to, like, find little spaces where we can get in and say, "Listen, we have this shared space."

This focus on talking appealed to Tanner. Like Emily and Kevin, he actively sought and engaged in conversations with those whose opinions he knew might differ from his own. He used dialogue as an evidence gathering and generating strategy throughout the course, and the Opposition assignment provided him the opportunity to do this with someone he cherished (but often found himself in disagreement with): his grandfather. When asked how he searched for evidence to support the Opposition claim, he revealed that his

first thought when I, when we had the Opposition essay, was, "Okay. Grandpa knows what he's talking about with this. He's a political science major. He served as county judge up here in Cache Valley. Um, he's a smart fella." So, I had a good talk with him. And then following that, um, I sort of started formulating the ideas and based upon those I looked for evidence.

Tanner's Opposition argument, like all of his peers' and by assignment—was then almost entirely supportive of a claim he did not actually believe. His conventions scores rose dramatically, even with the persuasion goal, and his audience adaptation score skyrocketed as he incorporated structural, content, and stylistic norms of the Rogerian argument strategy. He noted that my suggestion that students write their audience at the top of their arguments was critical in his drafting and revision processes. It made him realize, "Okay. Well crap, that first paragraph does not work at all. Delete." This shows that Tanner was starting to think more concretely about writing for an actual audience in

this argument.

By the end of Unit 1, Tanner admitted that he still favored his Brief claim; however, he saw the value in the opposing claim because he had reflected on his own methods for formulating the original opinion:

It definitely made me reflect on my opinion quite a bit. I had to do a little bit of metacognitive thinking, I guess. Like, “*Why do I think what I think?*” Um, “Do I just have that opinion because, like, you know...I don’t know, teenage rebellion, I guess? Or is it like, is it an actual, like, fact-based opinion?” I, I drew the conclusion that, like, yeah, it’s fine. It’s a good opinion. But it did make me think about it. It made me, like, evaluate and kind of switched around a little bit.

On the other hand, Tanner’s second interview clarified how his family life had also colored the way he interpreted the purpose of Rogerian argument, which in his case, was still to persuade. He discussed how having five siblings helped him import a former understanding into the writing context:

So, like, convincing people to do things they don’t necessarily want to do involves basically what Rogerian theory is. Is just...not being confrontational about an argument but rather, like, presenting ideas in a straightforward and calm way. And, and trying to build bridges and then use that as leverage, so to speak.

The persuasive goal remained for Tanner. Throughout the course, he perceived the purpose of argument to always include persuasion. This may have been the result of the types of issues he selected, which were always highly controversial. It also may have stemmed from his desire to problem-solve, as it did in Rachel’s case. His attention to evidence evaluation resulted in strong claims with evidence-supported reasons, though the persuasion goal again prevented his inclusion of counterargumentation elements in his Outline later on. Yet the work he performed in Unit 2 provided him with the background knowledge he would need to succeed in Unit 3.

Unit Two

Tanner interpreted the second unit's three assignments exactly as I had hoped students would. He viewed the Stasis assignment as a chance to *find* an argument, the Graphic Organizer as a way to gather, evaluate, and group information, and the Toulmin analysis as a way to critique the argument he had begun to formulate.

When asked about his initial research question regarding whether nuclear energy should be more prevalent in the U.S.A., he remarked, "I honestly felt like, in the Stasis assignment especially, because I didn't necessarily have a claim that I was like, pushing, it was just more of a question." Tanner was *never* coded for persuasion goals in Unit 2; instead, he aimed to evaluate evidence, learn, find a middle ground, embrace alternative perspectives, find credible sources, produce authorial ethos, and form a good argument. His Stasis assignment reflected these goals, as he included thirteen factual questions answered with nine cited sources, six definitional questions with two sources, four cause-effect issues with four sources, resulting in two evaluation issues and two sources. He began with an inquiry rather than claim, as his performance in these assignments and this excerpt from Interview 3 demonstrate:

Interviewer: Was, were you already in favor in nuclear energy coming into the assignment? Coming into the graphic organizer reflection essay?

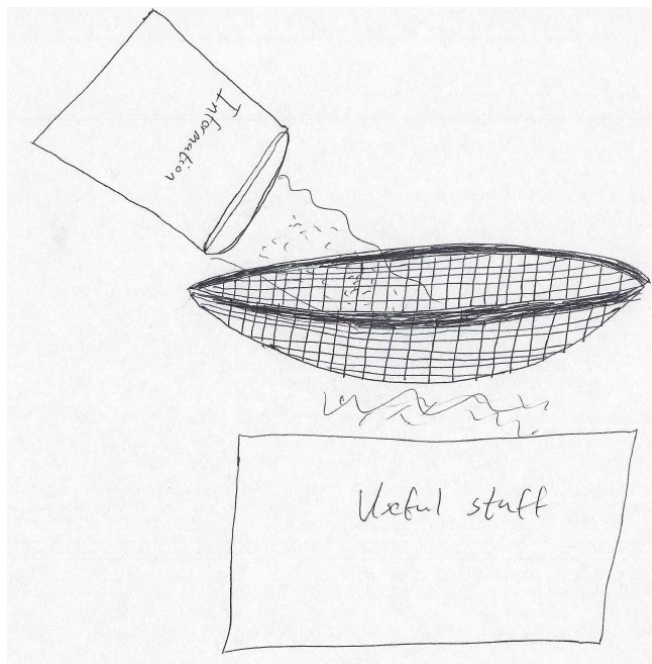
Tanner: I feel like it wasn't necessarily that I was in favor of nuclear energy in and of itself. I feel like I definitely was in favor of lessening our dependence on fossil fuel. I just wasn't...in all honesty the question was one of a fair amount of curiosity. Like, is nuclear energy like, a viable option? Is that one that we just don't use because of public opinion or is one that we don't use because of other reasons? I didn't really know. Um, so, I wouldn't say I was necessarily strongly in favor of nuclear energy. Just more opposed to fossil fuel, which is maybe another thing to reflect on.

This curiosity was a driving force behind the breadth of perspectives he gathered on the subject, one which tends to be a politicized and polarizing issue.

Figure 41 is Tanner's depiction of what this process entailed. He said this drawing was inspired by reading Bradbury's dystopian novel, *Fahrenheit 451*, in junior high, and his memory of the chapter titled "The Sieve and the Sand." This comparison once again highlights Tanner's analytical mind at work, as this section of the novel features the protagonist attempting to read the whole Bible as fast as possible in hopes that some of it will be retained in memory—an apt comparison with Tanner's tasks in this unit.

Figure 41

Tanner's Depiction of His Progress in Unit Two



True to his claims in Unit 1, Tanner was indeed attempting to find a middle ground amidst this controversial issue and evidence indicates he was actively working

against his own potential biases from the start. Of the eleven sources he gathered in his Graphic Organizer assignment, five were primarily against nuclear energy, four included both elements, and two were primarily pro-nuclear energy. He appreciated his peer reviewer's extensive work in providing contradictory sources:

He helped me to find out...I don't know. Like, I was talking about earlier. A center of mass. Um, cause a lot of the more like...if you put all of the arguments, like, on a spectrum, like super pro nuclear and super anti, like, a lot of them would weigh out, just because like, for every guy out there screaming about how good nuclear energy is there's another guy out there screaming it's a bad idea. So, I mean, it was helpful for sure in finding a middle ground. Somewhere that can be like, well, that I can support with the data that I have.

Differently from several of his peers (Abigail and Chris in particular), Tanner described how seeing the complexity of the issue helped him reach toward argument. Like his peers, his navigation through information was time- and energy-consuming. Yet Tanner was far more comfortable with ambiguity than many of his peers and demonstrated sophisticated epistemological beliefs in remarking,

the Graphic Organizer really helped me, like, flush out the argument. Um, it changed a black and white world into more of a gray area. Like, where do we actually draw this line? I felt like a lot of policy decisions like this one are just drawing arbitrary lines. And *the question is like, where is the best spot to put it? Not necessarily where is the right one.* A lot of...a lot of questions that at first seem easy, seem that they'd be black and white, really turn out to be a lot more complicated than we figure that they are at first. Which is why nothing really gets changed. That's the reason why like, we don't just like drop everything and change over to renewable energy. It just doesn't...it's not that easy. Um, those counterarguments are definitely a way to see differing points of view. For my graphic organizer I already had, like, a lot of things on both sides.

This excerpt demonstrates that Tanner did not see the nuclear energy issue in a dichotomous "right/wrong" way; he acknowledged the complexity of the problem. He found the Graphic Organizer to be a useful tool in learning about and sorting through this

complexity because it could function as a kind of information (the sand) storage mechanism, outside of his mind, that his analytical mind (the sieve) could then visit and revisit over time.

This process was not without its hiccups. For example, he noted in his Graphic Organizer reflective essay:

This all seems to be heading in a much more ambiguous direction than I would have originally guessed. Rather than one singular answer, this question seems to be taking on more complexity than the two dimensional yes or no. It seems that in certain cases, in certain localities, nuclear energy would be very appropriate. However, there are also other factors in play that make nuclear power a less efficient option for other places.

This excerpt is a prime example of Tanner's understanding that context played a major role in argument. Yet just a few sentences later in this reflection, contextual elements disappeared as he hypothesized the following argument for analysis in subsequent assignments: "The U.S. should use nuclear power to replace fossil fuels because its environmental impact is far more containable."

This demonstrates an important finding seen in both Tanner's and Kevin's cases: Regardless of the skills or knowledge of the writer, quality written argument construction is a back-and-forth process that requires an enormous amount of time, effort, feedback, reflection, and revision. Additionally, it was evident in Tanner's instant move toward an absolute argument (when asked to forward one) that his mental model of argument still required such a move. While in "musing mode," reflecting on his learning, Tanner's thesis attended to the situational complexities of his topic. In "writing mode," just a few sentences later, it reverted back to its absolutist and dichotomous form.

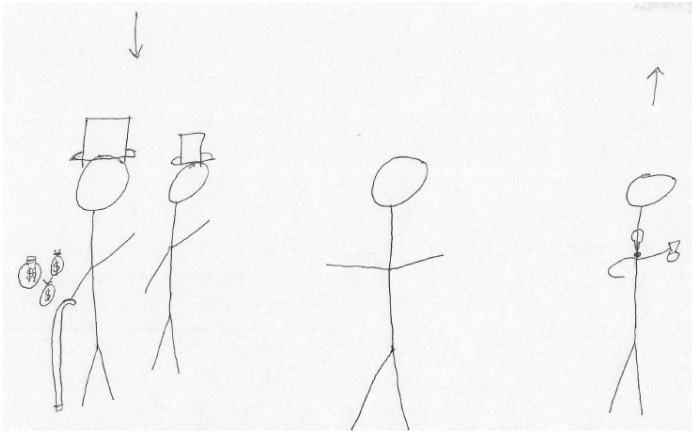
Fortunately, Tanner ended up applying his observation on the important role of

context made in the reflective essay between this point and the beginning of his Toulmin analysis—within the space of just a few days. His reflective evaluation of his own strategies peaked in this unit. In his Toulmin analysis, he pursued further qualification and contextualization of his argument by forwarding the following thesis: “The U.S.A. should increase nuclear energy production because it is cost effective, produces less harmful pollution than fossil fuels, and is versatile enough to produce where renewable energy is unrealistic.” His argument would continue to morph over the final unit, as discussed below.

Before progressing to the final unit, however, two important observations about Tanner’s case should be discussed. The first is how he perceived source credibility. Tanner discussed it often—yet so did some of his more bias-prone peers. What differed in his case was not the *quantity* of mentions, but that Tanner’s understanding of source credibility was *qualitatively* different from most of his peers, and similar to Kevin’s. He repeatedly discussed the issue as one involving his own assessment of *authorial* expertise and agenda. Instead of relying on particular genres (as in Abigail’s or Chris’s cases) or information storage locations (as in Rebecca’s or Chris’s cases) to do the credibility analysis for him, Tanner was more than willing to analyze credibility on his own. Figure 42 demonstrates Tanner in the middle of all the information, with authors on either side of him. Those on his left represent authors with “skin in the business,” as they could make money off the nuclear energy issue, while the right-hand author is a scientist, whose goals in studying the issue, Tanner said, did not include personal gain. Yet even this issue was not as black and white for him as the drawing may indicate, the following

Figure 42

Tanner's Drawing of His Own Bias Negotiation



excerpt highlights Tanner's ability to see source credibility as a matter of degrees on a spectrum rather than a yes/no proposition:

Interviewer: So, the people on the left are just looking for money and that means they're not credible?

Tanner: It means they're *less credible*. It means that they have a lot more to lose if there are...if what they propose doesn't go through.

Thus, Tanner demonstrated that he understood not only the complexity of his topic, but the complexity of source credibility. Instead of searching for *the* solution, he was instead looking to provide *a* solution. He did not see himself as exempt from authorial bias, and questioned his own assumptions in the Toulmin assignment, which he described as less research heavy and more "conceptually heavy." He remarked that it involved "a lot more like, thinking about what I was actually claiming. Um, a lot of thinking about my own opinions, um, about whether or not I had, like, personal bias in it." Additionally, his quantitative literacy, and his mathematician identity, led him to utilize his background knowledge toward this end. He started the process

with like this, nebulous idea and sort of as time goes, as like you find more evidence just flush it out. Um, until eventually you find...I guess it's somewhat similar to the idea of *like, the line of best fit in statistics*. Like, find, finding the, the argument that lies in the middle of all of them, has like, the least error from any given side.

This conception is a rational approach to problem-solving within a broad or general context. But Tanner was not solely numerically obsessed, and his rhetorical awareness was growing at this point; he began to see that narrowing to specific contexts would make the “line of best fit” even more fitting. This realization occurred at least partially through his conversations with others. He described how a peer who reviewed his Toulmin assignment

found an article of how many people have died in coal, um, coal power plant accidents. It's a surprising number, um, that I hadn't considered...nuclear accidents get publicized a lot more cause it's, you know, sensational. It's like, “Oh, it's a nuclear meltdown.” Whereas a coal, coal plant accident isn't called a “meltdown.” It's just a “coal plant accident.”

This attentiveness to the rhetorical implications of language became more and more a feature in Tanner's subsequent arguments in the course, as he began narrowing and localizing his audience, an entity he gave little thought to throughout Unit 2.

Unit Three

Tanner's scores on the Outline raised drastically from his original low in the Brief, equaling Kevin's study-wide high score on the initial argument of the course. What seems to have contributed to his success in the final unit was an investment in dialogical thinking, strong evaluation and reflection skills, and a growing empathy for his readers. Tanner demonstrated a steep progression as he approached the final argument, where he nearly matched Emily's final score, equaled Rachel's, and surpassed Kevin's.

One reason for this improvement was his decision to completely shift audiences: from the U.S. Atomic Energy Commission to Cache County voters, where the university is located, which likely resulted from his growing rhetorical awareness. When asked why switched, he responded that he felt the changed readership was more likely to result in real-world change since a local audience would be more invested. Tanner interpreted this issue as one that did impact him directly, as the air quality in Cache Valley was famously unhealthy. He was concerned about climate change, and since a nuclear reactor facility had just been proposed in a nearby city, he saw the opportunity to frame the issue in a way that would encourage voters to better understand the importance of this local move.

This highlights an important point in Tanner's case—a trend also extending across each of the three cases previously discussed: students who interpreted an issue to be authentic and personally relevant were also those who were more motivated to persist through the difficult tasks of information gathering and evaluating. In interviews, he discussed how much he appreciated that the course offered him the opportunity to be creative in ways he had not yet experienced in an English course, referencing a cartoon parody to highlight the contrast to high school English courses:

I feel like that's a lot how like, how high school classes in general but high school English specifically went. It was like, "Be creative, but be creative this way." Like, "In this little box is where you get to be creative and beyond that that's weird. Don't do that." I feel like this class is actually like, kind of stretching those limits. Like, letting me like, work outside of that. Like, outside the limits.

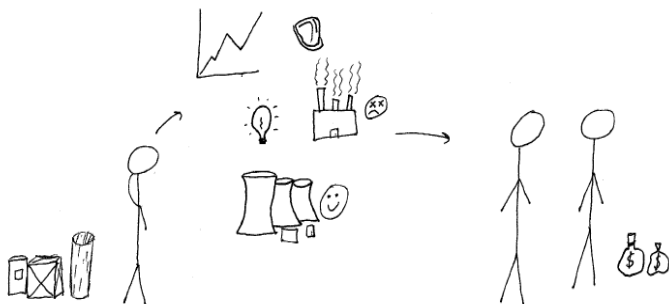
Tanner's shifting perception of what an "English paper" could be—from a stifling and formulaic exercise to an opportunity to find solutions to problems he cared about—seems to have been motivated, in part, by his newly-selected audience. Furthermore, as

his audience shifted towards a narrowed and localized readership, his goals also shifted away from solely persuasive (as they were in Unit 1) to mixed goals, and he became more invested in reaching consensus with his readers. He began talking about “touching” his readers instead of simply “convincing” them, as he did in former interviews. Codes for these three factors (authentic task, audience awareness, and consensus goals) regularly co-occurred in this period, further validating this link. In his final interview, when asked what his goal was in the final argument, he responded it was “Hmm...to persuade people. To persuade, or maybe not to persuade...to present an issue and present like a solution to the issue. Um, and to support it strongly.” His stepping away from persuasion as the sole purpose of argument and toward problem-solving was accompanied by increasingly expressed rhetorical goals, including to compromise, to embrace alternative perspectives, and to communicate with his readers.

Tanner’s description of his drawing in Figure 43 represents his perception of what he needed to do for and say to his readers to accomplish his goals during the construction of his Outline (third) argument. His “voters with their money” are on the right side and

Figure 43

Tanner’s Conception of His Audience and Message



Tanner understands they may resist his proposal, as “they’re a little bit stingy with [their money]. It’s behind them. They do not like to give it away.” His rhetorical awareness here, when compared with some of his earlier drawings, is evident. Tanner is pictured on the left, “with the things that I’ve assembled...the stuff in my proverbial utility belt [I’m using] to get these ideas across.” His continual references to *building* metaphors when discussing writing arguments, combined with his analytical and drafting skills, lend an impression of Tanner’s approach to argument as an architectural one. His goal for the Outline was “putting up a frame to this house I’m building.”

The argument he was building at this time pulled from former learning in the course, including the “tapping at bricks” strategy he mentioned using in the Opposition argument for finding shared spaces with his reader. For example: his argument is pictured in the center—nuclear power plants are drawn with a smiley face and “gross looking smokestacks with a frowny face and dead eyes” represent fossil fuel’s negative outcomes, as his claim promoted nuclear energy as a viable form of alternative energy. However, he also included counterarguments in this drawing, including: a safety helmet, which represented his plan to assuage his readers’ fears about the dangers of nuclear energy, and a stock chart, which represented his plan to address readers’ concerns over the costs involved in conversion. Tanner’s transfer of his learning from one assignment to the next helped him produce more rhetorically aware and less biased arguments.

Another standout reason for Tanner’s reduced myside bias was, like Emily and Kevin, his affinity for dialogue. He raised this issue repeatedly in the final unit by mentioning discussions with peers which helped him consider his topic more roundly:

I feel like it improves the quality of what I'm trying to write. Like, if, if you only talk about the one point of view, and don't even mention what other people, what other sides of the argument are trying to say it kind of, disqualifies your argument on a basis of not having looked at, at the possibilities.

His roommate was also in the course, though not a part of this study. Tanner mentioned how he helped Tanner generate questions as they "bounced ideas off of each other." This kind of reflectively dialogical activity also included empathic listening to alternative opinions, via Tanner's characteristic analytical questioning:

I tried my best to read them from a, uh, I tried to put myself in my audience's shoes, so to speak. Someone who doesn't necessarily know a whole lot about this. Um, I tried to imagine myself as like a, like a person here in Cache County who maybe read my paper and then was like, "Well wait a minute. What about this?" and search on the Internet and found that article. Um, I tried to imagine what, what reactions they would have to that. Um, and then use that to sort of factor in my counterarguments.

This practice resulted in what he felt was a "more nuanced argument than [he] originally imagined." By the time he forwarded his final argument, the thesis had become far more nuanced to appeal to his readership and could no longer be contained in a single sentence. He argued,

The US should implement nuclear power as a sort of sustainable bridge to renewable sources, and as a gap-filler where renewable sources can't supply all that is needed. Nuclear power is far cleaner than fossil fuels, cost effective, and is versatile enough to be used in places where renewables fall short.

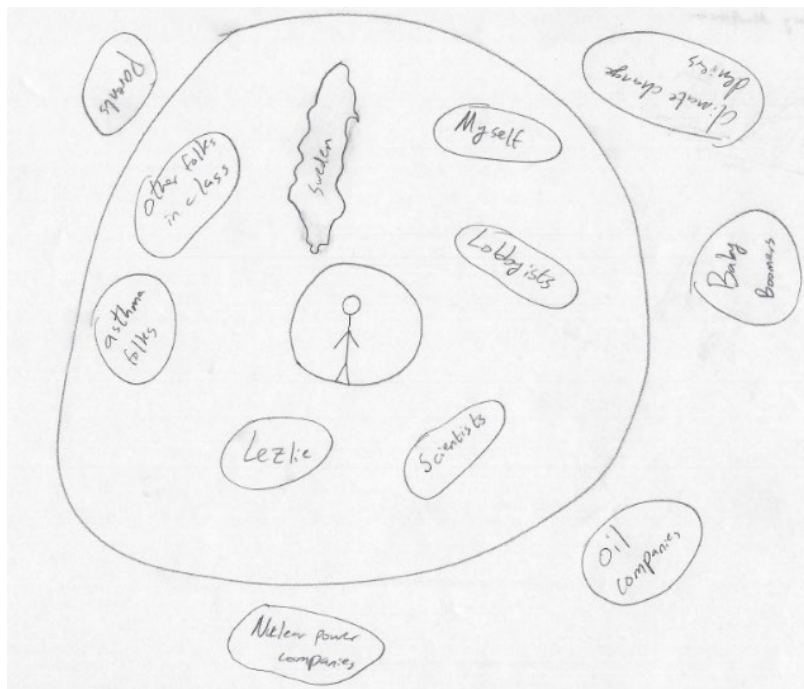
To appeal to this readership, he read his own work aloud and continued to empathically question whether he sounded too "uppity." He based his judgment on his vision of the average Cache County voter, which he analyzed fully through research on Cache County resident demographics. His opening sentence in the final argument demonstrates how well he was now adapting both content and style for his readers by

addressing their fears and potential prejudices right off the bat. “Good news everyone: we won’t run out of fossil fuels anytime soon. With our newest technologies and information, we’re not looking at depletion in our lifetimes. But we’re not out of the woods yet...”

Figure 44 details the voices Tanner felt he did (and did not) listen to throughout the last two units, while constructing his final argument, the PAI. Voices in his inside circle included me, his peer reviewers, people who suffer with health complications related to air quality problems (his asthmatic cousin and himself included), scientists, lobbyists, and nuclear engineers he had met and spoken with during his time in Sweden.

Figure 44

Tanner’s Voices Included and Discarded



Those he did not listen to were people who stood to gain by promoting one course of action or the other, and notably, both: nuclear power companies (pro) and oil companies (con) are both pictured. He lists “parents” and “Baby Boomers” as well, though he did not elaborate on these categories in the interview. Given Sadie’s case study discussed below, Baby Boomers seem to somehow represent “old fashioned thinking” for many of Tanner’s generation.

Most interestingly, in discussing the final group drawn outside his inner circle of voices, he instead told the interviewer, “I don’t know if not listening to them is quite right...” When it came to climate change deniers, Tanner paused long before he shifted to discuss a backpacking trip he’d recently taken with his grandfather, who did not want to discuss climate change as he was not a fan of the subject. Tanner remarked about this discussion and its relevance to his final argument,

With that in mind, I kind of tried to just sort of skirt the issue, knowing that a lot of people would maybe take that first bit and automatically be opposed and all of the sudden I’d writing to a resistant audience. Um, so rather than...I don’t know...why did I chose not to listen to climate change deniers? Maybe that’s a bias in me. They’re wrong. Like there’s definitely something in me that didn’t, like, reacts humanly against that to like...and I sort of chose to negotiate both of those biases by just not, not addressing it.

This raises the troublesomeness involved with *ignoring* evidence. As discussed in Rachel’s case, a certain amount of ignoring is *necessary* in constructing an argument, due to the constraints of any writing situation or rhetorical context. Additionally, ignoring claims not supported by evidence is generally considered wise. Finally, as Tanner discussed here, ignoring can be a sound rhetorical strategy when a writer aims to keep a particular reader listening. Tanner questioned whether not listening to climate changed

deniers was due to his own bias, though given what we know about how he negotiated the practices of gathering, evaluating, testing, and generating, his argument seemed the result of research and reasoning rather than bias. That he questioned (rather than defended) himself is telling when compared to the participants discussed in the next three cases.

Regardless, Tanner showed a strong ability by the end of the course to tailor his writing for his readers. Instead of using the words “climate change,” which might cause his readers to go immediately on the offense, he framed the issue in a way they would relate to: pollution, in the form of terrible air quality, was a persistent problem in Cache Valley. Tanner’s approach, beyond citing evidence, was to effectively appeal to his readers because “to enact change” was his ultimate goal.

Tanner’s final argument was the most rhetorically aware and least biased he wrote during the course. It included more support for counterarguments than any he had formerly written, as opposed to his original argument that included none. He identified as a “good argument writer” at the course outset. By its end, his description of himself as a writer became more nuanced and better captured his analytically recursive process to argument writing: “I tend to jump in and build as I go, then come back after some time to reevaluate it.”

Conclusions

Tanner’s interpretation of himself as a strong argument writer affected his progress in the course positively, though his initial mental model of argument and his consistent persuasion goals initially exacerbated his myside bias. Fortunately for him,

experiences with family and friends before and during the study likely enabled the alteration of his argument schema. These experiences included the evidence-based discussions that were valued by and practiced within his family, as well as his exposure to alternate perspectives while living abroad. His ability to produce arguments that demonstrated increasing rhetorical awareness and decreased myside bias improved over the course of the semester. His quantitative literacy equipped him to evaluate evidence in a more epistemologically mature way than many of his peers, and he was exceptionally strong at hypothesis testing when given the time to read widely and reflect. Tanner actively sought out conversations with those whose views differed from his own and approached research dialogically and open-mindedly, despite the controversial nature of the subjects about which he wrote, this tendency likely helped facilitate his willingness to value the peer reviewing process and to analyze and incorporate even suggestions that opposed his own beliefs. His interpretation of arguments as necessary catalysts for enacting change, coupled with his own desire to engage in political activism, likely contributed to his motivation to work hard to improve his arguments. Key to this progress was his newly forming understanding that written arguments should be tailored to a specific readership, and this knowledge was accompanied by an increase in consensus goals and a clearer picture of his readers. Seeing his audience more clearly coincided with increased textual adaptation, resulting in his production of increasingly balanced arguments over time.

Sadie: The Entrenched Markswoman

I mean in my life...it's so bad. I'm one of those people that like, usually I'll like, try to find things to back up arguments and stuff if it's on my side. Um, that's mostly because I grew up with four older siblings so...you know, we really got to check each other. I'm not about to be the stupid one here. Um, but, like if it's your goal to try to convince someone, you just have to go with the easiest flow of energy. Huh, science. And then if they start to doubt you that's when you like, pull out the big guns and you're like, "Hey." Um, yeah. If you're trying to defend a point you've got to stick with that. Um, which it's funny, because even if you do mention a counterargument you're always, like, shooting them down. Like, you're still biased.

Sadie's case, like many others in the study, highlights the important role that sociocultural experiences play in a writer's approach to argument. She identified as a "very emotional" yet "very sciencey" person who was led to her major (pre-veterinary science) because of the two female role models in her family—her mother studied medical technology and older sister was in PA school. Her major and family background heavily informed her work throughout the course, particularly in the first unit. Tellingly, and like many other participants, her mental model of argument was heavily dependent upon her family culture. As the youngest of five children, "winning" arguments was crucially important to her because her own credibility depended on it. For Sadie, arguments were not viewed as problem-solving activities, metacognitive opportunities, or chances for inquiry and learning; instead, they were seen as required performances of intellect and skill that would eventually be judged by an authority figure. Despite (or perhaps due to) this fact, she demonstrated a strong writing voice and was a proficient writer. Sadie could turn a phrase.

Persuasion (the criterion she saw as necessary for the "win") was always featured

as a primary goal for Sadie, and this may be why it took her longer than many of her peers to produce balanced arguments; however, like both Rachel and Tanner, she adopted argument genre conventions beautifully when specifically cued to do so. Sadie's myside bias was not a matter of ignorance; she called it out even as early as the first interview. She demonstrated less practice with reflective thinking than any student discussed thus far, resisted dialogical interactions with others, and noted, herself, that her "laziness" resulted in a preference for taking the easiest and fastest course of action.

Her objective—to win the argument, regardless of what it was about or with whom it was being held—drove a consistent pattern of consciously choosing to ignore certain data and allow others. Early in the course, her persuasive goals combined with the selection of resistant audiences to produce a mental model of argument that consistently conjured predator (the writer) and prey (the reader) imagery. Metaphors of war and hunting dominate her descriptions of her own thinking and writing strategies, as the introductory excerpt and many others demonstrate.

This tendency changed somewhat in Unit 2 and more so in the final argument, in which her goals became mixed rather than solely persuasive while researching about and writing to her best friend. In Unit 1, parental voices and criticisms drove her defensive stance and strong myside bias. As she shifted toward a cherished reader with whom she empathized, and who she believed held her in a position of equal (or possibly superior) authority, she became increasingly able to acknowledge alternate claims and evidence. Additional time to work incrementally through evidence and write multiple drafts also assisted her open-mindedness and written rhetorical awareness. By the end of the course,

she produced her most balanced argument, equaling Kevin's score.

Myside Bias Shifting

Several data sources indicate that Sadie's myside bias decreased over time. However, this decrease was more pronounced in her written products and statements about her writing than in the survey data, the latter of which demonstrates contradictory evidence both for and against a decrease in myside bias.

As Table 15 shows, Sadie's fact-based argument schema score dropped substantially. This likely reflected her growing understanding that arguments require far more than fact-dropping or formulaic paragraph construction, as her own writing demonstrated an improved ability to adapt her arguments to her reader in structure, content, and style. However, her balanced argument schema also dropped considerably—more than her fact-based score—suggesting a large shift toward one-sided arguments.

Table 15

Sadie's Pre/Post Argument Schema

Test	Fact-based score	Balanced score	Definitions
Pretest	6.1	6.8	"A good hook and introduction. Thesis statement should be placed in the opening paragraph. The following body paragraphs should follow "AEC" format (Assertion, Evidence, and Commentary). Body paragraphs should be very evidence and commentary heavy. The conclusion should not provide new ideas but wrap up the argument neatly by reasserting the argument."
Posttest	5.2	5.2	"Content should be clear and concise, with relevant sources. Structure should be based off of argument style (Rogerian, preaching to the choir, etc.) and should be tailored to your audience."
Shifting	-0.9	-1.6	

This decreased balanced score does not align with other evidence; both her written arguments and interview coding instead demonstrate an increase in her preference for balanced argument. Her fact-based schema decrease was identical to Kevin's and Abigail's. Yet her balanced score decrease was an outlier high among participants—identical to Emily's score increase—and double the size of Chris's decrease.

Sadie's persuasion goals and her desire to finish tasks quickly and easily persisted to the semester's end. Her goals, which included defensive motivations, combined with a general unwillingness to reflect on her own strategies and a lack of interest in dialogical interactions, may have factored into her decreased balanced argument schema. A final possibility lies in the fact that she arrived late to class on the day the final survey was taken and hastily completed it; she may not have read carefully or taken the necessary time to respond.

Sadie's definition of argument at the course outset was the most detailed of any participant. It revolved around conventional norms which were specifically defined in terms of structure and content. Likely learned from her AP English course, she cited an acronym "AEC" as *the* method for developing body paragraphs. Other than the mention of a "good hook," no audience-related elements were present.

Her final definition differs radically from her initial conception. It is far less formulaic and a focus on paragraph prescriptions disappeared. Still, structure remained her primary concern—though it became dependent upon audience. She included clarity and concision as necessary, regardless of audience considerations. This is an improvement upon the first definition in that it predicates structural decisions upon the

reader and is less prescriptive, giving room for the rhetorical situation to play a role. Yet the sources should be “relevant,” she noted, rather than credible or well-supported.

An important factor in Sadie’s case was her own interpretation of herself as a reader and writer, a perception that differed radically from the four cases already discussed while demonstrating strong similarities to Abigail’s and Chris’s cases discussed below. Pre/post surveys asked participants to describe their self-perceptions as non-fiction readers. Sadie initially answered,

I honestly do better with short bursts of information, so any kind of article or book excerpt is good. I can’t handle the on-going drone of a textbook cram session. I don’t mind researching a little bit for an essay. I’d rather be well-versed than wing it.

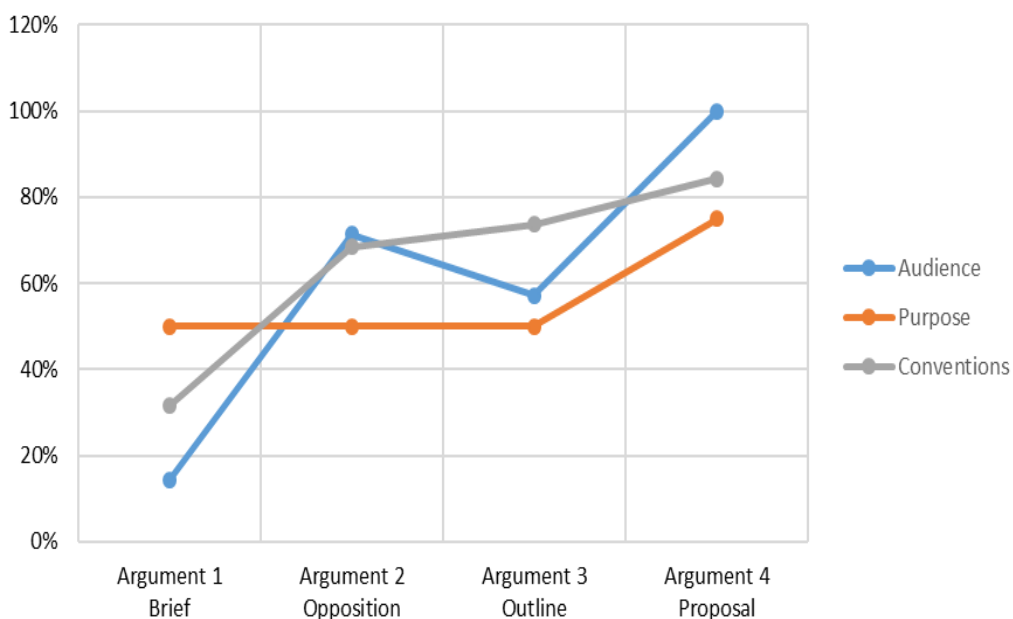
The focus here on time—on efficiency—was a key trend for Sadie, Abigail and Chris, and evidence indicates it affected their reading strategies and habits. The goal of *efficiency* in task completion prevented motivation for and practice of important bias mitigation activities such as dialogical interactions with others and reflection on thinking and writing strategies. This seems to have made balanced gathering, evaluation, testing and generating processes even less likely to occur—even with the aid of peer and teacher feedback. Additionally, her desire to “be well-versed” rather than “wing[ing] it” is another example of the performative, face-saving approach to argument that began at home and remained with her throughout the course. By the end of the semester, Sadie answered the question slightly differently, stating, “I don’t really read a lot of non-fiction, but I am more confident in my ability to find reliable sources to get my news from.” She still didn’t see herself as a non-fiction reader, though she felt more confident by the end of the course in her ability to assess news source credibility.

Sadie had earned the second-fewest college credits, this was her first semester at college, and her last English class was taken in high school. She was newer to academic research writing than all other participants aside from Emily. This did not prevent her confidence in her argument-writing ability, which she based on her AP test results: “I believe I am pretty good. I got a 3 on my AP Lang test...and I also got a 4 on my AP Lit exam. So yeah, I’m at least decent, but comfortable with words.” Understandably then, Sadie consistently interpreted her own writing ability by how authority figures evaluated her *performances*.

Figure 45 shows Sadie’s argument-writing abilities drastically improving over the course of the semester. Her initial argument was scored only slightly higher than Tanner’s study-wide low; the difference was Sadie raised and rebutted a counterargument

Figure 45

Sadie’s Shifting Use of Audience, Purpose, and Conventions Over Time



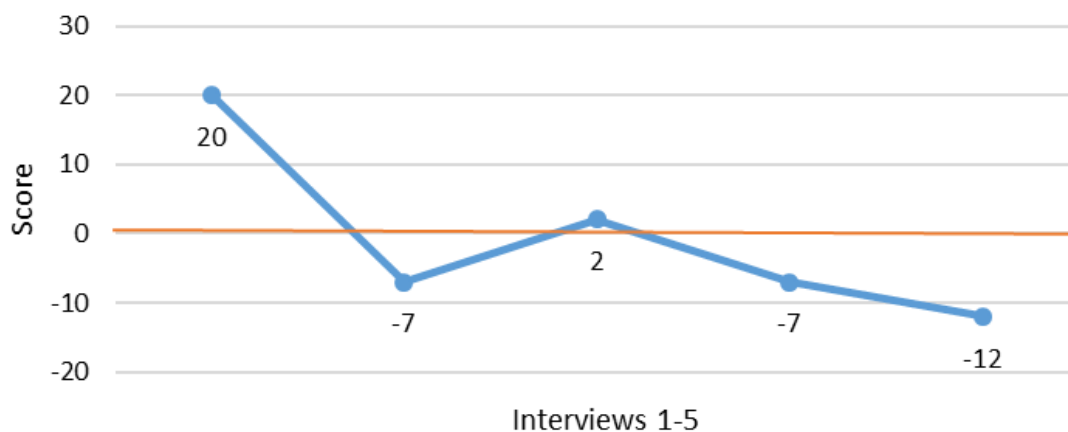
while Tanner focused on claim support and exhibited some audience adaptation. Her purposes remained persuasive until the final argument when they became mixed persuasive/consensus. This was true even in the Opposition argument when she was specifically cued to detach from her actual opinion.

Yet her audience scores rose in that argument, demonstrating her growing ability to adapt her text to her reader. Audience scores dipped back down in her Outline, and then reached a high in her final argument. Finally, she showed consistent improvement in her use of argument conventions over the course of the semester.

A closer look at these elements is provided in Figure 46. Sadie was the only participant who did not analyze or adapt for her audience in the Brief. This aligns with her first described conception of an argument, in which audience elements were all but absent. Her general trend toward balanced argumentation demonstrates a progression-

Figure 46

Sadie's Biased/Balanced Interview Comments



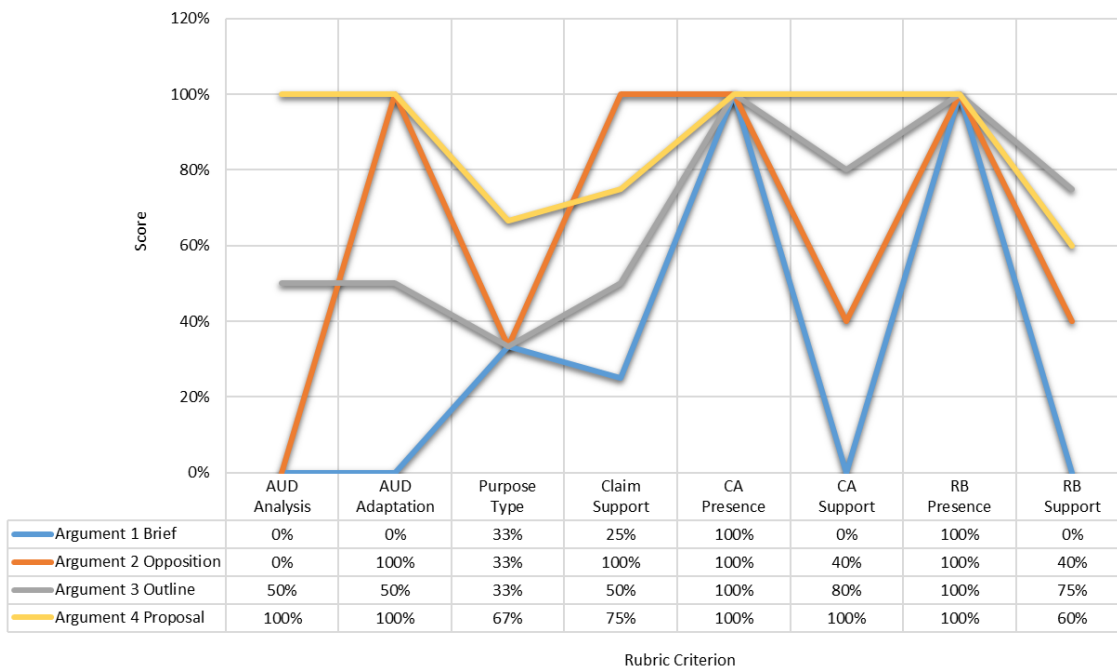
Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus, lower scores demonstrate lower bias. A score of zero denotes an equal number of each comment type was made.

regression pattern between all four arguments in succession regarding claim support and audience adaptation, while she became progressively stronger at supporting her counterarguments and rebuttals, and this trend was mirrored in stronger audience analysis and the slight reduction in persuasion goals by the end of the course.

Sadie’s reduction in myside bias is evidenced through comparisons of biased to balanced statements, beliefs, and behaviors through interviews, as Figure 47 shows. Given the persistence of her persuasion goals throughout the semester, as well as her concern with performativity, it is possible that her discussions of her writing do not necessarily align with her actual views. On the other hand, Sadie had a lot of room for

Figure 47

Sadie’s Myside Bias Shifting and Rhetorical Awareness



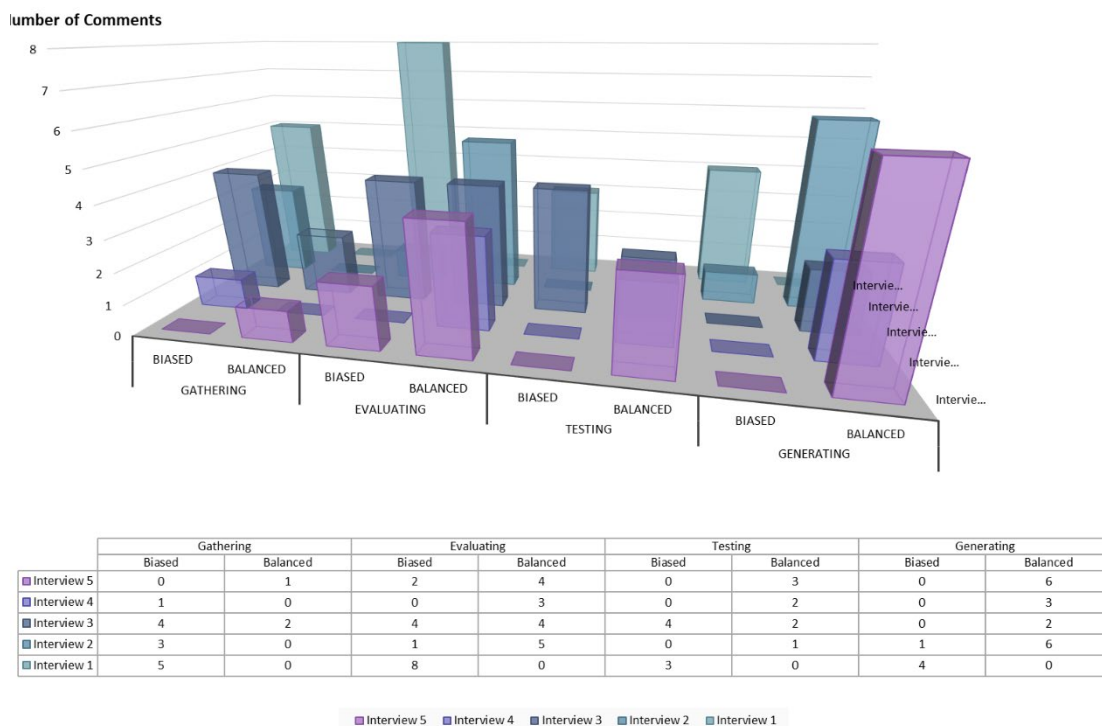
Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student’s attention to alternate perspectives.

growth given her relative inexperience in academic writing and learning to write in a new way is difficult; simultaneous progression/regression is to be expected.

Especially when compared to Kevin’s and Tanner’s interview bias coding patterns, which were rather consistently and heavily weighted toward balance, Sadie’s interview coding suggests a much more persistent struggle with bias. Figure 48 displays a more detailed view of how Sadie negotiated her biases when separated into the four ways in which it was operationalized.

Figure 48

Sadie's Myside Bias Through Interviews by Criterion



Note. This chart depicts how a participant’s myside bias shifted over time by comparing biased to balanced comments during interviews. The number of comments is represented separately for each of the four ways myside bias was operationalized in the study: gathering, evaluating, testing, and generating. The chart should be read from back to front for chronological progression over the semester.

More consistently than for any other participant, Sadie struggled with biased gathering. This struggle tapered off in the final unit but was only minimally countered by balanced gathering during Unit 2, the most heavily gathering- and analysis-oriented assignments. She struggled with evaluating at the outset of the course, showed dramatic improvement during the Opposition, became an equally biased and balanced evaluator during the three assignments of Unit 2, and then showed steady improvement in the final unit of the course. Sadie became a steadily more balanced tester over the course of the semester, though biased testing posed a large problem for her final project.

While Sadie began the course a severely biased generator, she seemed to demonstrate dramatic improvement on that task in second interview, followed by strong and steady improvement throughout the remainder of the course.

Unit One

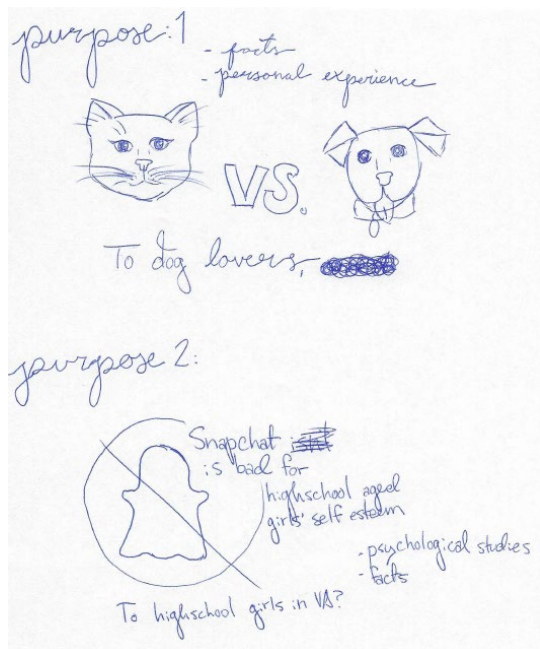
Like Rachel, Sadie interpreted the first argument assignment in the course as a requirement to select and support *one of the two possible sides* of a “topic.” Like Emily, Kevin, and Rachel, she struggled to select an issue that would motivate her enough to write about and an audience she could direct the argument toward. After considering several possibilities, such as why cats are better than dogs or why Snapchat is bad for high school girls’ self-esteem, she decided to take on the generation war she perceived developing in social media. It is important to note that the claim she forwarded in Unit 3 was also mentioned in this first interview as a possibility; *Sadie had thus already developed a claim for her final argument at the outset of the course.*

Figure 49 represents her brainstorm for the Brief before she had drafted her

argument. Recall that this drawing prompt asked students to depict the rhetorical situation they faced in the Brief. In Sadie’s drawing, she equated her “purpose” with her claim; she seemed to see no need to articulate her goal because she interpreted persuasion to be the obvious purpose in argument. Audience elements consisted of naming the group to whom the argument would be addressed, but like all cases formerly discussed, there was no serious attention to the reader and confusion reigned regarding what the prompt was even asking for. For Sadie, like her peers, the “rhetorical situation” consisted of mapping out the argument itself. In the end, Sadie chose to write about neither of these subjects, because she “didn’t really want to seem like [she] was copying” arguments others had already written about. Sadie consistently struggled to overcome her focus on the performative aspect of writing—on *how she was seen*, particularly by authority figures.

Figure 49

Sadie’s Brainstorm for Her Brief Topic



Note that Sadie listed the evidence she would use to support the claim: in the animal case, “facts” and “personal experience,” while the Snapchat argument would be supported by “psychological studies” and again, “facts.” In the first interview, she noted that facts were preferable because, “Who can fight the facts?” Like many of her peers, Sadie was confused throughout the course about how to define what “facts” were, and thus veered toward quantitative evidence as more reliable, remarking that “if you have numbers, like I said, you can’t really...go against that unless you’re like, blind, or just really dumb.” Articles could be useful, but “unless you find like, that one article that’s going to just rocket fire you into another writing dimension that you can totally fight with,” numbers were going to be more convincing. She felt that a key element of convincing others was *sounding* intelligent:

If you’re trying to convince someone of something, of course counterarguments are great, but if you have evidence and you can back it up and make that sound very intelligent, not a lot of people fight you on that. If you’re confident.

With strong persuasion goals, Sadie regularly set out to find and include “facts” that supported her claims and tended to ignore other side evidence. She defined a credible source as those which were “relevant,” and claimed that bias was easiest to identify on political subjects. Sadie clarified that she did not put much time or effort into researching her Brief argument, remarking,

I wasn’t out here, Sherlock Holmes, going through all like, rabbit holes, trying to find my desired thing. Like, I was going to talk about, like, more recreational drugs but obviously, um, Baby Boomers and Millennials are using kind of the same amounts of, like, marijuana, so *that’s not going to help my case* health-wise. But I knew, I was, like, cigarettes are definitely taking a less-popular turn *so we’re going to try to focus more of our evidence on that.*

This comment demonstrates extreme myside bias. When asked why she did not

fully address counterarguments to her Brief claim, she said she responded,

I tried to like, divert from that. So, any kind of, um...negative information I did get I would kind of throw in there, but I would quickly shut it down. I wouldn't let that kind of idea blossom in anyone's mind. Um, *because really our goal is to get the reader to believe*, or at least think more about your topic. And in your hopes, *you're trying to get them to think more about it on your side*.

Sadie's persuasion goals were so strong at the course outset that they had become entrenched as a key part of her mental model of argument. Her claim argued that the millennial generation's healthy lifestyle far surpassed their predecessors, which would enable her generation to lead "exponentially better lives than any other generation before." It was addressed to "the stereotypical Baby Boomer" as a response to Twitter exchanges wherein "you adults joked" about how "us Millennials are narcissistic and lazy." Her complete lack of audience analysis and adaptation was evident in both her defensive tone and illogical content and structure. In the interview and the Brief itself, Sadie sounded angry and disgruntled. She told the interviewer,

[Baby Boomers] have always been the ones that start the fight. You know, "In my day it was harder," or, "You guys are lazy," so it was just kind of a, I might not have started the fight, but I will end it.

She explicitly linked the Brief argument to her endurance of these same criticisms from her own parents, but fascinatingly, also stated that she was not very invested in the topic:

It sounds like I'm like, emotionally invested. I keep getting like, heated. Um, but like, for the most part, um, I mean it's a topic that I like, think about and I'm like, "No. Like, Mom and Dad, we're actually doing like, useful things." But for the most part it was just something that I knew I could write about and that had information health-wise that I could grab and use and produce a topic.

In other words, it was going to be easy to write this paper. Ironically, she

combated her own complaints about her laziness by selecting the easiest path. When asked why she chose this issue, she responded,

It was just the *easiest path of energy* that I knew I could do and that was actually really plausible at the time. I just knew that that was *something that I could just produce*. And I also, like, in all honesty, I didn't know what [Lezlie's] going for.

This highlights three patterns seen across the final three cases—selecting the argumentative path interpreted as the easiest option, feeling strong emotions about an issue one is not necessarily even incredibly invested in, and interpreting argument as a type of performance for an authority figure rather than an authentic way to communicate or solve problems—all seem to increase myside bias.

Sadie made progress in the second argument of the course, which asked her to write in support of the opposite claim from the Brief. Though she did not completely switch opinions, she did note that writing the Opposition helped her see that there were valid points to the opposing claim. Yet her movement away from bias seemed tentative; she contradicted herself regularly within the same interview. For example, she noted that high school did not help her think about her audience, that arguments there had to be more “fact-based.” But she also stated,

It was actually interesting looking at the facts and actually researching it. I was like, “Well, you know we're not invincible...” So, I think it was really good...just interesting to see, like, I don't know. Even though I wasn't technically wrong, I'm not technically right all the time. And maybe it was a little bit humbling.

Another example, Sadie began realizing that writing could be a mechanism for a writer to accomplish real purposes aside from persuasion as she began thinking more about her audience. She admitted she did not think about her readers in the Brief, but that the Opposition “really taught me that you need to know your audience very well, because

if you fashion your work to them, that's half the battle."

The "battle" portion of this realization is important to understanding Sadie's case. Because despite her growing belief in real readers on the other side of her writing, her persuasion goals persisted with a vengeance. For example, she noted,

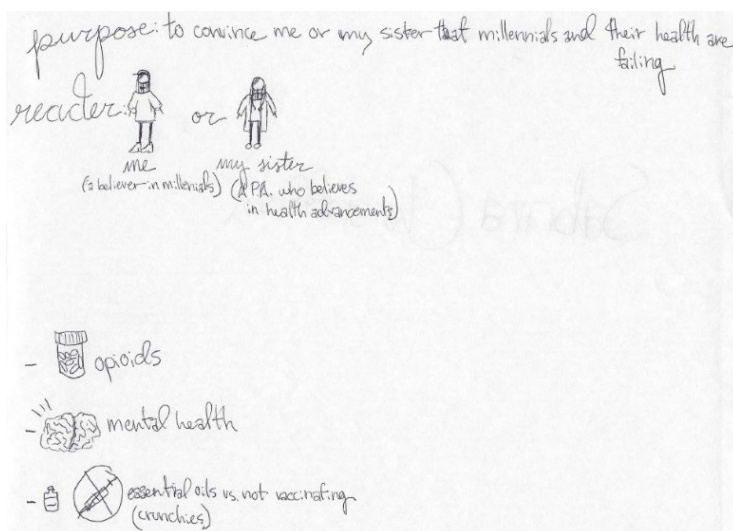
When our professor talked about Rogerian essays...I was thinking, um, not just how to persuade myself but how to persuade one of my best friends. 'Cause I like to think of her like a baby doe a lot of the times and you've got to like, inch towards your ideas...Like, of course I'm going to write to myself, but I've got to use that kind of, like, baby deer, like don't scare them off kind of approach, you know?

Even when writing to herself, as she did in the Opposition essay, Sadie interpreted the context being one of hunter (the writer) and hunted (the reader).

Figure 50 depicts Sadie's understanding of the rhetorical situation she faced in the Opposition. Her argument features prominently, as it did in the Brief; however, she was beginning to conceptualize her reader (which at this point was undecided) and her

Figure 50

Sadie's Drawing of the Opposition Rhetorical Situation



purpose was no longer just repetition of her claim (as it was in the Brief) but included her actual goal.

The goal, “to convince,” with herself as audience, required convincing *herself* in the Opposition argument. Though she was eventually able to critique her original claim, how she described dealing with evidence is key. Not scaring off her reader meant she would need to tread lightly with her claims and evidence, and for Sadie, this required *twisting* evidence:

So, honestly, like, it was nice having almost the same topic but you’ve just got to, like, twist your evidence over. You know? Like, I didn’t... I don’t think I described the, um, the graphs were like, showing different generations. I didn’t describe the Baby Boomers and how they used, like, all kind of drugs. I just talked about the Millennials and their recreational usage. Um, so, like, you know, you’ve just got to, twist your stuff. I feel like such a little malicious person.

Sadie repeatedly referred to herself throughout interviews as “malicious,” “manipulative,” or “corrupt” when asked how she negotiated her arguments. She believed she needed to “hide the complete truth” in order to write an argument, because “you can’t really find it.” For Sadie, arguments were inherently about defending your side while shooting down *the other*. There was not enough time or energy, she felt, to learn about anything—those were not her goals, anyway. English was a “rabbit hole” that one could easily become lost in. Best, she said, to stick with “hard ballin’ numbers” to shake people up. She understood her own preference for feelings, and acknowledged, “I’m just emotional. But like, not in like a bad way. Um, but I just knew, like, with something that I would fight on I had to use stone cold facts, you know?”

But hearing herself say these words out loud, she briefly noted, “Yeah, so here’s like, the truth—but not all of it—in your essays. Which is why you need to see both

sides... What a, what an epiphany.” Moments like these occurred occasionally through Sadie’s interviews. But by the end of Unit 2, she communicated that she felt *writing* was inherently untrustable because taking a side, which was utterly necessary, made a *writer* inherently untrustable.

Sadie was perennially confused by questions regarding her evidence evaluation strategies. She deflected from them, or simply described the evidence she found. She made many comments that demonstrated the performativity of writing. This was clear in her discussion of her primary goal for the Opposition argument: *to get an A*. With similar diction choices but a very different message, she noted at the end of the second interview: “I mean obviously I don’t want bias. Of course, you want to go for the hero with the truth and the absolute freedom. Um, but it depends on what you’re doing.” What Sadie was doing was attempting to persuade—regardless of the subject or context—in pursuit of “sounding intelligent” and getting a good grade.

But Sadie appreciated the way the course was structured, and felt she was “actually learning something.” She contrasted her experiences in English 2010 with past English courses, remarking,

So, I knew how to write, obviously. Eighth grade let me tell...let me tell you that that woman did not teach us anything. We read a lot of books...Um, didn’t learn, like, writing techniques and it was just very, like, yeah. We didn’t really write in the class. It was just very reading based. Um, and then English, Honors English 9, I learned how to write a thesis statement. And just, like, the basic outline of an essay. I was like, “Okay, I can do that.” English 10, like you know you fine tune it but I didn’t really, like learn anything. And then 11, that was language for us. It was looking at other arguments people make and how they make their arguments. So, it was like, useful but, I mean, I knew how to piece apart someone else’s essay. Maybe not write my own. Um, and then 12 was really good. We read some good books. But, again like, you don’t...I can’t put a name...I didn’t know about a Rogerian argument until literally this year, two weeks ago. So, I just feel like if I

had known I would have been able to write better essays than just the cookie cutter persuasive essay. You know?

By the end of Unit 1, Sadie felt she'd learned more about argumentation, and this learning was evident in her stronger Opposition essay. She was digging out of the trenches of the five-paragraph essay. But persuasion goals remained, and this heavily impacted the way she operated in the remainder of the course.

Unit Two

A critical part of Sadie's case was that she did not interpret or negotiate course assignments in Unit 2 like any of the other participants mentioned thus far. The Stasis, Graphic Organizer, and Toulmin assignments were all designed to help students begin with a question rather than a claim, conduct research on that question, then hypothesize and then analyze a claim derived from that research. These assignments were in place to help students engage in inquiry by exploring, evaluating, and analyzing evidence before they were asked to outline or draft their final arguments in Unit 3. Instead, Sadie began with a claim regarding her best friend, Abby, which remained unsubstantially altered throughout Unit 2: "Abby should attend Utah State because it has a more affordable education than Virginia Tech, more opportunities for growth to stand out to graduate school, and solidified social support systems." She mentioned this argument throughout the first two interviews, and her claim remained relatively unchanged throughout the final two units, making her the most biased hypothesis tester of the study.

Fascinatingly, she was not closed off to alternate perspectives nor was she ignorant of otherside evidence for her preferred claim. Sadie's Stasis assignment was

well done, including fourteen answered factual questions, seventeen defined terms, six cause-effect issues, three evaluation issues, and eight sources. Kevin completed her peer review thoroughly, telling her that he had convinced two of his own friends to attend USU, and wishing her luck (which likely did not help mitigate her persuasion goals).

It is important to note that, despite her stated preference for facts, those facts she listed in the Stasis assignment indicated Abby should probably *not* move to USU; it would be cheaper for her to remain at Virginia Tech, she could complete an online degree from USU while remaining in Virginia, and further, “a big move like that could break [Abby] mentally” because of her anxiety coupled with having lived in the same place her whole life. In other words, Sadie did not wholly gather, evaluate, hypothesize, or generate in a biased way; Figure 48 clarifies this fact for Interview 3, where both biased and balanced practices occurred. But these facts still did not prevent her from pursuing her cherished claim, as they may have countered her desire to persuade Abby to move closer to her.

Sadie’s goals in the third interview included defending herself and supporting a pre-existing claim. Yet new goals also began forming, including learning and responding to an authentic situation. Combatting counterarguments was mentioned, but so was compromising. At this point, she was attempting to persuade Abby—but also herself—pulling from her experience in the Opposition argument. With a new and well-known reader, she dropped empathic hints and expressed her desire to argue what was in her friend’s best interests; however, her desire to accomplish a particular purpose—to get her best friend to come live with her—trumped other goals throughout Unit 2.

This was evidenced in the way Sadie discussed her third drawing, which represented the progress she had made thus far in the research process (see Figure 51). Like Tanner, Sadie used a building metaphor to discuss her argument formulation—but a critical difference here was timing. Tanner did not attempt to build an argument until far later in his research process.

Figure 51

Sadie's Depiction of her Progress in Unit Two



Because Sadie already knew what she wanted to claim, she approached argument construction much earlier than her peers. She remarked, “I knew I had, like, the resources that I wanted to. And like the evidence. But I didn’t know how to string it together best. Um, but we’re learning.” The interviewer then asked her why putting it together was difficult, and she responded,

Um, well...if you can’t tell, I love to go on tangents and I can talk and talk and talk but actually stringing a good argument together.... I know I can make a good argument from this but actually doing it in such a way that would be impactful to her and, um, actually persuade her is another story. I mean, you can have good

arguments and like a crap vocabulary and who's going to trust you? Not hating on people without an education but, you know? If you don't sound the part and you're not confident in your words, then who's going to really believe you?

Clearly, Sadie interpreted this argument, like those she wrote before it, as a performance in which she would have to demonstrate her wordsmithing prowess and a confident persona if she expected to persuade her reader, even when that was her best friend.

This posturing was a regular protocol for Sadie, and it led to her unjustified dismissals of astute peer review feedback (from Rachel and others) that would have made her thinking and writing stronger. She did not struggle much in determining source credibility, because her persuasion goal led to cherry-picking sources that she felt were credible simply because they hailed from the university's online databases. Even biased sources could be consulted when they were "useful."

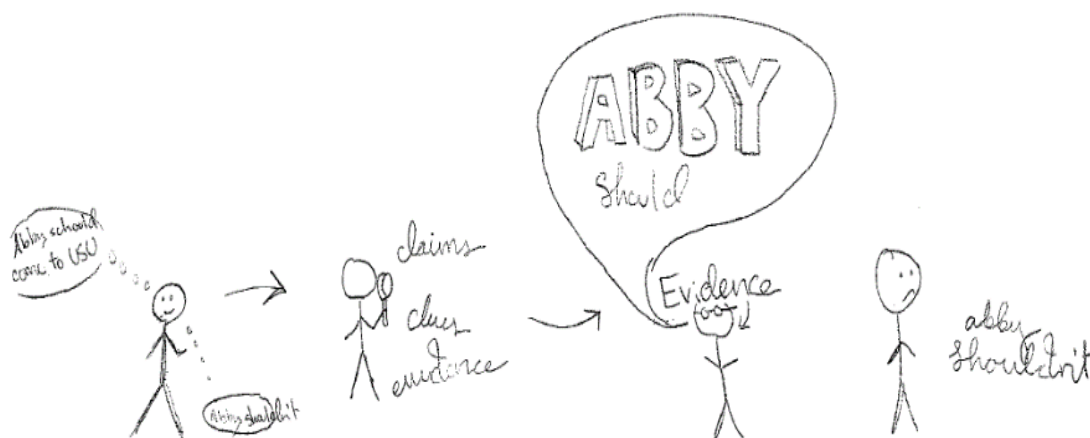
Not only did Sadie not care much for dialogical interactions with her peers, but her efficiency goal also likely prevented her from metacognitive reflection regarding her own processes. In fact, she neglected to submit the reflective essay portion of the Graphic Organizer assignment at all until I requested it from her in my feedback on her work.

She resubmitted her Graphic Organizer, with the peer review and reflective essay, four days after I requested it. It lacked actual reflection; instead, like her interviews, she mainly summarized the argument she planned to write. It began, "The facts definitely show an upper hand for Utah State..." and proceeded to back the claim. An important inclusion, however, was her mention of counterarguments—yet she quickly moved to rebut them with the support of "many studies' conclusions."

Figure 52 is Sadie's drawing of how she negotiated her own biases during Unit 2. An inner conflict began evidencing itself in this drawing. It depicts shifting between moments of confidence and hesitance in her claim, and this was also evidenced in her description of the drawing.

Figure 52

Sadie's Drawing of her Own Bias Negotiation



Sadie: You see that my dialogue here, “Abby should go to USU,” is higher than the other ‘cause that’s what I believed, believe. And here is my search. My sick looking magnifying glass and lack of a face. Um, looking for those clues, evidence, and those claims. And then this is my interpretation of evidence. It has glasses. ‘Cause I’m stereotypical. Um, and it’s saying that Abby should. But then like, here I am, wondering if she really should or not. And even though it makes me sad, because even though they don’t necessarily like, like they don’t like the fact that Abby shouldn’t. But like, the evidence states that it should. Yeah. This is like, a little depressing. Oh my gosh. Look at me getting deep.

Interviewer: So, it seems to me that, um, a part of that you have like a hang up with yourself on um, like, is this the best decision for her.

Sadie: Um, well, I mean, I am obviously coming at this with like, a very loving perspective. But like, in the beginning, I’m being selfish.

‘Cause like, why do I want her to come to Utah State? I want her to be with me. Obviously, I want her to be happy but like, I miss her and, um, then like, looking at the evidence I go from a state of selfishness to actually thinking about the impacts of that kind of a decision. And I start to vacillate more. And now I’m wondering if I’m trusting my feelings because obviously, I’m biased or was or still am, maybe. Um, but like, I’m just leaning between this “I definitely want the best for her” and “Sometimes you’ve got to make sacrifices so your friends can be successful.” But I’m also lazy, so I’m gonna fight that she should.

This exchange was the first glimpse of Sadie’s persuasion goals faltering as she began to question her own biases. Still, her Toulmin assignment did not show evidence of her allowing logic to alter her claim. Many of her warrants remained unsupported, and she delayed resubmitting a stronger version (with evidence and plans for concessions) until after the final argument had also already been submitted. Persuasion goals remained strong at the end of Unit 2 and were exacerbated by her desire to get things done in an efficient way, or as she herself noted, because she was “lazy.” Sadie interpreted Toulmin, not as a tool to analyze and revise her own hypothesized claim, but as an opportunity to get inside the mind of her opponent:

If you mention [counterarguments] before they even think about it then like, you’re already ahead of the game. Cause like I said, they can’t really fight you if you’re already aware of other things. Which is why it’s so good to be knowledgeable on both sides of an argument. Wow. Epiphanies. Yeah. Does that make sense?

Acknowledging alternate perspectives and evidence became important to Sadie at this point—not because of the ethical value of doing so or any learning advantage—but because it might help her win the “fight.” She assessed warrants and brainstormed counterarguments because it allowed her to anticipate and circumnavigate any potential minefields that would keep her from achieving this ultimate goal. Her misinterpretation

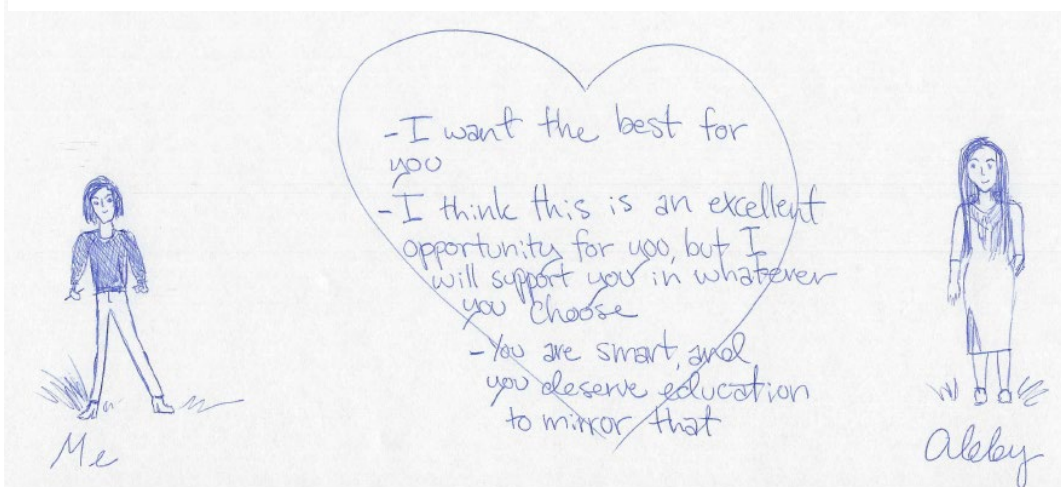
of Rogerian argument as a tool for better understanding “the enemy” in order to defeat her became clear in the third interview, as she began arming herself for the final battle.

Unit Three

Sadie’s Outline was constructed in a classical argument form. Though it was not well-adapted to her reader, it was generally well-supported. Her persuasion goals were evident through lapses in content and structure, even while she included three reasons to back the claim, raised (and rebutted) three counterarguments, and included ten sources.

Her persuasive goals held strong throughout the Outline assignment. Noticeable changes were beginning to occur, however, including her discussion of additional purposes such as forming a good thesis, being audience aware, compromising, and empathic attention to her reader in her fourth interview. Most importantly, a new purpose seemed to motivate her: to respond to an authentic situation. Sadie had always been thinking *about* Abby, but now, as she began seeing Abby as the person on the other end of her writing, she began considering the issue through Abby’s eyes. Coding for imagined and real conversations with the reader began appearing in her fourth interview.

Figure 53 depicts this new goal and how Sadie approached it. At face value, the drawing communicates a message of support and belief in her reader, encapsulated in love. While these were all likely legitimate feelings, persuasion still bubbled under the surface and was evident in the personal agenda behind her final bullet point: “...you deserve education to mirror [your intelligence],” as if such an education could only be

Figure 53*Sadie's Conception of her Audience and Message*

gained at USU. At this point, Sadie truly wanted the best for her closest friend and planned to support “whatever she will eventually choose.” Yet her continued perception of her own argument writing strategies as manipulative is evident in her description of the drawing:

If you, I don’t want to like, say fight people. But if you *kill people with kindness*, you know, that’s way better than trying to like pull her and be like, “Oh no. Like, this...” I don’t know. You’ve got to do it with a sense of like, love and caring. Or else people won’t be receptive.

This interview signaled a shift in Sadie’s perception of how to write for a specific reader. It demonstrated her rhetorical awareness growing in the final unit. For example, in the third interview, she noted that “facts” would be most useful with Abby; here, she shifted toward pathos appeals, signaling greater audience awareness, which was likely facilitated through her own genuine feelings for Abby.

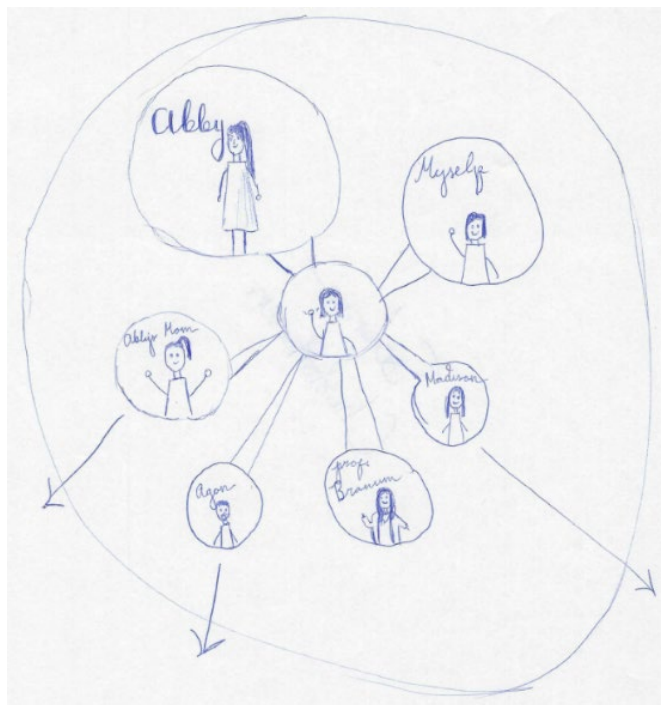
Still, evidence was utilized according to its “relevance,” a governing principle

across many participants, and one highly vulnerable to myside bias when applied without concrete policies regarding how relevance will be determined. This held true for Sadie, as she brushed off her interview with Abby's mother (who was not in favor of the move to Utah since Abby struggled with anxiety) because "she wasn't paying for Abby's education." In fact, mental gymnastics were continually performed to help Sadie maintain her claim. Astoundingly, in her zeal to argue why Abby's boyfriend should not have been a factor in Abby's school decision, she told the interviewer that she hated it when people

follow their boyfriends or girlfriends to school or something. I mean, the likelihood, I'm sorry. Sorry to anyone in this world who does that. That's fine. You do you, sis. Um, but especially here, like, the likelihood of them staying together is...I don't know, you know?

Yet when he pointed out that her entire argument was based on asking Abby to follow *her* to school, she responded with an aside: "Dang. I should have seen that coming." She was clearly upset with herself for not anticipating this logical problem, and her speech became hesitant and jumbled as she simply reasserted all the reasons backing her claim: "Like, I said, this is her and her choice. And that's eventually just what I leave it up to."

Sadie's internal struggle with those supportive and critical of her claim is further evident in Figure 54, which depicts the voices she listened to and ignored in her final project. Crucially important to understanding her case is the prominence of her reader, Abby, whom she mentioned she should have drawn even larger. She drew herself in the middle, but somewhat tellingly twice, suggesting both the importance of her own voice in her process as well as the conversations she was beginning to entertain with a version of herself that was not wholly committed to her claim.

Figure 54*Sadie's Voices Included and Discarded*

I am also pictured as a voice Sadie listened to, in line with her concern over authoritative voices and the performative aspect of her writing. Fascinatingly, and differently than all other participants, Sadie did not draw any voices outside the circle, indicating she felt she listened to all voices during this process. Instead, those voices who had suggested counterarguments were drawn inside the circle with arrows pushing them out of it. These voices include those of Abby's mom and boyfriend and the peer reviewer for Sadie's Outline, whom she ignored because she did not feel she knew her audience well enough to weigh in on the matter, "and as for like contradicting, um, evidence, you know, I have it in my arsenal and I'm ready to work with it." When asked why she drew the voices this way, she responded that the voices she arrowed outside of the circle were

“irrelevant” because they “had no say” in Abby’s decision. Yet Sadie believed *she* did—and more than anyone else. As previously mentioned, “relevance” appeared as a persistent and vague source inclusion/exclusion rule for several participants across cases.

In my feedback to Sadie, I mentioned that her structure was not Rogerian, though she had stated it was, and discussed my concerns with her unequal comparisons of the two schools. She mentioned the latter problem in the fifth interview, which occurred right after she visited me to discuss it and told the interviewer that talking with me helped her realize she was relying on a false analogy in her comparisons of the costs associated between the two schools—something she planned to (and did) repair in her final paper. Sadie was more amenable to my feedback than that of her peers, again highlighting her deference to authority rather than interest in peer dialogues. The reason might be Sadie’s desire for efficiency and clarity, as she noted in the final interview that she “might just be a little bit lazy. Um, I think that’s a lot of it for me. I’m so scatterbrained in a lot of ways that I need something to be concrete.” Sadie shied away from ambiguity, yet she persisted in addressing the problems with evidence to produce a strong final argument.

Her motivation to do so likely derived from her desire to perform well in the assignment—to earn an A grade. But another important motivating factor in her case was her perception that this argument mattered in the real world: she planned to give it to Abby in hopes of persuading her to consider moving to Utah. Like Emily, Kevin, Rachel, and Tanner—this was more than an assignment because it held the potential for real-world change. Sadie’s case demonstrates that authentic problems can motivate students, including those who may prefer efficiency, hold persuasion goals, or have

underdeveloped epistemologies, to overcome their biases. A curriculum based in rhetorical awareness will not prevent myside bias unless the student is willing to do the required work; motivation to effect real change with issues a writer sees as personally relevant can increase the likelihood that they will see this work as worth it.

Another critical factor in Sadie’s eventual reduction in myside bias was her conscious decision to *avoid* addressing a controversial issue in the final project—instead opting for one that, despite her own biases, could be acceptable despite its real-world outcome. A learning goal, though not as prevalently evidenced as in formerly discussed cases, was clearly present in Sadie’s case. This is clear in her description of her “topic” selection. She had originally considered writing about the horses and the meat industry,

but I know that’s sometimes a controversial issue. And I didn’t want to get super-heated ‘cause I knew if I get heated, I’d get really biased and like, forget all the facts and stuff. Um, and there’s nothing I love more than talking about my friends, so, I knew that this would be beneficial for me. ‘Cause even if she didn’t choose Utah State, like, in the end, like, I’d still have like closure and I’d still understand. But then it also, like, offers a view and I knew I wouldn’t get like, super-heated because of course I’m here to understand. Um, so it was something I could kind of stay out of but also like, integrate myself in.

In contrast with previous cases in which claims were largely born of the information gathering, evaluating, and testing assignments in Unit 2, Sadie’s claim was in place as early as the second week of the course. Yet, her learning goal and empathy for her reader led her to remain open to claim revision well into the final weeks of the course. For example, though Sadie maintained her claim in the final argument, she also mentioned she was “vacillating between whether or not she should go to Utah State” even as late as in the final interview. Further, she noted that she genuinely felt the evidence suggested Abby’s moving to USU “could work,” and she utilized qualifiers and

concessions to mitigate presenting the issue as the only possible course of action. In other words, her final argument was balanced; it acknowledged and respected alternate perspectives while it still maintained her claim.

This was largely the result of Sadie's growing rhetorical awareness and her ability to apply that awareness to her written argument during the final unit. Her final argument displayed a significantly altered structure as she revised the classical argument form into a Rogerian structure. Her compromise goals ramped up in the final interview and this is evident in the final argument as well. She began the paper by building bridges of shared values with her reader, raised counterarguments which she conceded and refuted appropriately, and appealed to Abby using a balanced "rhetorical plate," as she called it, by utilizing logos, ethos, and pathos to achieve her goals. She told the interviewer,

I feel like if I presented, "Here's why I'm trying to get like, convince you," that's already going to like, shut her down from, you know, being, not moldable, but like...persuaded. Like, my introduction was originally going to be talking about Spring Break and how I'm really excited for her to come out and we can do all these things. Um, and I just realized, she'd be receptive to it, but it wouldn't be personal enough. Which is why I went with this old texting conversation, like, asking her these kind of rhetorical questions like, "Do you remember when you said this to me? Like, do you still want this?" Because I feel like that opening is going to show her that I'm not trying to be selfish and I'm not doing this for my own reasons but that I genuinely want her to be happy.

Conclusions

Sadie interpreted herself as a highly emotional but science-focused person, and her emotions eventually took a back seat to logic in her final argument. She came to the course interpreting her readers as prey, whom she, as predator, would need to capture. This defensive, even aggressive stance remained with her throughout the majority of the

course. By the end of the course, though her persuasion goals remained, consensus goals began to play a role. A desire to connect with her reader, a real person she valued highly, accompanied a pronounced shift in Sadie's increased ability to see through her reader's lenses and adapt the content, structure, and style of her writing accordingly. In the final interview, she felt "so much better than before" and was "a lot more comfortable with it, but honestly," she knew she still had "a lot to learn in terms of writing." Sadie's perceived growth as an argument writer was warranted; she produced one of the most biased arguments at the outset of the course yet produced one of the most balanced by its end. Yet, Sadie consistently interpreted her teacher in an evaluative role, peer feedback as generally unhelpful, and arguments as a performance of her intellect in which she needed to "win." Her use of conventions remained formulaic for much of the course but developed radically in the final unit, when she began interpreting her argument as a conversation with her cherished friend. Sadie's rhetorical awareness grew significantly in the final argument, though this growth occurred near the very end of the course. This was when she began to value acknowledgement of alternative perspectives, concessions, Rogerian argument, counterargument evidence, audience awareness and adaptation, and tone. Similarly, reflection about her strategies was slim until the final unit, and this reflection was evidenced in both her writing and discussions of her writing in interviews. She appreciated the peer review of her final argument and consulted it in her revisions, just as she utilized my own feedback to rethink her work. By the end of the course, despite Sadie's decreased balanced schema score on the survey instrument, her balance outweighed her biases in all four myside bias categories during interviews and she also

produced her most balanced argument. Her performance orientation to argument, her interpretation of argument as a battle, and her persistent persuasion goals may explain the mixed findings regarding her overall myside bias shifting.

Abigail: The Perfectionistic Procrastinator

I am a perfectionist...I don't like to do things halfway...I didn't have enough time or make enough time for things, um, as they came. And because I knew, um, that the revision policy was in place, um, I was more willing to do that. Like if those had been, uh, really hard deadlines, then I would have, um, probably made a little bit more time. Um, but I also know that I would have been just so unsatisfied with my work because I know that I didn't have enough time to actually, um, do this well, um, at that time, at that point in the semester...Um, and so, that was actually just a huge benefit, made me so much, um, I don't know, more calm and content with whatever I did, um, because I knew that I could put more effort into it later when I had the time and the effort and the energy.

Abigail's case provides a fascinating glimpse into a bright young woman's struggle to forge a new identity for herself as she transitioned into adulthood. She never spoke about her family life, but interviews clarified how profoundly the culture in which she was raised, the relationships she had formed during adolescence, and her past educational experiences had framed her approach to writing arguments. Though she possessed many strengths, and though her trajectory through Unit 1 indicated she was on a promising path away from myside bias, two of her personal traits halted that progress and caused an eventual slide back into more familiar territory.

The first of these traits was a long-engrained perfectionism. This quality did not arise from nowhere; in fact, her final project was addressed to the people she felt had nurtured her drive to do everything perfectly. She called this group "products of Utah County." Abigail was raised there, in the seat of Brigham Young University and the area

within the state most well-known for its cultural and political conservatism, even among Utahans. In her own words, she described Utah County residents by noting that they

are perfectionistic, don't admit flaws, followers of a rigid code no matter what, culture- and not religious-based, wealthy parents with high expectations, kids who over perform, everyone needs to fit a mold, can't be radical, pressure on outward appearances and Instagram to match this high-achieving, cookie-cutter mold.

Abigail acknowledged her perfectionistic streak but was attempting to work against it by the time the course began. What made this difficult for her was a habit I've often seen accompanying perfectionism in students: procrastination. Abigail struggled to complete her coursework on time, and combined with a few other factors, this was a major reason her final argument score dropped below her third argument's score (the only participant whose final argument did so). Her interviews are littered with paradox as she alternately revealed ideal and real versions of herself, performatively, a quality her case shares with Sadie's.

Even more than Sadie, though, Abigail interpreted the writing of arguments as a performance for a teacher. In stark contrast to Sadie, the written performance was not at all one she wanted to enact. She interpreted the sole purpose of what she called "persuasive essays" as, logically enough, persuasion—or what she termed "inflicting your opinion" on others. But rather ironically, as she was a marketing major, Abigail was radically *opposed to persuasion* for her own ethical reasons. She saw persuasion as "dangerous," as truly unwarranted in every conceivable situation, and a goal that was "pretty much never okay." She interpreted the goal of attempting to change others' opinions as a power move made by the aggressive "Big Guy" against the passive "Little

Guy” and counted herself among the latter group. She was desperately averse to others’ attempts to control her; her high school boyfriend and best friend had taken this approach with her, and she resented it. She thus began the study semester highly resistant to what she anticipated would be the course’s content, as is evidenced by her first argument in which she boldly argued against the writing of arguments!

Related to this combination of traits was her personal struggle with mental illness, an issue she chose to address tangentially in her final argument. There is no doubt it played a major role in her progression over the semester. Her final paper argued for incorporating mindfulness tactics “for when life is good, and when it isn’t,” a title she gave the paper that she said reflected her own exact feelings over the course of the semester. She spoke of her own habit of starting off each semester with happy energy but losing steam and strength by mid-terms. Though she definitely grew over the course of the semester and did reduce her myside bias, her inability to manage her time resulted in only minimal progress by the semester’s end.

Myside Bias Shifting

Several data sources indicate that Abigail’s myside bias decreased over time. A decrease is evident in her written products, though her progress slid somewhat in her final argument, unlike all other participants’. Her interview coding follows a similar trend, while her survey scores demonstrate mixed results.

As Table 16 shows, Abigail’s fact-based argument schema dropped significantly, by the same margin as did Kevin’s and Sadie’s. However, like Rachel, her balanced argument schema also dropped somewhat (in fact, identically to Rachel’s score decrease).

This may suggest a similar movement away from acknowledging multiple perspectives in written argument. Abigail consistently adopted persuasive goals (despite her revulsion for them), was unwilling to engage in dialogical interactions with her sources and peers and demonstrated minimal reflection throughout Units Two and Three.

Table 16

Abigail's Pre/Post Argument Schema

Test	Fact-based score	Balanced score	Definitions
Pretest	6.2	6.8	“Introduction, argument 1, 2, 3 (as needed), rebuttal, conclusion.”
Posttest	5.3	6.4	“Depends on who your audience is! Do they want facts or anecdotes? Do they need coaxing or just reassurance? It’s ALL ABOUT THE AUDIENCE.”
Shifting	-0.9	-0.4	

Abigail’s definition of argument at the outset of the course, like many of her peers’, was highly formulaic and indicative of the five-paragraph essay. She did mention a rebuttal, which implies the raising of a counterargument; she and Kevin were the only participants whose schema at the outset of the course included the necessity of alternate perspective incorporation. By the end of the course, like most of her peers, audience awareness had become an important part of her definition of argument.

Another shared feature between Abigail and Sadie (and Chris) that bore out in both surveys and interviews was a relative lack of motivation for nonfiction reading. When self-assessing their reading skills, all three pointed to efficiency or speed as a primary reading goal. Abigail remarked, “I’m pretty good at picking up on hints about what will be in the source,” indicating a sort of surface-level investment in attending to

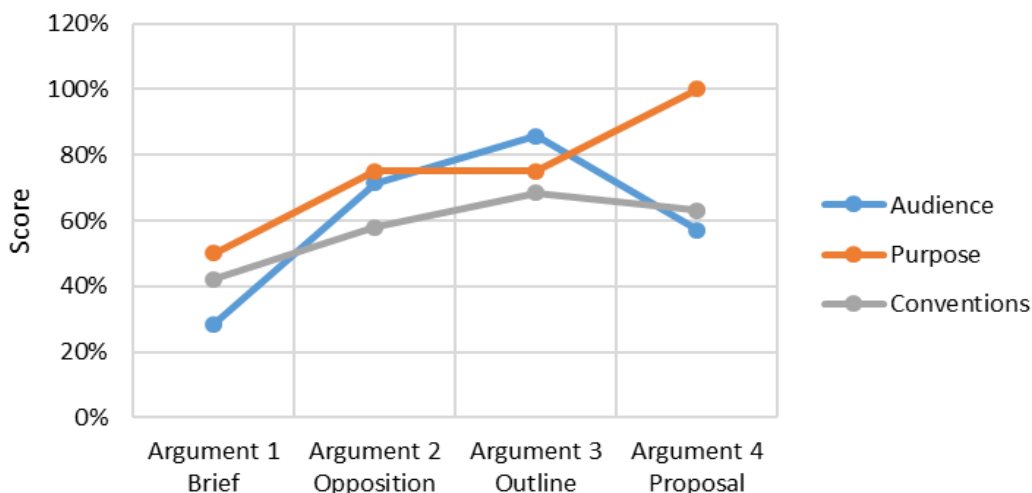
evidence, which she did admit later on was her primary reading strategy.

On the writerly self-efficacy front, Abigail remarked initially, “I’m a good writer, but get frustrated with mandated essay form,” a subject she actually made the focus of her Brief. By the end of the semester, she felt “Stronger now! I used to hate the traditional structure of argument essays, but now I understand that it’s not an arbitrary template, it increases readability & persuasiveness.” She felt she had grown as a writer but had not fully understood course outcomes regarding the variety of structural and goal options for writing an argument.

Abigail’s written argument scores in Figure 55 show a similar trajectory to those of her peers—until the final argument, where hers alone dropped. Her audience scores rose as her goals moved toward consensus, except for that final argument, when her time management problems caught up with her and the consensus goals could not make up for problems with conventions. Her ability to wield argument conventions follows this same

Figure 55

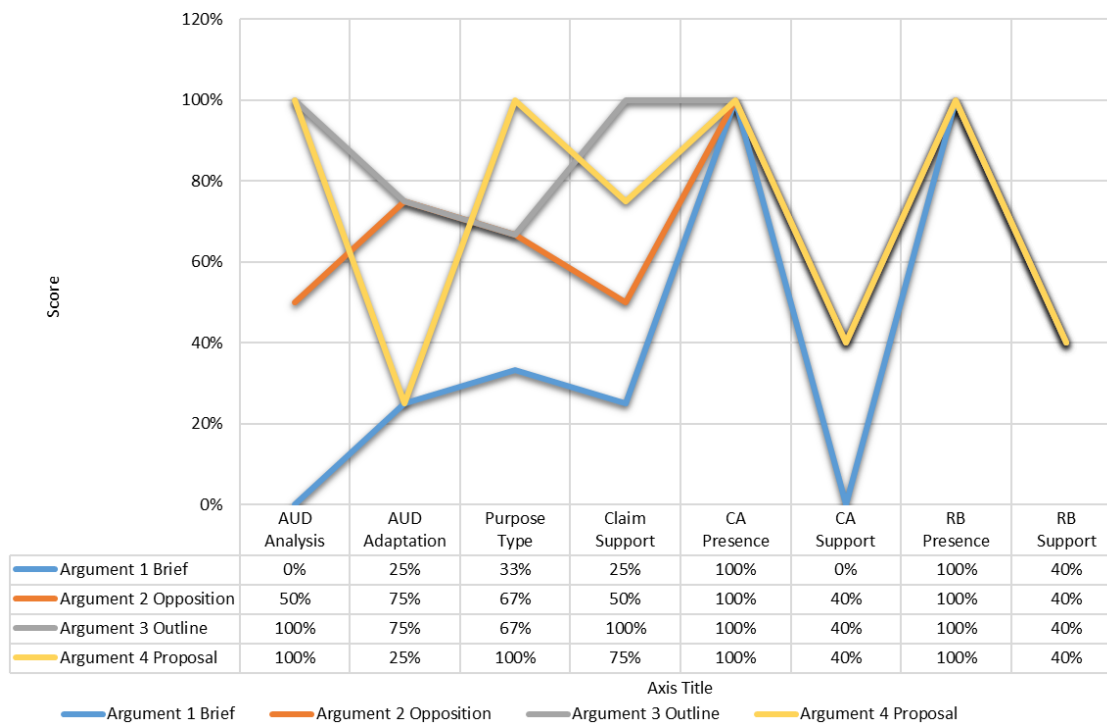
Abigail’s Shifting Use of Audience, Purpose, and Conventions Over Time



trend; however, her growth in conventions was nowhere near as pronounced as Emily's, Rachel's, Tanner's, or Sadie's (recall that Kevin's were strong from the start). Instead, she and Chris showed a similarly narrow growth in this area. Primary reasons for this were likely related to her inability to self-regulate (which she did not fully reveal until Interview 5), her interpretation of argument writing as a performance for a teacher rather than an authentic problem-solving or communication activity, the strength of her mental model of argument as a monological and power-hungry enterprise, and her resistance to feedback and reflection.

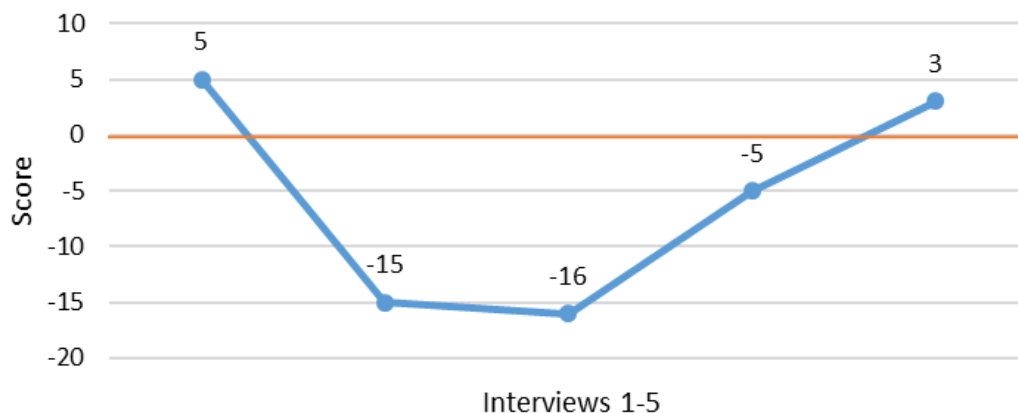
Figure 56 provides a closer look at Abigail's written argument scores over time and displays her increasing ability to support her own claim. But the most striking feature of this detailed look at Abigail's written work in the course is its relative stability over time in counterargument presence and support, and rebuttal presence and support. More than any other participant, Abigail's skills in this area lacked growth.

She supported counterarguments more strongly when specifically cued to do so in the Opposition; these abilities remained stable outside of that assignment. However, her goals became progressively more consensus-oriented: from persuasive, to mixed, to full consensus goals over time. Emily, Kevin, and Abigail were the only participants to articulate (in writing) solely consensus goals in the PAI (final) argument. More compromise-oriented purposes were accompanied by greater audience analysis and adaptation until that final argument, where the domino effect of her self-regulation problems took its toll.

Figure 56*Abigail's Myside Bias Shifting and Rhetorical Awareness*

Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student's attention to alternate perspectives.

Abigail's myside bias in her discussions of her writing demonstrates a unique trajectory not replicated by any other participant. Figure 57 captures her bias dropping radically from the Brief to the Opposition. It then seemingly dropped even further in Unit 2, after which it steadily crept back up to nearly the same level it was at the beginning of the semester by its end. It was not until Interview 5 that Abigail admitted how out of control her time management problems had become, but she noted that they began around the time of Interview 3, in Unit 2, during the heaviest information gathering, evaluating, and hypothesis testing assignments of the course. It was then that she discussed her

Figure 57*Abigail's Biased/Balanced Interview Comments*

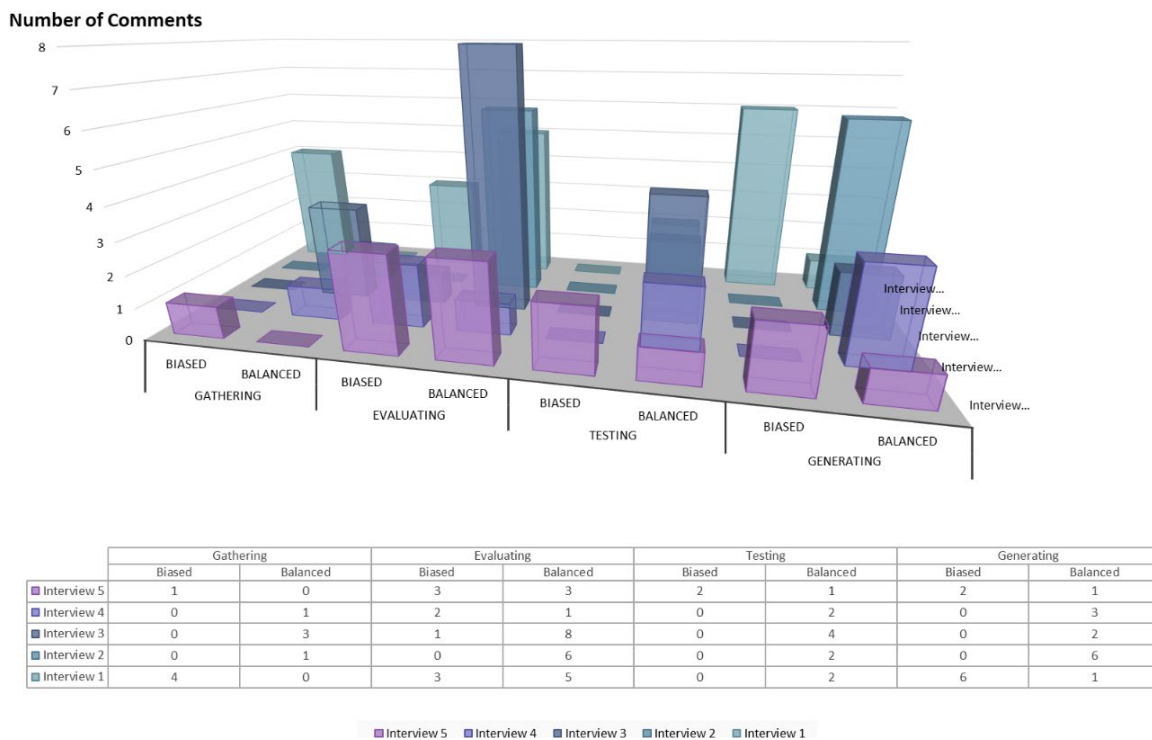
Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus, lower scores demonstrate lower bias. A score of zero denotes an equal number of each comment type was made.

pattern: start a new semester optimistic, happy, and energetic—but around mid-terms, feel your emotions sink along with assignment follow-through.

Figure 58 provides a view of Abigail's myside bias organized by category. She began the course gathering in a very biased way, became much more balanced in the Unit 2 assignments—and left the course gathering in a slightly biased (and not at all balanced) way. Abigail was a strong evaluator at the start of the course, where her balance far outweighed her bias. Her balanced evaluation continually grew, peaking in Unit 2 (though her third interview is littered with performativity and what appears to be a strong into balanced generating in the assignments following Unit 2—nor to balanced testing. On the testing front, though Abigail appears to have been rarely troubled, it became evident by Interview 5 that much of her work in Units Two and Three were spent simply social desirability bias). At any rate, any balanced evaluation did not necessarily translate

Figure 58

Abigail's Myside Bias Through Interviews



Note. This chart depicts how a participant’s myside bias shifted over time by comparing biased to balanced comments during interviews. The number of comments is represented separately for each of the four ways myside bias was operationalized in the study: gathering, evaluating, testing, and generating. The chart should be read from back to front for chronological progression over the semester.

validating a pre-existing claim. Her PAI hypothesis was born of a claim that remained fairly stable from the outset of Unit 2. Finally, her discussions of her writing in interviews demonstrated that she reached her balanced generation peak in the Opposition. While she experienced growth over time, her balanced generating codes during interviews remained nearly identical, though considerably less biased, when comparing the first and last arguments of the course.

Unit One

Abigail interpreted the Brief as a required performance that she planned to speak out against. To my utter delight, Abigail used the Brief to argue nothing less than why writing arguments was an “exercise in futility.” The primary reason she used to support this claim was that arguments were spawned by a singular available goal: persuasion. “Persuasive essays are too strongly built for black-and-white opinion, which are as moronic as they are oxymoronic,” she wrote. Her claim appeared as several claims strewn throughout the argument, tied together with the overall theme (and tone, as is evident above) of “persuasive essays are stupid.” Taken as a whole, she argued that written arguments were not an effective way to debate, persuade, learn, or communicate.

Abigail initially believed that written arguments were static, inauthentic monologues. She wrote, “‘Argument’ implies tension and conflict while ‘discussion’ indicates open communication for the sake of learning and understanding.” For Abigail, “a very strict speaker-listener dynamic is set” in a written argument that prevented dialogue, and this resulted in soap-box preaching that declared something “with fervor and then eradicate[s] all points of argument,” restricting learning. Her description of the requisite features of argument adopted Sadie’s militaristic diction: arguments must “shoot holes” in others’ arguments—though unlike Sadie, she critiqued rather than embraced this practice.

Abigail’s case highlights a pattern across several cases: the pedagogical approach to argumentative writing during primary and secondary schools seems to entrench students in the belief that persuasion is the only available purpose for writing arguments

(or “persuasive essays,” as Abigail and others called them). It also leads to a formulaic application of conventions and a focus on academic performativity over learning and problem-solving. Abigail recounted her past experiences with arguments:

So like in high school...but then even earlier than that. I think the first persuasive essay I was ever taught to write was probably like, in fourth grade and I remember the example that we went over in class for like, three days, was, “What type of chocolate is better?” Whether it was like milk or dark or white. And...even as like, a 9-year-old I was like, “This is so dumb. Like why can’t people just like whatever chocolate they like and like, we can argue about it, but we don’t have to write an essay about it...and try and convince other people.”

Students like Abigail see the absurdity underscoring such a process—and this interpretation of argument writing can incite frustration, fear, and disengagement—which can then set off a negative chain reaction where these feelings lead directly to reduced motivation, which in turn can precipitate an efficiency goal to just get the task over with, get the grade, and move on. Such an entrenched understanding of argument was a major feature of Abigail’s case (recall its presence in Sadie’s as well). Interestingly, it was one she called out herself, reflectively and presciently, in remarking,

I feel like we’ve been taught...like, it’s hard because we’ve all written essays before. And so, no matter what Lezlie says, we still have these *years of prior experience* that are affecting what our expectation of the assignment is. And so, I feel like a lot of it, just growing up, was very aggressive. You know, like, you need to state your opinion and why you’re right and why they’re wrong.

Sadie’s response to her own entrenched mental model of argument was to arm herself and head into battle. Abigail responded in a radically different way because of very negative past experiences with friends who had controlled her through persuasive tactics. She revealed in the first interview,

There have been stages of my life where I’ve been like, really close with people who are kind of controlling. Um, and so like, in order to...like once I came out of

those situations in order to like, overcompensate I kind of...I just don't try to affect anyone else's opinions on anything.

Her resistance to persuasion goals was even more pronounced than this excerpt reveals. Abigail admitted she did not like being wrong and was frustrated in “having to decide whether I'm right or wrong and whether other people are right or wrong.”

Furthermore, she interpreted persuasion itself as dangerous, violent, and inauthentic, at one point, remarking,

Um, but to actually expect to change somebody's mind on something, um, I don't think that ever happens peacefully or um...with enough consent. Like, I feel like it's kind of a begrudged thing to be like, “Yeah, I guess you're right.”

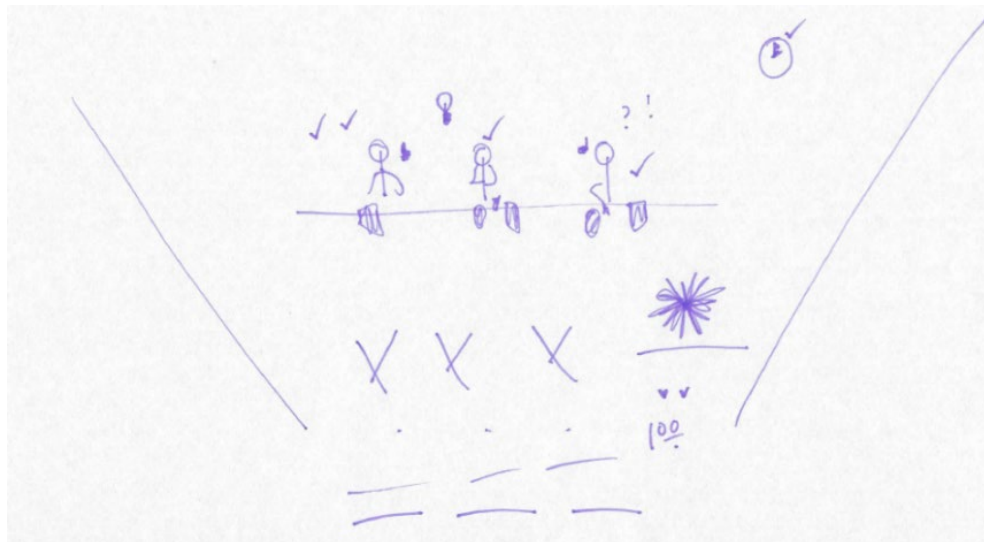
Abigail, 18 years old at this time, mentioned in this first interview that she was recently married (recalling subjects addressed in Emily's and Kevin's cases.) Her focus in her personal life was on the importance of communication. In her mind, persuasion was antithetical to this purpose.

Figure 59 is Abigail's drawing of the rhetorical situation she faced in the Brief (first) argument. Because she “had no idea” what she would be writing about at this point, she instead imagined herself presenting the argument. The three figures in the center represent “these scary, intimidating, smart people” who are evaluating her presentation. As the clock ticks, she eventually succeeds in winning their approval and is feeling “100%” as a result.

This impending sense of being judged overshadowed Abigail's thinking and she argued it was unequal and based upon a performance. Her first interview contained the fewest audience codes of any participant and indicated she viewed me as her sole behavior within the course: the power dynamic she interpreted between herself and those

Figure 59

Abigail's Drawing of the Brief Rhetorical Situation



audience and counterarguments as personal attacks.

This makes sense in light of her admission that she was purposefully attempting to practice assertiveness in the Brief. She called her writing “sassy,” remarking,

I was just kind of frustrated. So, I was like, “You know what, I don’t like this. And that’s the one thing that I’m feeling really passionate about right now. And so, I’m going to write about it.” So, kind of it was, um...yeah. It was kind of, like, *pent up, mild rage* where I was like, “You know what, whatever. I don’t care. I don’t like this very much so I’m going to tell you that I don’t like it.”

This seems to utterly contradict her “passive” self-description, yet it demonstrates her enacting what she felt arguments must enact. Furthermore, she noted that the classroom environment provided a safe psychological space where she felt enabled to speak out:

Like if I had...even...even last semester I wouldn’t have, um...been so blatantly contrary to the purpose. Um, just because I...like, I don’t like conflict and I...I don’t know, like to respect my teachers...[but] it was a safe place [where] I could

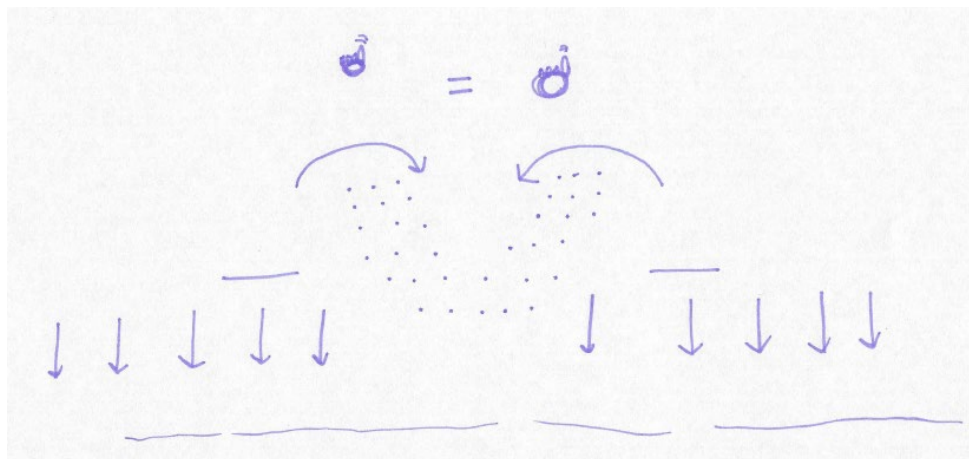
disagree, I could dissent, um, and it wouldn't, um...like I...it wouldn't really offend anybody. That safety, that knowledge was definitely instrumental.

A final note about Abigail's negotiation of the Brief: she consistently contradicted herself when it came to evidence evaluation. Her perfectionism was evident in her idealist answers about how conclusions should be reached, and she articulated these processes (data trends, her own impressive quantitative literacy) well. When asked how she navigated evidence evaluation for the Brief, she first responded with ideal versions of her relatively strong understanding of research methods and statistics. For example, she remarked that "a lot of it was, um, just behavioral science studies type of thing," deflected to a discussion of why empirical studies are the best evidence type, and waded into methodological weeds: "the more people you have involved the smaller the sample error is and um...just the more accurate...the more accurately you can predict trends, right?" Yet when pressed, she eventually admitted that she took an emotional and time-constrained approach, "Yeah, it wasn't, um...it wasn't very...uh...in-depth. It was...embarrassingly late on the night it was due...it wasn't like a solid, 'I'm going to research these, you know, ten studies.'" As she moved into the Opposition assignment, things changed dramatically.

Figure 60 highlights how Abigail's perception of the rhetorical situation altered in the second argument. For context, she addressed the Opposition to herself as audience, and her goals immediately shifted to mixed consensus/persuasive. The drawing really level-headed and low-key," as represented by the arrows pointing downwards. The two hand signals are "sign language for 'understand,'" and the two versions of herself are represents a discussion in which two sides of Abigail were "really down to earth, just

Figure 60

Abigail's Drawing of the Opposition Rhetorical Situation



working to understand one another. She described the drawing by stating,

dot dot dot, speech bubbles kind of thing, um, that become closer and closer and closer. And it doesn't come down to like, just three, it's five. So instead of six down into three it's just six into five. And so, anyway. So just that, that slight merge. That more of an understanding than a, than a convincing thing.

Choosing herself as an audience for the Brief may have removed the threat of danger, judgment, and persuasion, and her goals shifted toward learning and opinion formulation according to Interview 2 coding. Abigail described this argument as “fun” to write because it created the chance for her to talk to herself. Like Kevin and Rachel, she constructed the argument in letter form, officially addressing herself at its outset.

With the threat of being controlled removed, Abigail's rhetorical awareness raised significantly. She was able to compromise and consider alternative points of view because she was engaged in a “weird time warp,” writing from herself to herself, which freed her from persuasion goals. In the Brief, she had felt pressed to “appease Lezlie's

professorship” and admitted to worrying about how she would be evaluated because she was “being a punk” and felt “crunched for time” as she tried to select a claim. The Opposition’s specific cueing to detach from one claim and instead support another made the argument “easy” to write. Importantly, this was heavily related to the fact that Rogerian argument validated her original opinion,

This concept of Rogerian argument...just really resonates with me. Like, yes. Tell people that you understand what they’re feeling and, and then continue to input your opinion. And so, like, I really loved that, and I hadn’t heard of Rogerian, um, argument by name before. But, um, I felt like, um, as we were discussing it in class, I was like, “Yes! This is the point I was trying to make with my [Brief] paper!”

This gleeful feeling was not present upon receiving the assignment, however. But by turning to dialogues in class, in interviews, and in her reading, Abigail came to see the entire issue of argument writing differently. She remarked,

Initially all of us in the class were like, “How are we supposed to...like, we’re so opinionated on this one thing. How are we supposed to go and see the other side?” Um, but having the discussion, um, both [in interviews] and with Lezlie just a little bit helped a lot. ‘Cause I had already started that process and had already, not just myself trying to see through my holes but to, to hear what the holes were from other people.

This points to another important factor in Abigail’s case: When writing the Opposition argument, Abigail was able to engage in dialogues with others and reflect on her own thinking and writing strategies. She noted that she gave the least weight to my feedback, though she considered it, because she perceived me as biased about the value of argument writing. Most helpful to her was an article she found that discussed the value of argument writing residing in the process, rather than the product:

Because the author didn’t say anything, really, about what you do with an essay after you’re done with it. Um, and where your persuasive essay is meant to be

sent. Um, but all growing up, as we're taught about persuasive essays, it's, you know, you're gonna write down what you think and try and convince other people. Because that's the goal, right? You want to be convincing...and so I feel like that emphasis, um, just kind of stuck around, um, subconsciously. And so that, um, frustrated me and made me think that the goal was the result...It was, we're writing this essay and it will be a deliverable. Um, and so then once I found that journal article, I understood that it wasn't...that *it didn't have to be about the deliverable*. Um, that it was about, um, everything up until that point.

Furthermore, she began mentioning in Interview 2 that her conversations with the interviewer were causing her to reflect on her own thoughts and behaviors. She was able to adapt for her reader (i.e., herself) in content, source selection and structure as she easily empathized with this point of view and now could locate a way to connect. This made acknowledging alternate opinions far simpler and resulted in not only a strongly balanced written argument but a “complete 180” switch in her opinion of writing arguments, which she now believed could be dialogical building blocks supporting “the foundational framework for all communication.”

Yet this learning did not seem to transfer into Unit 2. She noted increasing problems with mental illness as the semester progressed, her perfectionism and procrastination pattern escalated, and, as she had herself noted, the old and entrenched mental model of argument was difficult to overcome.

Unit Two

These traits and characteristics created the perfect storm for Abigail in Unit 2, and they worked together to spiral her downward. Her mental illness was a critical factor in understanding her case. She began the final project in Unit 2 with an earnestly asked and personally meaningful research question: “How can one increase the permanence of an

experience?” When asked why she pursued this question, she responded:

So, I actually, um, I just, the beginning of every semester I’m almost, like, crazy high because I’m just so...like, I just love school...I love like, the fall and the end of summer in Logan and just everything. Um, and I just got married and like, I was having just a good time with everything. Like, my life was just super, super good. And I just wanted to be able to like, really savor like, every single second. Because I was like, this, like this is so good and I know that it’s not always going to be this good...as the semester progresses, like, things get harder and not as fun and not as exciting and new. Um, and so, like, as I’ve continued to work on this project it, it turned from kind of like a preparatory thing to kind of like a, like an immediate remedy kind of thing. Because I’ve slipped away from that “everything’s so glorious and wonderful and I love everything.” Um, just because...I’m failing my classes...and I knew that I wouldn’t always feel like that. So, I wanted to kinda build up a reservoir, almost, of happiness...

In other words, she hoped to bank happiness to sustain her through the difficulties she anticipated as the semester progressed. This situation, coupled with her perfectionism/procrastination habits, resulted in not completing research tasks. Because she did not fully reveal the extent of the problem until Interview 5, a grain of salt must be used when analyzing her last three interviews because the way she talks about her researching and writing processes was completely misaligned with her actual behavior, admitted to in the final interview.

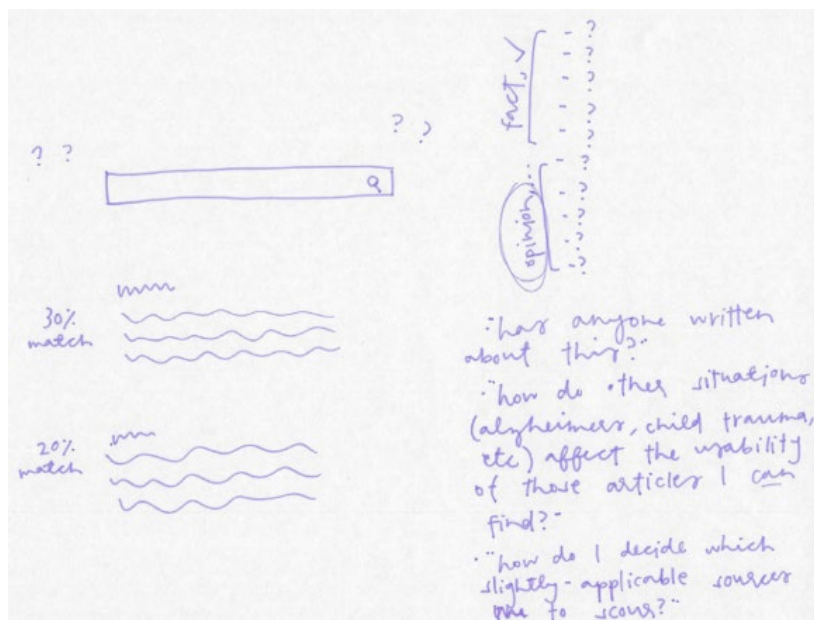
Abigail said her research began by examining anatomical journals in order to better understand how memory functioned. Her discussions of evidence evaluation demonstrate her strong knowledge about what *should be happening* when trying to learn. She astutely noted that statistics, a tool she loved, “Can say whatever you want them to say” because methods affect results. She called out the common logical problem of correlation versus causation. She asserted the importance of reading widely and finding a consensus among data before formulating a claim. She discussed source credibility as a

matter of high expertise and low bias, which informed her selection of primarily empirical sources to learn about her subject. She pointed out the publication bias. She grounded herself through definitional argument and consulted the Oxford English Dictionary to dig into semantics.

Figure 61 is Abigail's drawing representing her research process. Aside from the general frenzied appearance of things here, there are several causes for concern as this drawing was created *after* the major research workload had already been completed (the Graphic Organizer). Yet, the image contains a blank search engine box with question marks, a question regarding whether information would exist on her subject, and most importantly, a question regarding how to decide which sources she should scour. So, by the end of Unit 3, Abigail had yet to actually read through her sources—yet after her

Figure 61

Abigail's Depiction of her Progress in Unit Two



Stasis assignment, she selected a claim that remained largely unchanged throughout the remainder of the course. This support of a pre-existing claim was evidenced by her description of the drawing, in which evidence had to line up with her claim:

This is a lot of focus on, um, like I was saying, with the, how things like kind of lined up. This whole like, this 30% match, 20% match, um, and like, these whole opinion and facts, like, everything was woven together.

Her claim had been decided upon, yet she used future tense verbs in discussing this image, remarking that she was still “filtering through all of these different sources, trying to determine what and how much of things I could really use that would really be helpful for me.” Like Sadie, she was searching for “relevant” and “usable” information.

Instead of reading sources deeply for methodological problems, as the ideal Abigail mentioned doing, the real Abigail relied solely on reading abstracts. She mentioned in her first survey a preference for prediction rather than comprehension when reading. She remarked in Interview 3,

And then I also was worried about, ‘cause I didn’t want to read entire articles. Abstracts I was fine with, whatever, but to read through a whole article, um, and like if everything was like a 20-30% match, um... ‘cause I didn’t want to, like, waste my time but I didn’t know how to determine what was going to have another gem in it for me. Yeah.

The percentage match protocol was never clearly explained in interviews. This issue aside, Abigail’s mental model of argument had not altered, despite the revelations she mentioned after Unit 1. She reverted back to persuasion goals and her mental model of argument, and even though she despised “inflicting her own opinion” on others, felt obliged to persuade. Her distaste for persuasion, then, likely affected her resistance to complete her work. She pursued an evidence cherry-picking protocol in order to back a

claim formulated early in Unit 2.

These decisions were likely precipitated by her perfectionism. Her selection of incredibly dense, high-quality, and highly academic sources (a literature review, a meta-analysis, a dissertation, book chapters, entire books, and primarily empirical research articles) would have required heavy study to understand and evaluate. Yet she found it “boring” to read this type of information and procrastinated actually reading it, let alone analyzing or evaluating it. So, while her evidence gathering was broad and her selection of information highly credible, she did not process it carefully. This left her in a void that perhaps made supporting a pre-existing claim the only possible course of action. Furthermore, like Sadie, Abigail imagined that where information was located or the genre it adhered to was sufficient for analyzing credibility—she trusted all academic research on principle.

Her Stasis assignment consisted of questions without any research accompanying it. Her Graphic Organizer contained a study-wide high of 18 sources; however, only 3 had been analyzed and no reflective essay accompanied the organizer. Her Toulmin analysis demonstrated an unclear understanding of warrants, backing, and other argumentation terms and concepts. Additionally, she half-heartedly completed a Graphic Organizer peer review for points but did not submit her own for peer review.

Despite her adamant assertion that dialogue was a key element of learning, Abigail resisted it at every turn in Unit 2. When she did submit an assignment for peer review, she found ways to discount her peer reviewer’s suggestions. For example, though a peer provided her with additional warrants that she should have considered, she

remarked,

I felt like, um, I had kind of already addressed with qualifiers. In order to, um, add in qualifiers for each of those warrants it was just going to, um, kind of destroy the strength of my paper because I was gonna be like, double qualifying. Um, and so I, yeah. I just a, tried to validate them and then to kinda proceed anyway.

This confirms her lack of understanding that warrants require backing rather than validation and ignoring. And Abigail deemed her peers as incapable of providing intelligent feedback based off her personal views of them, remarking that she was

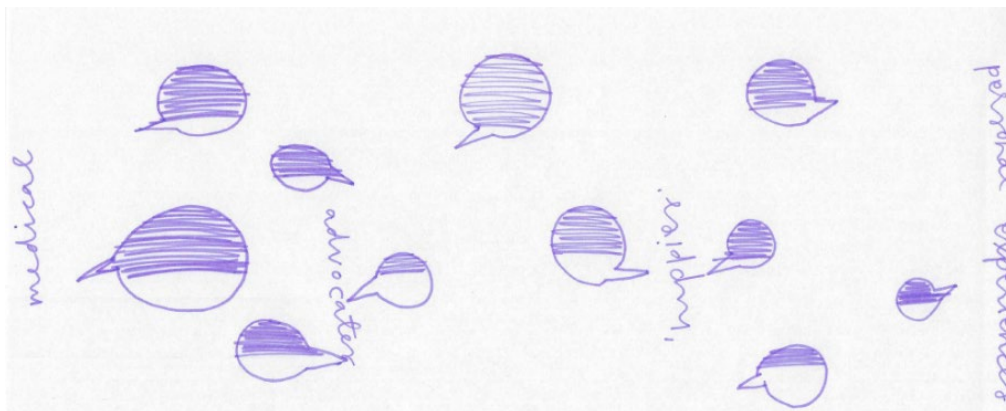
more willing to kind of discredit some things [the peer reviewer said] because I had seen before, or, or interpreted before, um, that she um...kind of missed the mark a couple of times and didn't quite understand and put things together the way that most people did. Um, which was entirely just a perception of it and my, um, anyway. But it did, it, I allowed myself to, um, interpret her opinions and to address them differently because of previous experiences like that.

Her expressed affinity for dialogue, conversation, and understanding was overruled by her aversion to having her own work critiqued or judged—particularly by those she felt did not “put things together the way most people did.” She instead said she played “devil’s advocate” for her own work—though there was no evidence of this, and it seems unlikely given the fact that she did not complete even the most basic parts of assignments.

Figure 62 is Abigail’s depiction of how she negotiated her own bias. She said that the speech bubbles that came from medical professionals were more credible (indicated by the level of shading) and had a larger impact on her bias negotiation. However, her sources were primarily mindfulness researchers rather than medical experts, which calls this “ideal” version of things into question. Her own experiences were drawn the smallest, representing her hesitance to dictate a course of action for others struggling with

Figure 62

Abigail's Drawing of her Own Bias Negotiation



mental illness and her attempt to silence her own agenda.

Abigail changed her audience often in Unit 2 (as was the case for many of her peers). Her audience was highly variable and variously described as herself or a large amalgamation of people resulting in a kind of non-definable group: “Those who struggle with mental illness or anyone who knows someone who struggles with mental illness.” So, while she described using her audience as a filtering mechanism for evidence, it was described so variously that it’s hard to imagine this occurring.

Abigail knew her energy was faltering and saw her learning opportunities slipping away, which legitimately bothered her. But she believed the revision policy would allow her to submit her work after the fact and that this would not affect her project. She had been working with “half effort,” which she remarked meant

I’m not gonna have a reason to have to go back and do it again which means I’m gonna miss all those, all those sources and opportunities to learn. Um, and that just really frustrates me. So, um, being able to...yeah. To submit, um, something

and know that I can go back to it later is actually a huge relief for me because I know that I won't lose those experiences, but I also won't lose the marks on my grade permanently.

This provides further evidence of her ultimate goal at this point in the semester: a good grade. She was still interpreting the argument writing process as a performance that would be evaluated by the deliverable. Her epiphanies from writing the Opposition had not transferred because, as time and her own mental energy begin to run short, her mental model by the end of Unit 2 slipped back to its former focus on product over the process.

Unit Three

Abigail's thesis in both arguments of the final unit read: "Mindful tactics should be considered for addition in each's encyclopedia of stratagem because their effects can combat mental illness now and over time and increase life satisfaction." This claim dominated her processes throughout Unit 3, but she claimed she was skeptical of the value of mindfulness and approached the project as a chance to learn more about it. In other words, she supported a claim without serious consideration of the evidence behind it—but fortunately for her, it was one that was, in fact, well-supported by evidence.

At the outset of Unit 3, Abigail still interpreted this project as authentically valuable for herself. But signs that this perception was waning and that her primary motivator was the performance of the argument became clearer as the unit progressed. Many factors were involved in her dwindling motivation to get the important word out about coping with mental illness, and her unclear vision of her audience was primary among them. When asked who she envisioned reading it, she responded:

My peers that are reviewing it and Lezlie and I are probably the only ones to

really read it. But as I've been trying to find a way to, um, get this information out, um, I'm considering, um, like making a video, I guess, and just um, putting it on my YouTube channel and whoever sees it, sees it, and whoever doesn't, doesn't.

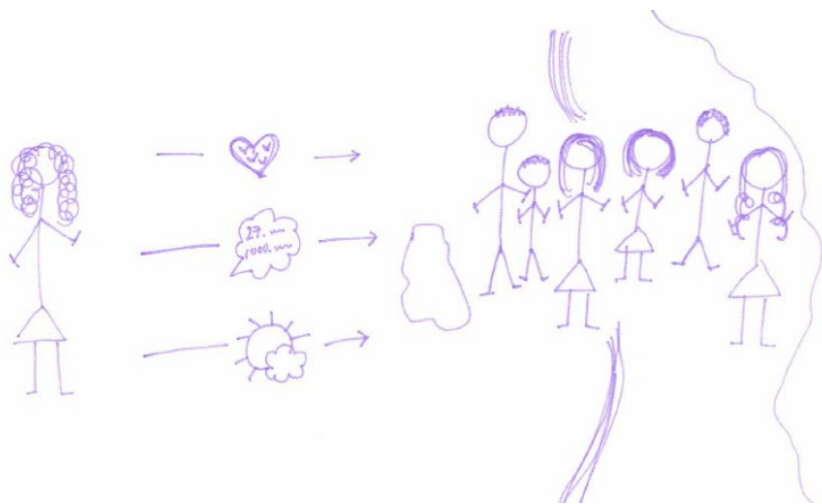
Early in Unit 3, then, Abigail still toyed with the possibility of making the argument available to her audience.

Figure 63 represents Abigail's interpretation of her audience. She selected to write to "products of Utah County," and this drawing was a physical map of that locale, with her readers standing in the middle of I-15, the highway running north and south throughout the state, with the Wasatch Front mountain range on the right and Utah Lake on their left. She planned to write to this audience

because, um, there's just all sorts of cultural phenomena that happen in Utah County and so those would be, um, high school and college students that maybe I don't even know but we have kind of similar, um, situations and experiences ...nobody really goes unscathed from living in Utah County...these people from high school maybe but also, um just the general population I guess of, of probably mostly high schoolers and college students...So, just, just all sorts of people.

Figure 63

Abigail's Conception of her Audience and Message



Her audience analysis heuristic was slim, and its complexity made it difficult for her to envision them. They are faceless and diverse, sometimes include herself; at other times, they were an “official readership” that needed a “more methodical, academic approach” and “lots of facts.”

Yet her drawing, especially contrasted with her former drawings, suggests a development. Past drawings included tiny judges, hand symbols, frenetic dots and arrows, and speech bubbles—but this was the first-time *people* were truly depicted, detailed, contextualized, and the focus of the drawing. Additionally, she not only included elements of her argument (facts and figures supporting the utilization of mindfulness for both bright and dark times, represented by the cloud/sun image), but the *strategy and tone* she would need to utilize in order to effectively communicate with this group, which she described as loving, gentle, empathic, and compassionate.

This was a wonderful indication of growth; however, it was contrasted by other comments she made as well as the Outline itself, which wholly supported her own claim and contained little audience adaptation.

Notably, Abigail was working within extreme complexity on several fronts at this point. Her claim was complex, highlighting individual subjectivity. She noted that her readers could select coping mechanisms from an entire encyclopedia in which “some days, number five works for you and some days, number 935 works for you.” And her envisioned readership was complex—consisting of a group of people that were highly diverse, described as ranging in ages 12-22, but also the “general population” and “all sorts of people.”

The complexity of subject and audience likely affected her own often conflicting goals. Abigail's desire to avoid dictating to others how they should operate was mentioned frequently in interviews and recalled her earlier resistance to persuasion from earlier in the course. Yet her mental model of argument still required persuasion, as it was her perceived reason for writing arguments. This perhaps placed her in an impossible position.

As a perfectionist, her ideal self would write the argument in a way that "sounded smart" and earned her the respect she desired. She clearly saw me, as her teacher, as a (the?) primary audience for this argument and this perspective became even stronger as the course progressed. Her lack of audience-related codes in this interview is stunning, given the fact that her interviews were the second longest, and those on which I wrote the most memos. She thanked me through email and mentioned in interviews how grateful she was for my resubmission policy, which she perceived as helping her do her best work through revision. In reality, this policy enabled her to perpetually procrastinate her work. These twin traits are seen working against her repeatedly, as in this excerpt from Interview 4,

I just still haven't opened the peer review. Um, because of Lezlie's just grace and mercy and kindness. Um, and my extreme reluctance to half-ass anything. Sorry. Um, and so I, I just submitted the same thing that I did on Saturday night. Um, and so, I haven't adapted it, clearly. But I'm excited to.

This kind of foot-dragging ultimately led to her not completing assignments by deadlines, which in turn meant she did not receive feedback from peers on her own work. She completed reviews consistently, but either did not draft in time or elected not to post her own work. The ideal Abigail valued dialogue and conversational-style learning. But

the performance-oriented Abigail felt threatened and embarrassed by this kind of interaction, because she had not completed the work in a way, she could be proud of. Pride in her argument was important to Abigail. For example, when paired with Tanner for the dialectical activity, she was mortified by their conversation:

I left class that day just kind of so embarrassed because I was so ineloquent. Just so awful at conveying what I was thinking and my plan for things...Anyway, so I was really kind of, um...You need to calm down...he was just so spot on. And his, um, argument is more, uh, like fact-based and applicable. Um, it's all about nuclear energy, anyway, and applying it to, um, especially in like Cache Valley. And so, he had like a, a solid grounds and a solid structure to, to communicate on and to kind of, um, fill out, um, just with ideas. But mine is more abstract and so that was really hard as well to try and, 'cause I couldn't provide evidences that were exactly like his...and so I felt like I was just talking. Which you are very acquainted with me just talking.

Two key differences existed between Abigail and Tanner: where he read widely and deeply and had analyzed his evidence using a stronger method than any other student in either course, Abigail had not read anything more than abstracts at this point nor had she completed many assignments. Furthermore, Tanner sought out others who could complicate his own understanding, while Abigail utterly resisted being “controlled” by those who would attempt to sway her, based on past relationships where she was not allowed to have her own opinion. Because I did not have access to this knowledge when I paired them, I could not have anticipated this problem; regardless, their conversation was not enlightening for Tanner and it likely exacerbated Abigail's self-efficacy issues.

This highlights an important finding of the study: it is difficult to predetermine what kinds of dialogue will produce learning, but intentional pairings, though they can cause discomfort, can help struggling argument writers. It may seem that, in order to be effective, conversationalists should both have sufficient background knowledge of the

subject at hand and should view dialogue as a *method* for learning rather than a *performance* of it—but the performance goal can sometimes result in learning. Writers’ past lived experiences and identities come into play during dialogues in ways that are beyond a teacher’s anticipation or control. The dialogical activity Abigail described here had well-established parameters and goals. It consisted of structured peer questioning from a scripted worksheet developed for proposal arguments, with peers taking notes on their responses in order to help each student “talk out” their processes. Abigail did not feel great about her performance in this discussion; however, *hearing* her own performance and *comparing* it to a peer’s—one who had completed enough research to speak about his subject intelligently—prompted her to reconsider the value of peer reviewing.

Abigail mentioned a new goal in Interview 4—her resolve to take peer feedback more seriously moving forward:

Especially after last time, after the Toulmin peer review when I was kind of hesitant to give any credibility to my reviewer, um, I’m glad that I’ll be more aware of that and that I’ll, um, try and combat that more because...I need to be even more, um, tuned in and less prideful about it.

This raises a critical factor in Abigail’s myside bias reduction: she possessed a strong capacity for metacognitive reflection, even when the view was not perfect. This strength, ironically, may have contributed to her perfectionism/procrastination cycle.

Her problems with self-regulation, though, eventually won out. Her final argument of the course was only about four pages long yet contained twenty-five quotes used from a total of sixteen sources, for an average of an astounding 5.5 quotes per page. She addressed her audience well in the introduction, but her own voice exited the body of

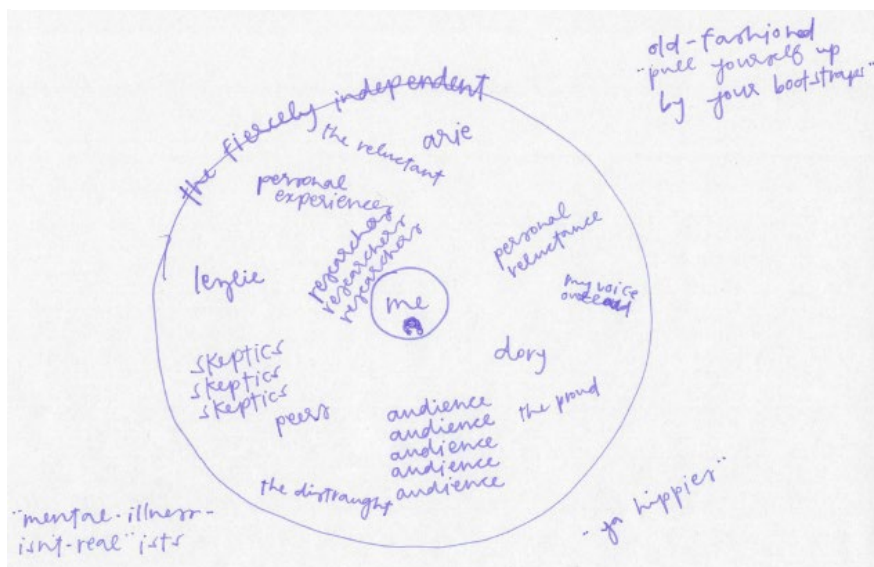
the paper. Her consensus goals in writing conflicted with the drive to defend herself, to support a pre-existing belief, to combat counterarguments, and to get a good grade.

Abigail's drawing in Figure 64 details the voices she felt she listened to and did not in her final project. She excluded only those who did not believe mental illness was real, advocating that sufferers pull themselves up by their bootstraps. She listened to her own voice, mine, the librarian's, peers', researchers', skeptics (listed three times), others—and importantly, her audience (listed five times). Fascinatingly, and as in Emily's case, Abigail also listed the voice of study's interviewer, and for similarly reflective reasons Emily mentioned—these discussions helped her assess her own thought processes:

Whether it's like your, uh, opinion or if like I read into the questions and your responses a little bit, or if it's just that really these discussions are more of a mechanism for me to, to hear my own voice, really. Um, I, I don't really know.

Figure 64

Abigail's Voices Included and Discarded



Um, probably a little bit of both. Um, that like, with the follow-up questions that you ask and things, um, I'm recognizing things that I'm maybe not explaining well, um, or, or conveying or that I've even thought about. But also that it's, uh, by discussing this with you I'm hearing things that I'm saying and recognizing things that I need to change or that are alright or, um, whatever else. What's inconsistent. I find a lot of inconsistencies in myself when we talk.

If Abigail had processed these inconsistencies fully, her final argument may have been more balanced. Even still, it was far more balanced than her Brief or even Opposition essay, suggesting an overall reduction in myside bias when triangulated with other data sources. She described the perfectionism-procrastination dynamic, remarking,

So, it totally waned, um, and especially with the graphic organizer, like, that stunted my progress for the whole time because I didn't, I didn't like know my sources, really. Um, and I had found them. I had compiled a whole list of them. Um, but actually like reading through them and evaluating them and, and having quotes to put together, I still, it was practically like I hadn't done any research. Um, and so, when I built, when I was constructing my thesis, I still didn't have all my sources evaluated. And when I was, um, writing my outline I still didn't have all my sources evaluated. And so, I didn't know what I was going to be using or what I even had to use. But, um, just as, as time wore down, um, and also my ability to care about anything was fading quickly, um, that definitely, um, it was, it was a total domino effect, um, but then, I know how to, how to get fair grades. But um, I wouldn't have been satisfied with it. Um, and because of the emotional connection I wanted to be satisfied with my work.

Without the required time and energy to do the work, Abigail focused on the grade. She interpreted the final argument as a kind of test in which she would need to pull forward what she had learned from former assignments for my approval and a grade.

The persuasion goal remained in her final argument, but this time she managed to carve out a rhetorical position for herself that would lessen the power imbalance she interpreted. Her audience adaptation was not strong in the final argument; however, it had improved since the outset of the course. Further—she imagined conversations with her readers while writing and assigned herself the role of “mentor” to these comrades from

her hometown as she shared what she had learned in order to reduce their suffering. This positioning helped her believe enough in the argument to face writing it, as it

put me in a safety position where I was, like, I could have my own opinion and they couldn't like prove me wrong, kind of. Um, but also because I could, I could kind of endure experiences for them and give them the summary of what I've learned, um, so that they kinda don't have to suffer, I guess.

At this point, Abigail no longer planned to do anything with this argument other than submit it for a grade. Her performance goal trumped others because she reached the conclusion that the subject, she wished to speak about was unspeakable to those for whom it mattered most. She abandoned the prospect of sharing her argument through a digital medium, such as YouTube. Crucially, though—this was not because she did not believe the subject was important; in fact, it was its very importance that made it impossible for her to imagine sharing. The subject of mental illness was not one she felt she could discuss, unless it were in private, and these comments are a heartbreaking lens into the loneliness Abigail had endured in navigating her mental illness within a culture that had no room for it:

It won't be, um, like publicly broadcast at all. Um, because especially there in the county where you're supposed to be like real great and real perfect, um, kind of when you struggle with things, you kind of keep it on the down low. Um, and when you're working on things to try and get better you still keep it on the down low. Um, and so, I think that...it would definitely be a private thing, a one-on-one type of conversation, um, and probably wouldn't go into very much depth because everyone's kind of private about it, um, just because of the, of the cultural stigma and phenomenon around it.

Conclusions

Abigail interpreted herself as a perfectionist and the natural product of the community in which she was raised. She explicitly discussed how she was in the midst of

forging a new adult identity for herself, having recently married. Her struggles with mental illness plagued her throughout the semester, and she linked these struggles to the high-achieving goals set for her by others. She was beginning to experiment with pushing back against those she perceived would force her into a box. Abigail viewed persuasion as an unethical attempt at controlling others. Like Sadie, she mitigated persuasion goals with consensus goals—though she did so much earlier in the course and much more heavily than Sadie in the final argument. Also, like Sadie, Abigail viewed her teacher as an evaluator—though she occasionally sought my help—but she remained completely closed off to dialogical exchanges with peers, and peer feedback on her writing, throughout the entirety of the course. This may have been so due to her consistent view of argument as a persuasive tool, and one she recoiled from. Like Sadie, Abigail took a performance approach to argument. Unlike Sadie, Abigail resented having to perform and this may have contributed to her procrastination in the course, along with her perfectionism. Both writers viewed persuasion as a necessary part of argument; however, Abigail’s ability to reflect on her own strategies far surpassed Sadie’s for the entire semester, which likely contributed to her unique perception of persuasion. After her initial argument, Abigail began to see arguments could serve multiple purposes, yet her ability to fully engage in evaluating evidence in order to harness those purposes was negatively impacted by her own mental illness, a perfectionism nurtured by the culture in which she was raised, and time management problems. Despite her relative lack of reflection throughout the final two units, she began to see that the course was not about “English,” but “communication...and those interpersonal, um, disciplines, um, instead of,

of writing. It was not just about putting words on a piece of paper.” Her reflection was most evident in her conversations with the interviewer, where hearing herself speak (instead of arguing, and without fear of judgment) enabled her to reconsider her strategies. Despite the shortcomings evident in her final argument, Abigail had grown in her rhetorical awareness, and her myside bias reduced through interviews and partially in the survey, as that understanding grew. Yet her balanced schema score dropped slightly, and her final argument did not evidence implementation of the understanding she discussed during interviews.

Chris: The Echo-Chamber Engineer

I just don't think it's very, uh, social etiquette. You don't talk about politics and religion around the dinner table type thing. I talk with people I know who are similar in point of views as me so I don't have an argument. It kind of keeps my opinions from getting extreme in any way is knowing that other people have opinions as well and that they might get offended by me, while my opinions would never get extreme.... You know you see it across the news a lot. Uh, like, speakers getting forced to stop their events, even if they aren't super controversial. Uh, just because someone speaks doesn't mean you have to listen or care about what they say. You know, I'm very avid. Listen to all opinions. I'll let opinions kind of do what they want. Uh, like, I'm, I am big into that type of freedom, freedom of speech. And I'm really into, I watch the news a lot and read news articles and all that type of stuff. So, I see it out there and I see that it's mainstream.

Chris interpreted the world as a black and white place full of dualities: fact vs. fiction, right vs. wrong, good vs. bad. Whether he was writing about which chore was the best one or why political correctness had resulted in the stifling of the white conservative male voice, his passion for being on the “right” side, and especially for *being seen* there, was a force to be reckoned with. Maintaining this worldview was a major challenge for

him throughout the course as he moved from lighthearted to complex issues that forced him into ambiguous intellectual spaces. Spaces like these required time and energy, careful reading, discussion with others, and drafting and revision. None of these tasks appealed to Chris, largely because of how he interpreted himself in the world: as an engineer primarily concerned with *saving* time—not *taking* it. He remarked, “So, like as an engineer I...I’m supposed to be worried about efficiency and all that type of stuff. And while I hadn’t learned that yet I kind of think in that.” In other words, newly declared in his major, Chris had found a disciplinary focus on efficiency appealing as it matched the way he already operated.

Because he so often saw the world dichotomously, he was not initially thrilled to be sitting in an English course; being an “English person” was the opposite of what he believed himself to be. “Sorry,” he told the interviewer, “I kind of have to step out of my engineering self and think with an English person’s brain, even though the English side of me is really small.” This stark contrast had contributed to long-term self-efficacy problems—he broke my heart by consistently proclaiming, “I can’t write.” It simply was not true—after Kaden and Emily, Chris wrote the strongest first argument among participants and demonstrated considerable skill. Yet his view of himself and the world around him resulted in his having to negotiate many obstacles toward success in a course that required so much intellectual troublesomeness, time, and effort.

So, like Abigail, Chris strongly resisted being the course at its outset—but for critically different reasons. Where she resisted argument based on an ethical disdain for what she interpreted as its foundational goal of controlling others—Chris was more than

willing, like Sadie, to get down into the trenches of argument. Because, also like Sadie, he interpreted “argument” as the application of a stable chronological process, regardless of context: (1) find a claim, (2) gather evidence to support it, and (3) persuade others by appearing well-informed and intelligent. Chris also regularly deployed militaristic diction in describing his strategies. His selected audiences were viewed as the enemy even more consistently, and for longer, than were Sadie’s.

Like Sadie and Abigail, Chris saw written argument as performance. Given his focus on efficiency, he attempted to negotiate the act quickly and with as little reflection on the enterprise as possible—while simultaneously attempting to preserve his self-respect. He maintained the performance goal as a primary objective longer than any participant.

Chris offered no shortage of self-descriptions in interviews: he claimed to be “lazy,” “a logical guy,” “kind of an argumentative person,” “really opinionated,” “outspoken,” “culturally insensitive,” “politically conservative,” and “constitutionally driven.” These traits, as his opening excerpt reveal, were emblematic of the fact that he found empathy a difficult prospect and struggled to listen to others at all, let alone rhetorically—as this would be the complete opposite of his drive to maintain a black and white world where tasks are accomplished efficiently. In complete contrast to Tanner, Chris actively worked to maintain a strict social boundary in which only the like-minded could dwell. Astoundingly, he believed that this protocol would *prevent* his views from becoming extreme. Instead, it served to amplify the problem; he struggled terribly with myside bias as he had engineered an echo chamber for himself within his social circles

and the news media he regularly consumed. His writing demonstrated improvement as the course progressed, yet his growth alternated with regressions, like Sadie. Chris was arguably the participant whose myside bias was least reduced, and arguably shifted higher over the course of the semester.

Myside Bias Shifting

Evidence was mixed on how Chris's myside bias shifted throughout the course. Interview coding indicated a decrease from course outset to end, written arguments indicated only a slight decrease from argument one to argument four, while the pre/post surveys actually indicated an increase over time. His written arguments did not demonstrate stable improvement like all participants', but Abigail's did. Instead, they indicate improvement from the Brief (first) to the Opposition (second), then a regression to the Outline (third) followed by improvement in the PAI (final)—with the overall result of a final argument score identical to his second argument's score. His discussions about his writing follow a trend similar to Rachel's and Sadie's: strong improvement in Unit 1, a regression throughout Unit 2, and steady improvement throughout Unit 3. However, as Table 17 shows, his survey scores indicated a slight increase in fact-based schema and decrease in balanced schema—suggesting increased myside bias.

Chris's fact-based schema score was *lowest* among the seven participants at the outset of the course, suggesting that his room for growth in that area was likely smaller than others' to begin with. Yet his balanced score was second-lowest at the outset of the course, after Emily's, which left plenty of room for growth over time that was not evidenced in his final score.

Table 17*Chris's Pre/Post Argument Schema*

Test	Fact-based score	Balanced score	Definitions
Pretest	4.6	4.6	“A good persuasive essay needs a strong thesis with various arguments to explain the thesis. Variety is important, in terms of proof. It's also important to understand the audience and speak to them directly.”
Posttest	4.8	3.8	“The structure depends on the audience. The content even more so. For a resistant audience finding common ground and addressing counterpoints is key. For a accepting audience providing information is more important.”
Shifting	+0.2	-0.8	

The room for growth issue was supported by Chris's definitions of argument in Table 17. Chris's initial definition was the only one among all participants' that uses the word “audience” (though Rachel did mention a “reader”); however, there was no mention of counterarguments or alternate perspectives in his initial definition and the focus was on supporting a “strong thesis.” He used the word “proof” rather than “evidence”—which may indicate a less epistemologically-mature and persuasively-oriented view. His definition by the end of the course suggests Chris had learned that structure and content depend on the audience's perspective, and that counterarguments were necessary components of argument.

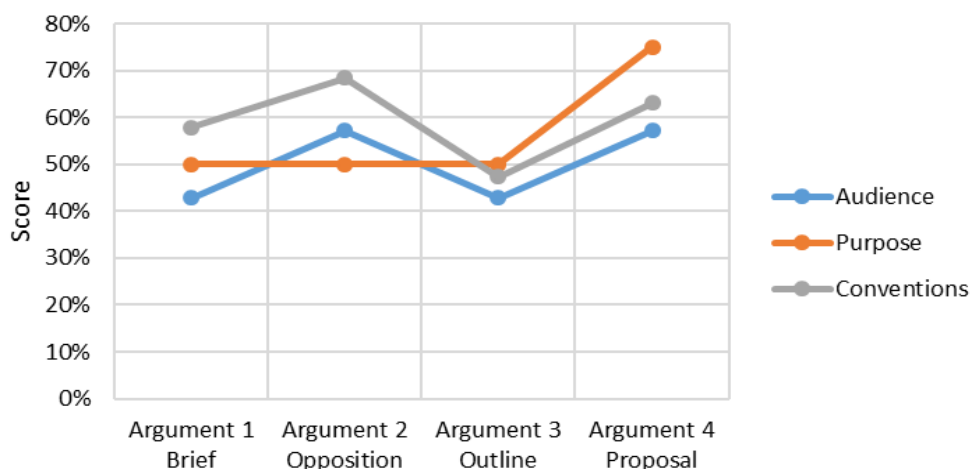
Overall, a slight shift away from myside bias and toward rhetorical awareness is suggested by Chris's written arguments over the semester. Figure 65 demonstrates how, as was common across cases, when his audience scores rose (and he considered and adapted for them), so did his ability to wield the conventions of written argument. His persuasive goal remained stable throughout the first three arguments, yet when he

detached from his own beliefs in the Opposition, improvement was demonstrated in both audience awareness and conventions. Though he stuck with a pre-formulated and biased claim in the PAI (final), his goals shifted for the first time to include consensus with persuasion goals, which likely facilitated stronger audience awareness and application of conventional argument strategies.

Yet what stood out in Chris's written arguments was both his progress-regression-

Figure 65

Chris's Shifting Use of Audience, Purpose, and Conventions Over Time



progress trend (like Sadie's), and an overall performance that did not improve at the rate that most of his peers did (like Abigail).

Figure 66 provides a more detailed look at Chris's four arguments in the course. His Brief (first) argument demonstrated considerable skill, scoring the third highest following Kevin and Emily at the course outset. Combined with his initial definition of argument, it is possible that this occurred because he was the only participant to have

Figure 66*Chris's Myside Bias Shifting and Rhetorical Awareness*

Note: AUD = Audience, CA = Counterargument, RB = Rebuttal; percentages are based on the total points available for each criterion; the Purpose Type criterion assigned higher scores for consensus than for persuasive goals; Audience Analysis and Adaptation scores represent the student's attention to alternate perspectives.

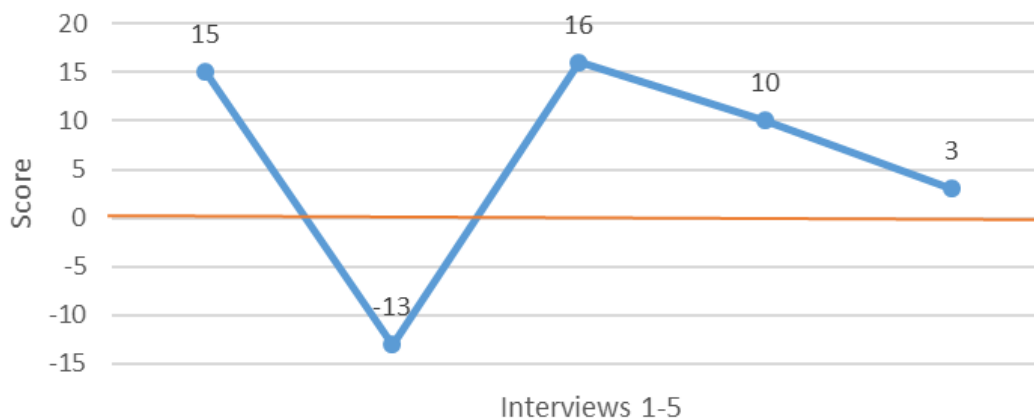
taken a composition course on a college campus, and fairly recently. His proficiency in both audience adaptation and claim support peaked in the Opposition (second) argument. His analysis of his audience increased throughout Unit 3, equaling both Sadie's and Emily's—though it fell short of all other participants and did not translate into adaptation moves as it did in all other cases (matching Abigail's low in the final argument). Chris and Sadie spent the longest time pursuing persuasion goals in the course, moving to mixed goals only in the final argument. His Outline demonstrated mixed growth and included a steep drop off in both audience adaptation and counterargument support, accompanied by a slight improvement in audience analysis. He included consensus goals

in his final argument, where he demonstrated the highest audience analysis and counterargument support scores—yet this was tempered by weaker audience adaptation than he had demonstrated in Unit 1, equaling those of his Outline (third argument).

Chris’s interview coding suggests a healthy reduction in myside bias, as represented in Figure 67. This was especially true during Interview 2, when he was cued to detach from his own beliefs in writing the Opposition. As other evidence indicates, his bias returned and reached its peak during Unit 2, as he posed a question, gathered information, tested, and evaluated a hypothesis. However, his bias dropped steadily throughout Unit 3 as he drafted his Outline and PAI arguments.

Figure 67

Biased/Balanced Interview Comments

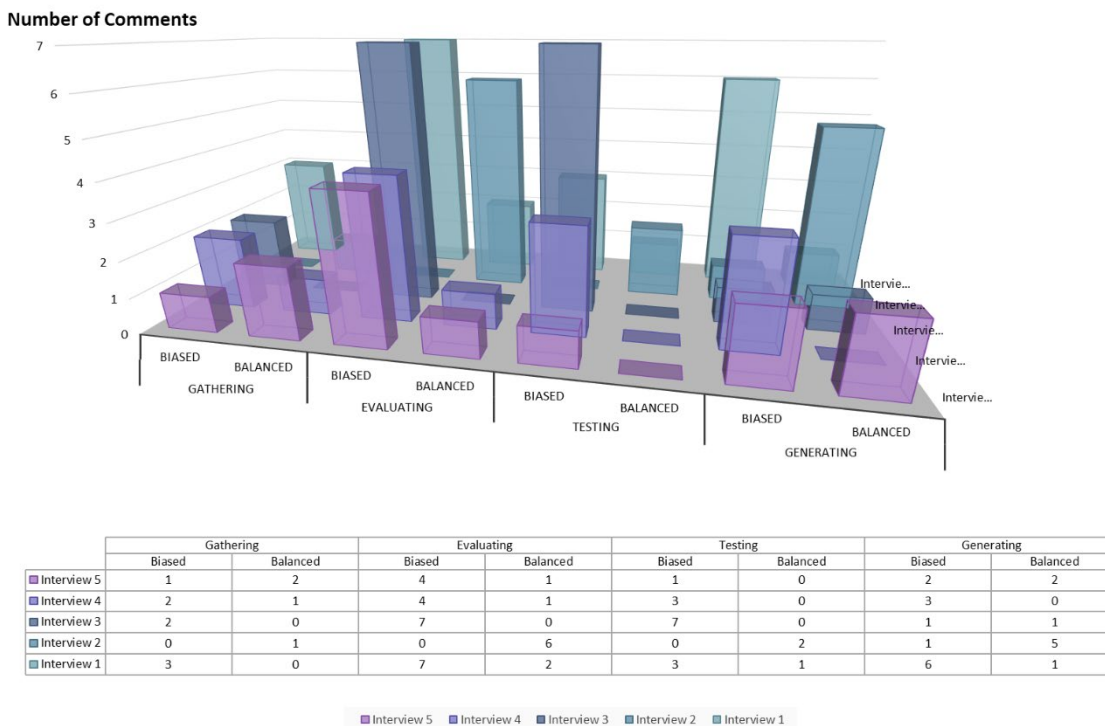


Note. The scores were calculated by subtracting the number of balanced comments from the number of biased comments; thus, lower scores demonstrate lower bias. A score of zero denotes an equal number of each comment type was made.

A closer look at Chris’s interview coding in each of the four ways myside bias was operationalized in the study is instructive. As Figure 68 shows, Chris’s bias was both higher and more consistently present than in any other case, in all four categories.

Figure 68

Chris’s Myside Bias Through Interviews by Criterion



Note. This chart depicts how a participant’s myside bias shifted over time by comparing biased to balanced comments during interviews. The number of comments is represented separately for each of the four ways myside bias was operationalized in the study: gathering, evaluating, testing, and generating. The chart should be read from back to front for chronological progression over the semester.

Chris appears to have struggled somewhat with gathering, particularly at the course outset and during Unit 2, when it mattered most due to the heavily gathering- and analysis-oriented assignments at that time. Yet his balanced gathering outweighed his biased gathering in the final interview, suggesting improvement. Chris was the most consistently biased evaluator over time, though this was not true while he wrote the Opposition argument. His biased evaluating did not become more balanced in Interview 5. Furthermore, he consistently demonstrated biased testing; especially when this task was critically important, during Unit 2—and like his evaluating, this held true throughout

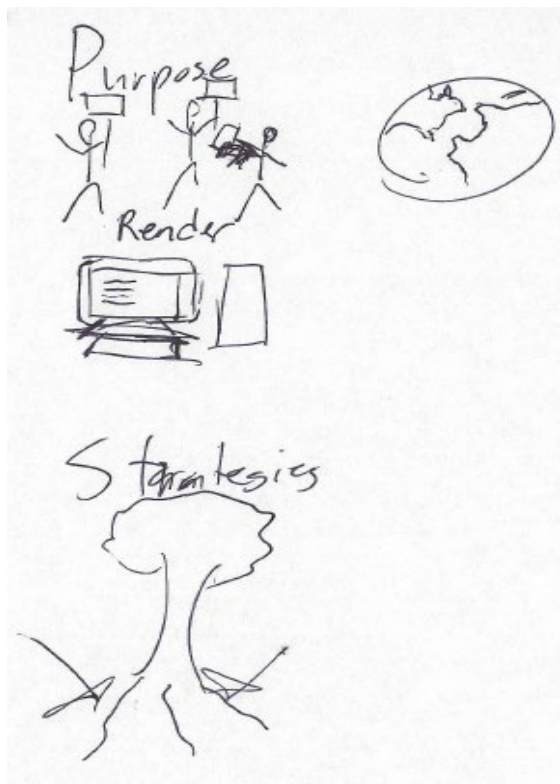
the entire course. Finally, though his bias lowered in written arguments over time, he was the participant who most consistently received biased generating codes, which were generally less mitigated by balanced codes. His bias equaled his balance in Interview 5 and equaled Abigail's at that same time.

Unit One

Chris was the fifth participant who struggled to settle on a subject to write about in the Brief (first) argument. Figure 69, his drawing of the rhetorical situation he faced in this argument, instead represents his first idea for the argument.

Figure 69

Chris's Drawing of the Brief Rhetorical Situation



Chris described the drawing by saying that in the first paper, he was going “to convince flat earth people that they are wrong.” The rounded earth image thus represents his argument. All participants focused on the argument itself in their initial drawings in the course, rather than the rhetorical situation underlying it—and Chris was no exception. He planned to “kind of make a comical essay,” which highlighted his performance objective, “to inform people, like the online trolls, uh, about why flat earth is so dumb.” Chris and Abigail were the only participants to depict their readers this first drawing; in her case, they were there to evaluate her—and in his, they are there to “be informed.”

Chris mentioned in this interview that his purpose was both “to convince” and “to inform” them—he saw these purposes as highly related in written argument. His strategy was the use of humor: “...the strategies of a tree with roots. That’s why I was pointing to the roots because I’m going to go to the roots of flat earth and all this funny stuff...it was supposed to be really comical.” He viewed this argument as a performance in which he would make people laugh.

Chris’s persuasion and performance goals were clearly stated in the first interview. They appeared in his Brief argument, even though he changed topics entirely. His Brief argued two claims: “Laundry is the most productive chore,” and, “Laundry is the best chore.” The second was implicated as being the natural conclusion to the legitimacy of the first, as efficiency was an important value for Chris. He said the laundry topic suited him better because the former “was too hard” and he “could not capture it.” Instead, he “did a full 180 and took it in a totally different direction” when he was sitting in his apartment, doing laundry while Googling argument essay ideas. He remarked,

Like, I had no idea what I was going to write my Brief essay on and I go and fill the laundry and I sit down and was like, “I can write an essay while doing laundry.” If I were cleaning the bathroom or doing dishes I could not write an essay. And I was like, I want to argue this. Like, why not? I am kind of a lazy guy, so for me, I was kind of writing...I was almost writing... well my audience was students in my housing complex. I also was writing...I was really writing for myself to convince myself to do laundry.

Given this fact, the fervor with which he supported this haphazardly selected claim in the face of alternative perspectives was surprising. When asked how he would respond to counterarguments to his Brief, he responded,

I would call bull. Because, I think anyone who would have an argument based on that would be flawed in their logic because being like, “It is so hard to do laundry, I just...” Well, it’s a really simple process and you literally have an hour and a half of nothing to do. And that would be my process of arguing with someone.

Comparing these two statements is elucidating. He has lost track of the claim, conflating productivity with ease, in his drive to arrive at a superlative “best.” The desire to see things in black and white terms was often his goal, and it was driven in part by his interpretation of argument as a performance between a winner and a loser, a “right” person and a “wrong” one. In this mental model of argument, there could be no room for alternative perspectives because that would blur the end result. This schema held true regardless of the controversiality of the subject under discussion, as even on the rather mundane topic of laundry, he noted,

If a claim were to counteract, I would have to either come to terms with it or I would have to somehow exclude it. That’s usually how I write. Is I can either flat out call it out and turn it down or somehow make the point invalid. Uh, which is usually my tricks for shutting down contradictory claims.

Incredibly, then, Chris saw no problem with raising counterarguments—and he did so in his Brief introduction. Yet his purpose in raising them was not to acknowledge

alternate perspectives. Chris's version of "coming to terms with" a counterargument meant to silence it. He remarked that his

whole first paragraph was to *shoot that down*...the whole point was so if anyone ever said, "But [laundry] takes an hour and a half." I would just be like, "This is why. This is totally why. Like, there is no reason to even think that." I think countering [the counterargument] and using it for your advantage is probably the better way to use opposing evidence.

This clarifies the strength of Chris's mental model of argument: the sole available goal was to persuade, and one accomplished this by destroying contradictory evidence in order to win. This recalls Sadie's approach and militaristic diction and indicates their shared desire to prevent any "doubt in the audience's mind" that the writer was all-knowing and "right."

Chris admitted in this interview that his goals included making me laugh, getting through this course he did not identify with, and getting a good grade. His perception of written argument as a performance for a grade was incredibly strong and tied to his identity as an engineer and his efficiency goal. He told the interviewer:

If you want to know a little about me, I'm an engineering major. And I have to take this class. So, the real goal in getting the paper written was to write the paper and get a good grade...and the purpose was essentially to write, uh, somewhat comical without being outright humorous. Uh, an argumentative essay that was *correct* and for all the *English points that I needed to follow to get full marks* and then to be one of those things that would be...that could persuade a student to actually want to do their laundry. It was kind of written with lots of different motivations. I knew I had to write a paper that could actually convince someone *if I wanted to*.

Noteworthy here was his focus on "correctness" and his grade. Chris was open to peer review throughout the course because he interpreted it as a chance for editorial assistance. He viewed drafting and revision as a chance to revise his line-level and

coherence problems, those “English points” issues, rather than the content of his ideas.

Perhaps more importantly: Chris did not actually want to convince anyone of anything in this argument, yet he still found himself getting heated about it when he imagined situations in which others might call his claims into question. A primary reason for this was his interpretation, like Abigail’s, of written arguments as utterly pointless modes of communication. And here, he also raised an important (and hilariously stated) issue that composition teachers should consider regarding audience and medium:

Essays are kind of a very educational...you don’t really see essays in any other media outside of education. Uh, because even the news now-a-days is barely an essay. It’s really catchy titles and quick data and then background after the quick information. While essays are more formal and don’t really catch readers...Like, if someone were to say, uh...let’s say my Resident’s Assistant were to come and say “Hey, I read your Brief essay. Your English teacher gave it to me. It was revolutionary. Please present something to us!” I would not in any way give out the essay. I would make a poster. Or I would...if they...heaven forbid that if that were to happen they would make me give a presentation...but it would be like a two-minute presentation because I would just be like, “Laundry is the best, here’s why. Any questions?” I just, yeah, essay is probably not the best format to get to college students. Uh...yeah, just the age group.

In other words, Chris did not see this argument as authentic because of its *modality*. This contributed to his mental model of argument as a performance for a teacher and his confusion over his audience, whom he did not perceive as real, which prohibited analysis of them since they were a fiction anyway. How do teachers help efficiency-focused students value the *process* of inquiry and argument writing over the product? And how can they create argument assignments students see as authentic?

Chris consistently applied of a stable routine for argument generation: (1) find a claim, (2) write the introduction, (3) find evidence to support the claim, and (4) write the remainder of the argument. He operated on the assumption that a “strong thesis” was one

that left no “wiggle room” for alternate ideas:

I sat down and I’m like, “Okay, I’m going to write a thesis.” And I wrote my thesis and I’m like, “That’s pretty strong. Like, I’m just going to flat out say...laundry is the most productive of all the chores.” Like, I’m not gonna...I’m not gonna...I’m not gonna give any wiggle room for laundry being, like, not a productive chore. But the evidence was definitely something I have to sit down and think of. I’m pretty sure it took me about thirty minutes to write my first draft and probably about ten minutes of that was just sitting thinking about evidence. About how I could put that in my thesis.

This process was unsurprising—it was exactly what the course had been built to work against. Many factors combined in Chris’s case to make moving away from it difficult. His epistemological development was one of them, as evidenced by his drive toward efficiency in reading and writing as well as his mental model of argument, which left no room for subjectivity or context in knowledge production. Despite his low initial fact-based schema survey score, he regularly referred to his preference for “facts” and repeatedly relied on what he termed “proof.” Critically, he related efficiency directly to accuracy, stating,

proven knowledge is evidence you can use. Like one of them...like...using facts. Like, one of the things that is a fact is that the earth is round. Like, unless you think of conspiracy theories and all of those type of stuff. And, what’s the saying...it’s like the simplest route is usually the correct route. And it’s just one of those things where it’s like the simplest route.

Believing the simplest route is the correct one is counterproductive when applied to learning, problem-solving, and argument writing—perhaps more than any other genre. Chris’s belief was integrally tied to his identity, and it served him poorly throughout a course devoted to reading widely, thinking dialogically, and writing analytically. His motivation waned, resulting in poor evaluations, which led to self-efficacy problems. He told the interviewer, “I’m not a writer,” and cited past educational experiences as having

taught him this. The cycle repeated itself throughout the course.

But Chris demonstrated growth in the Opposition argument. Utilizing Rogerian strategies resulted in his strongest argument in the course, one far less biased and more adapted to his audience than any other. He attributed this progress to the requirement for locating common ground with his resistant readership—something he admitted was difficult to do—however, this written argument felt dialogical to him, and his worldview was expanding. He remarked,

I like the, like getting away with the black and white. Because I always felt with the, like the other essays and other arguments it was always black and white. Where it's like, "You either agree with me or you don't." But with that one it was like, it...it just didn't feel as black and white. It felt good being able to talk to someone and it felt more like a conversation. Which is probably how essays should feel...especially argumentative essays. It shouldn't just be "These are the facts. Take these! These are scripture!"

This suggests he was beginning to value dialogue. It also suggests a shift toward a more balanced argument schema and a developing epistemology. He saw the goal was to "step a little bit closer" to alternate perspectives.

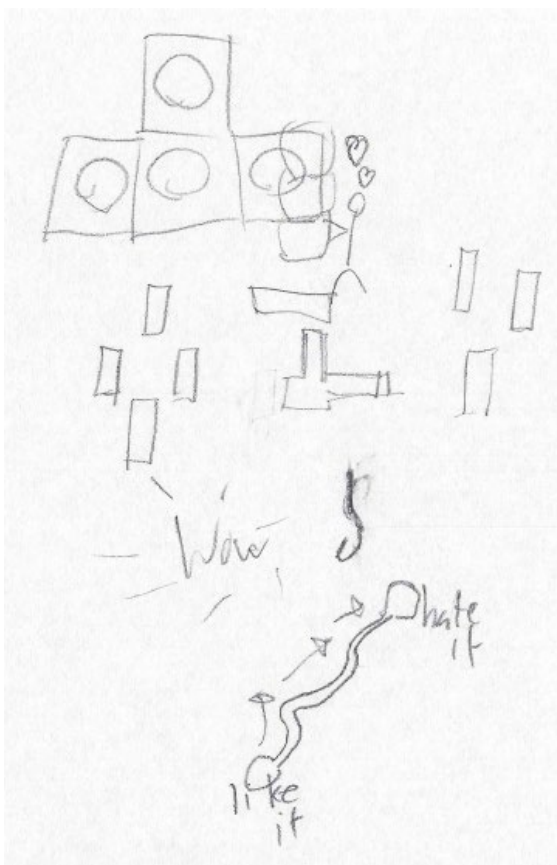
Yet this progress was mitigated by Chris's simultaneous interpretation of Rogerian argument as a persuasive tool. In fact, he did not seem to interpret Rogerian argument as "argument" at all. I organized an in-class activity called a "public Rogerian discussion," which I explicitly stated was not a "debate." Instead, students were instructed to listen attentively to a partner on an issue they disagreed upon and simply summarize that partner's opinion back to them, to the latter's satisfaction. Large group discussion then followed to explore what was learned about the difficulty of listening. After pairs worked individually, I asked for a pair to discuss their issue in front of the

class. Chris and Abigail *volunteered*, and both struggled to listen to and summarize each other's oppositional views. This difficulty in listening to others stunted both participants' progress throughout the course.

Chris's drawing of the rhetorical situation he faced in the Opposition argument, depicted in Figure 70, provides some clarification of how he perceived this new task—and the continuation of his persuasion goals. He described wanting “the Wow Factor,” and his desire to “hit hard” by getting to the point and “find that middle ground and establish a base and then just explain my points.”

Figure 70

Chris's Drawing of the Opposition Rhetorical Situation



His drawing includes a reader who loves doing laundry above the apartment complexes where all students depended upon a limited number of machines. His persuasion goals won out because he interpreted Rogerian strategies (building bridges of shared values, listening rhetorically, validating alternate perspectives through compromise) as tools for persuading a reader. The image of the unidirectional path from “like it” to “hate it” represents how this was to occur: through “carefully guiding logic to convince someone to go from the opposite to, maybe not all the way to where you’re at, but closer...even if you have to step a little bit closer to them to get it.” The goal, he said, was to gain the trust of the reader and lead them along to your claim.

Chris’s stated audience consisted of students living in his campus apartment complexes. He admitted, however, that he was “covertly” writing to himself in this argument. This may have made empathy for his readers easier for him, as it did in Abigail’s case. Yet his confusion about whom he was addressing was evidenced by his myriad and changing audience descriptions throughout the interview. He felt that writing to solely himself would have been “reductive,” further suggesting the primacy of his persuasion goals.

On that front, like Abigail, Chris succeeded in persuading himself into his new claim, noting “the Opposition essay actually convinced me against the Brief essay.” He attributed this to the math he used to argue against laundry being productive—the amount of time machines had to be occupied in a day by so many residents reduced the overall efficiency of laundry as a chore, given the average amount of time people spent doing laundry. He remarked,

And it actually, like proved, like I was like, when I was first doing it, I'm like, "Oh, this isn't going to prove my point." And it proved my point like ten-times more efficiently than I thought. Because, like, the essence of the proof was like, how much time do the washers and dryers have to be occupied every day? Like, how much time does someone have to be down at the washrooms to get laundry done for all of us? And it ended up being, like, there has to be someone down in the washroom, like, 5 hours a day.

Chris could see that the details mattered. But he applied the same evidence protocols to this argument—mechanistically supporting the new claim by zeroing in on whatever could support it.

Tellingly, not only was he convinced by this "proof," but changing his opinion on the efficiency of laundry resulted in an interesting conclusion: "Maybe all chores are bad." Living in the ambiguous space *between* the superlative "best" and "worst," in a middle ground, was not something he felt comfortable with. Instead, what could resolve the quandary would be to drop it altogether—and lump all chores into an easily understandable, simplified, and polarized end of the spectrum.

Two issues are of further importance as Chris moved into Unit 2. First, his dependence upon *location found* for assessing information credibility. He used a government website to support his Opposition claim, because he knew it would "be official...it's going to be reputable and all this type of stuff that makes it, uh, the credible piece of information attached to this essay." His trust in authority figures or source location often thwarted his ability to think critically in order to arrive at his own hypothetical claims, which likely led him to forward others'.

Second, like Abigail and Sadie, Chris self-identified in this interview as stubborn, commenting, "I tend to grab hold of an idea and think it's right." He attributed this

problem to a tendency to let emotions get in the way of logic, and briefly hinted at “bashing heads” with his mother in this way. As he moved into the second unit, these issues contributed to his myside bias.

Unit Two

The socio-historical moment in which this study’s data was collected was crucially important for Chris’s case. He began this unit with a cherished claim hovering in his mind—though disguised as a research question—related to the American political situation of 2018, 2 years after Donald Trump had been elected. To prepare for the final project, students were asked to generate a list of 30 questions about which they were genuinely curious. Because research and argument formulation are taxing intellectual work that requires sustained interest, in my experience, more options typically push students to move past hackneyed subjects for inquiry.

Chris’s list included a few potentially inquiry-motivated questions, such as: “Why are news stations so biased? What is a true moderate political stance?” Two others in this category are heartbreaking and reminiscent of other participants’ concerns, though he never again addressed them in any way in the course: “What is the best way to get to know people? How can I deal with loneliness that no one else can see?”

However, the majority of Chris’s questions verified his own admission about his tendency to “grab hold of an idea and think it’s right.” These questions read more like claims and two primary topical themes dominated this question type—both highly related to his identity. The first theme revolved around his preference for efficiency and his resultant underdeveloped epistemology: “Are general courses worth teaching? How long

are people actually in college? What is the most efficient way to govern? Why do people resist the truth?” The second theme sprung from his self-described “very conservative” political and religious identities: “Is the gay community overrepresented in TV? Why is socialism still thought to be valid? Is global warming actually happening? Is political correctness ruining education? Why does anyone care about the Kavanaugh allegations? Why is the nuclear family disappearing?”

The question he selected to pursue for the remainder of the course was: “Are riots/violent protests an effective means of achieving political goals?” This question was number twenty-two, following the nuclear family question and preceding a slew of others about leadership, governance, and American history being rewritten by progressives. During this unit, it morphed into another pseudo-question from this list regarding political correctness.

Chris’s Stasis assignment was essentially well done, consisting of sources that, when combined, reflected the complexity inherent in the question he was asking. Most suggested that violent protests were ineffective in achieving political goals, but some suggested otherwise. In his evaluation section, he noted that “based on what point of view is taken it can be both good and bad.” But this ambiguity made him uncomfortable.

I found Chris’s question to be a fascinating launching point for inquiry—and I *believed it to be inquiry*—when in actuality, it was a formulated claim masquerading as a question. Shortly after the Stasis assignment, as Chris was building his Graphic Organizer, I counseled him to consider how he might narrow his scope by defining important terms like “violent,” “effective,” and “political,” or by focusing on a particular

geographical demographic or a specific audience. We were beginning to address definitional argument in class, as definitional issues often become problematic early on in research. My counsel stemmed from my desire to help him keep the project manageable. On the first day of library research, I circulated among students to help them narrow, find information, and begin to consider potential audiences. During my conversation with Chris, as we discussed how definitions were playing into his question, he clarified why he wanted to pursue this question:

Lezlie: Hmm... do you think that... what originally made you want to keep [researching] riots and violent protests? Rather than just protests, generally?

Chris: Yeah uh... so one of the things that really threw me, like riots and disruptive protests after Trump was elected. Because they were...like, while they weren't necessarily violent, they were disruptive. And they weren't peaceful...

Lezlie: Um-hmm...

Chris: Going and blocking major interstates and such is not exactly a peaceful way to protest.

Lezlie: Well now we're in definitional land again, aren't we?

Chris: Yeah.

Lezlie: What is a "peaceful" protest?

Chris: Um...

Lezlie: How did you define a "peaceful" protest? Will you scroll down? Did you define those terms in Stasis?

Chris: I don't think I did...I defined a "riot."

Lezlie: So, if obstructing a highway isn't the most peaceful approach, what is? Because I'm even thinking, even words just getting launched back and forth can get very "not peaceful." (laughing)

Chris: That's why, uh, with Ben Shapiro, where you see those videos where

there's no violence, but it's not peaceful, because there's lots of yelling and screaming going on...

In retrospect, because he already had a claim in mind at this point, he may have perceived my advice as thwarting his attempt to simplify the issue and get this project done. His pursuit of information on protests was likely an attempt to gather evidence for what he saw to be a simple “truth,” as in his Graphic Organizer, Chris changed his question to: “Is free speech being suppressed in Universities in favor of political correctness?” Chris’s writing notebook detailed that the claim was already selected, and he confirmed this in subsequent interviews. In responding to a prompt asking students to reflect on what they’d learned from the Brief/Opposition experience, Chris wrote, “The predetermined claim influences an argument because it can create a bias in the information presented. It doesn’t help in creating a well-rounded essay, but it does help the writing process be easier.” He saw that starting with a claim rather than a question encouraged bias and the creation of a one-sided argument; however, this protocol made the whole process more *efficient*.

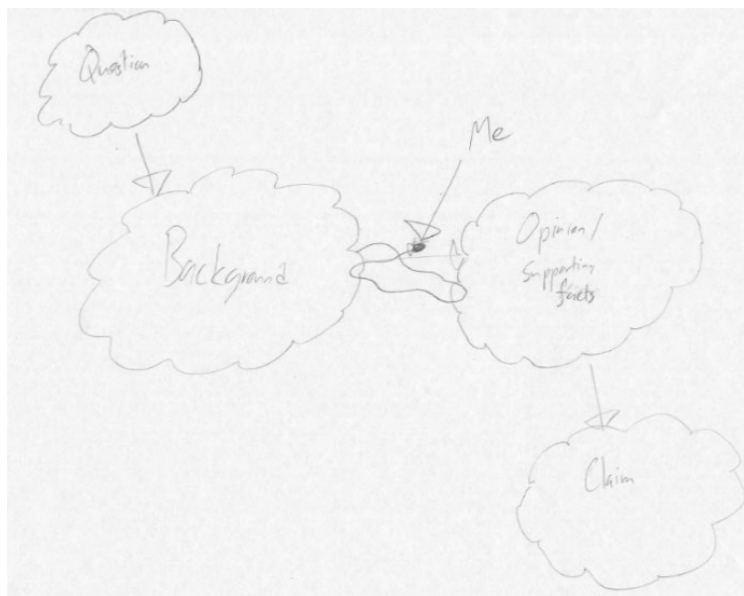
Efficiency was one of his primary goals throughout the course, as it was tied to his identity as an engineer and his self-efficacy as a reader and writer. “I process sources very slowly,” he told the interviewer, noting all the time it was taking to read the information he was finding. So much time, that he engineered a solution he felt would help immensely: *watching and consulting the news*. His Stasis assignment consisted almost wholly of popular news sources.

Figure 71 is Chris’s drawing in response to a prompt asking him to depict how he had progressed through the research in order to arrive at an argument by the end of Unit

2. With a claim already selected near the beginning of the unit, this drawing must be understood as a performance. He told the interviewer that he had done “tons of research...in my spare time I’d do research on it, read articles and stuff like that...and that was basically my background. Plus, *I watch the news a lot.*”

Figure 71

Chris’s Depiction of his Progress in Unit Two



Chris understood the process the final argument requested of him—he drew it out in this picture: begin with a question, build your knowledge formulate a claim. Yet it was not one he followed; inquiry was time- and energy-consuming and he selected a claim earlier than most (as did Sadie).

Chris felt immense pressure to quickly settle on a claim. He told the interviewer, “I was still lost on what I was even doing. I’m like, ‘I’m so dead.’ I’ve done two assignments...and I still don’t know what I’m writing about.” Yet like Abigail, Chris

contradicted himself and often seemed confused in interviews. Unlike Abigail, who occasionally heard her own inconsistencies and called them out—Chris did not. In this interview, he simultaneously painted the picture of himself as having completed heavy research, but also stated, “so my thesis in the end, uh, that I switched to, *I hadn’t done a lot of studying*, but it was about, uh, how protests at schools aren’t effective. Or, are, no...it was they are effective.”

Chris described his argument as “evolving” into “political correctness and, uh, suppression of free speech on college campuses,” even though his research question posed this as a question. He noted that “*in the news all the time* you see about protests and counter protests and riots against individuals. And it’s like, is this actually, like, doing anything?” His Graphic Organizer demonstrated a slanted view against “political correctness.” His incredibly concise reflection essay did not reflect; rather, it recounted his preferred belief that “college campuses are becoming places where opinions and free speech are being silenced,” even though his peer reviewer responded to one of his sources by stating, “I couldn’t find any evidence suggesting that conservative voices are being suppressed on campus.”

Recall that one of Chris’s preferred “tricks” for dealing with counterarguments was to “shoot them down.” He perceived dialogue as an attack and resisted it heavily during this unit, telling the interviewer,

I don’t feel like my peer did a very good job with contradicting my opinions. Uh, usually they would take one detail and rip it apart...Usually, when I, when I state, when I put an opinion out there it’s, I usually phrase it in such a way that it can’t be disputed very easily. Uh, also I mentioned how I used super credible sources. I was disputed with not so credible sources.

He did not interpret his peer reviewer as one who was helping him see the issue more broadly; rather, he interpreted her as an obstacle who was disputing his own “correct” view. Tellingly, he described the sources in his organizer as his “opinions.” These sources collectively bemoaned campus censorship and the rise of oversensitive students, “fragile snowflakes” who are overprotected by political correctness through discussion of “trigger warnings and microaggressions.”

The most interesting inclusion in his Graphic Organizer was an article authored by then Attorney General to Trump, Jeff Sessions, because it was the most likely of his sources to have spawned Chris’s claim. Sessions argued in the article, according to the quotes Chris selected, that “a national recommitment to free speech on campus is long overdue. And action to ensure First Amendment rights is overdue” because,

We have staked a country on the principle that robust and even contentious debate is how we discover truth and resolve the most intractable problems before us. This is the heritage that we have been given and which we must protect.

This article was important to Chris and became something he discussed with a peer in the dialectical activity after he had outlined his argument. Features of its content here include the focus on first amendment rights, the assumption of an objective “truth,” and importantly—the encouragement of “contentious debate” as a means for discovering such truths. Chris clutched to the first amendment throughout the remainder of the course; however, he never dug into its complexity or the interpretational aspects that have plagued courts since its creation. The notion of a singular “truth” resonated with him. And debate (not empathic dialogue) fit solidly into Chris’s mental model of argument.

Primary goals for Chris during this unit were to defend himself, form a good

argument, support a pre-existing claim, find credible sources, get it done, inform, persuade others, and use logos. In Toulmin, he left half his warrants unbacked—yet the performance element is evident in his description warrant backing, when after looking at all the conflicting information,

I went with cold hard facts. I love being an engineer...And if I used these weak facts or just like, uh, or...like, there was a couple of them where I just wrote, I just wrote my, like, honest opinion on it. Because I knew I would have to defend it as well. Uh, but most of the time it was I was looking for, for articles and journals that were accredited. That someone could look at and *not beat up the ethos* on it because it would be accredited.

Chris was confused about source credibility and was coded for more discussion of this issue than any other participant. On the one hand, he saw credibility as a black and white issue rather than judgment based on several factors along a spectrum and requiring critical thinking about an authorial agenda, the rhetorical situation, or subject-appropriate expertise. He remarked, “there’s no middle ground for me, it’s one or the other.” Yet in the very next sentence, he contradicted himself, remarking,

There is no such thing as no biased bias because bias is natural. And you can’t have an opinion without being a little biased. Uh, so, yeah. It’s just inherently flawed because I’m not unbiased. So, any method that I used to eliminate bias is going to still have just a little bit because I would have been biased in some way.

In other words, he viewed bias as unavoidable and therefore saw no need to apply a reasoned process for evaluating it.

That Chris did not evaluate evenly is evident in his ironic exclusion of one “cold hard fact” from his Graphic Organizer—one which never made it into the final argument, though it would have supported his claim strongly. Just four years previously, Anita Sarkeesian, a feminist media critic, had been scheduled to speak on USU’s campus about

the representation of women in video games. Upon receiving an emailed threat of mass shootings were she to present on USU's campus, and after confirming that USU allowed concealed carry weapons and would not screen for them at the door, she cancelled her appearance. This was the perfect example of discourse being silenced on campus through the threat of violence—and it was a local and relatively recent example. Yet Chris remarked that her credibility, as a “like, staunch feminist” justified exclusion: “And I’m like, and her article leaned feminist. I’m like, this is a decent article, and it supports my thesis but it’s not, it’s not credible because she is so radical.” Her left-leaning politics likely prevented him from even considering including her story.

Yet Chris saw no credibility problems with making Ben Shapiro's cancelled events at the University of Utah in Salt Lake City the centerpiece of his evidence and arguments. Ben Shapiro is a well-known conservative political commentator and editor in chief of *Breitbart News* from 2012-2016, and author of *Brainwashed: How Universities Indoctrinate America's Youth* (2004), in which he argues that the liberal professoriate is dominating the minds of American youth by disallowing a variety of viewpoints on campuses.

Chris determined credibility in three ways: by relying on “accredited” authority figures (such as government websites or Jeff Sessions), or those he perceived to be “accredited,” by trusting in the information container or location found (i.e., library databases, news corporation brand names), and by “feel.” And feel, he did. One source made him so angry that he said he “might have to hold [himself] back from slapping them because it was so controversial and so against [him] personally.”

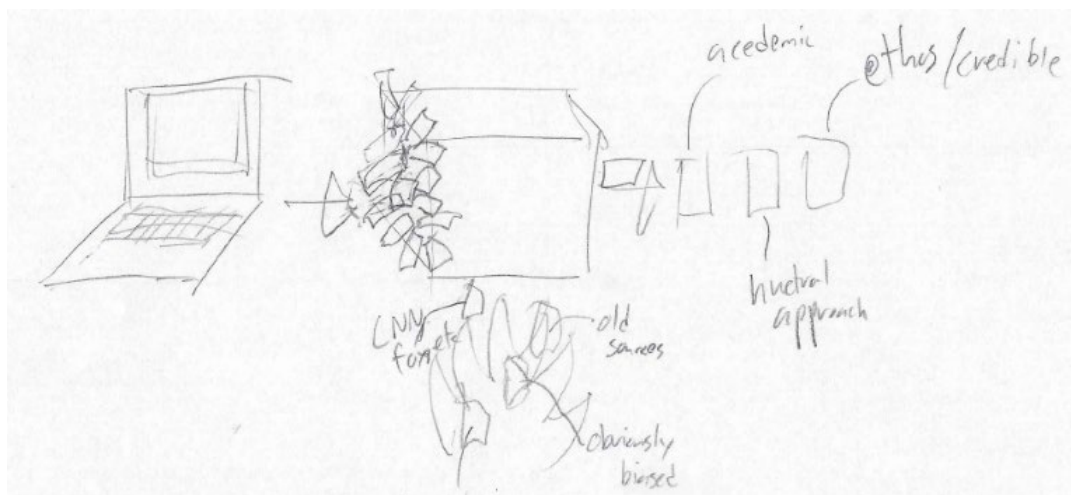
The latter approach resulted in his assessing authorial stance—not in order to evaluate its credibility, as Tanner did—but to determine whether it aligned with his own views and therefore might prove useful. He remarked,

I love looking at articles that use trigger words. Trigger words are some of my favorite things because, like, if someone, like, I could tell if something is super conservative because they refer to liberals in an essentially derogatory way.

Figure 72 is Chris's depiction of how he negotiated his bias during Unit 2. He described the image by explaining that the computer represented all his research, and then like an assembly line, those sources underwent a process:

Figure 72

Chris's Drawing of his Own Bias Negotiation



Chris: Yeah, there's flames underneath. So, the stuff getting dropped is the old sources, the obviously biased. You see a fox on there just to kind of, the biased news networks. And basically anything that wasn't academic. And then I had the stuff that was coming out was the academic, the neutral approaches and the, the credible sources.

Interviewer: Oh, okay. So, that filter, err, that thing in the middle is sort of like a filter. And, um, it's like burning off, like, the discredited ones and

the ones that are going through were like, they're like the diamonds that survived the fire.

Chris: Yeah, that's basically, that's basically the approach we've been talking the entire time about my sources and how I...anything that didn't fit was gone.

Interviewer: Okay.

Chris: Well that didn't fit, like, not necessarily wouldn't against my opinion. But anything that didn't fit my, my expectations.

Interviewer: Can you um, can you tell me about why you chose to draw it that way?

Chris: Well, like, instantly as soon as she said, like, how do you handle your sources, I'm like, I have so many sources right now. I have so many sources. And I'm like, I'm just destroying half of them because they're worthless. And I kind of thought fire, box. I kind of thought of like, the math, like the math box that you burn back in elementary school. And I just kind of, yeah. It just kind of came to me...I pictured it a lot better looking than this, though.

His impulse toward burning information became even stronger in the final unit of the course, as discussed below. Yet his drawing clarifies how important the performance element was for him, as only two "academic" sources appeared in his final paper while the remainder were primarily news editorials, pictured thrown to the fire here.

By the end of Unit 2, Chris forwarded the argument, "USU college students should not care about enforcing political correctness because different and even controversial opinions are protected by the first amendment." Very few audience codes were assigned during this interview; those that were included counterarguments viewed apathetically, not audience aware, and shifting audience. As he began to think about how to present this argument to his student peers, he showed some progress; however, his mental model of argument overpowered any inclination toward engaging in meaningful

reflection or dialogue—key elements in myside bias reduction.

Unit Three

Chris’s myside bias in hypothesis testing, as well as his tendency to rationalize his reasoning and perform it, were clearly evident at the outset of Unit 3. In response to a question regarding how he arrived at the claim he was now proposing, Chris responded,

I kind of came to that natural conclusion because I saw the evidence and *the evidence followed to an opinion that was kinda already there*. And I’m like, “Okay, I can write it.” This was uh, the, well it fits the exact purpose of the paper. The proposal from inquiry. Uh, I made the inquiry, and I found an opinion and I’m like, “I already agree with this. I’m going to write on this.” So, it was just, I guess exactly what the paper was supposed to be from the beginning is what I’m doing.”

Chris was the participant most often coded for supporting a pre-existing claim in Unit 3. Also in this unit, he was the most often coded for the goal “get it done.” This was evidenced in his sparsely completed Outline, which mentioned counterarguments in single sentences followed by paragraph-long rebuttals replete with supporting evidence. Six of his supporting sources were news editorials.

Chris’s interpretations of himself and the world as he knew it, largely through the news media and social echo chambers he had built for himself, were foundational elements in his claim formation. His claim had altered slightly as a result of Toulmin, now reading, “USU college students shouldn’t begin to enforce their own version political agenda on their peers” instead of the former, “USU college students shouldn’t care about enforcing political correctness.” A slight clarity problem at the line level here, but a clearer articulation of *whose* behavior required alteration: USU students who would attempt to enforce their own political views on their peers.

Not surprisingly, he remarked in this interview that he did not actually see or fear this happening at USU but wanted to ensure it never did. Interviews clarified further how the actual emphasis in this claim was on the *whom*, and their collective identity, remarking,

When you look at people getting their free speech oppressed it tends to be conservative white men. And I kinda fit that standpoint. And I'm very political and very outspoken and I really don't want my opinion being silenced. So, it kinda became a personal thing.

In other words, Chris felt that conservative white men—men like Jeff Sessions, Ben Shapiro, and himself—were being silenced. He was less direct about who was doing the silencing in his claim, but the gist of his argument implied those who supported “political correctness.” Further clarity lies in the following exchange, which initially sounded like mitigated myside bias but quickly veered into problematic reasoning:

Chris: The paper, it's just to get people to understand free speech. And just to be like...to be, uh, to understand that everyone has different opinions. And to respect them.

Interviewer: Okay. So, if I'm understanding you correctly, you're saying that we need to embrace diversity in that aspect.

Chris: Oh, diversity in everything. I'm, I'm good with diversity as long as diversity doesn't begin to infringe on other people.

This backtracking evidenced the kind of mental gymnastics that hinged, once again, on definitional clarity—something Chris really struggled with in the course—and a clear conception of which social category one belonged to. What would entail “infringing,” here? For example, when asked how he defined “violence” in this interview, he remarked, “When I refer to violence...I don't necessarily mean someone going and killing someone or fighting someone. I, I talk more about the, the protests for protests’

sake.” In other words, Chris defined protests against people or causes he cherished (i.e., Trump’s election, the radical conservatism of Ben Shapiro) as purposeless staged performances, which were then, by definition, violent.

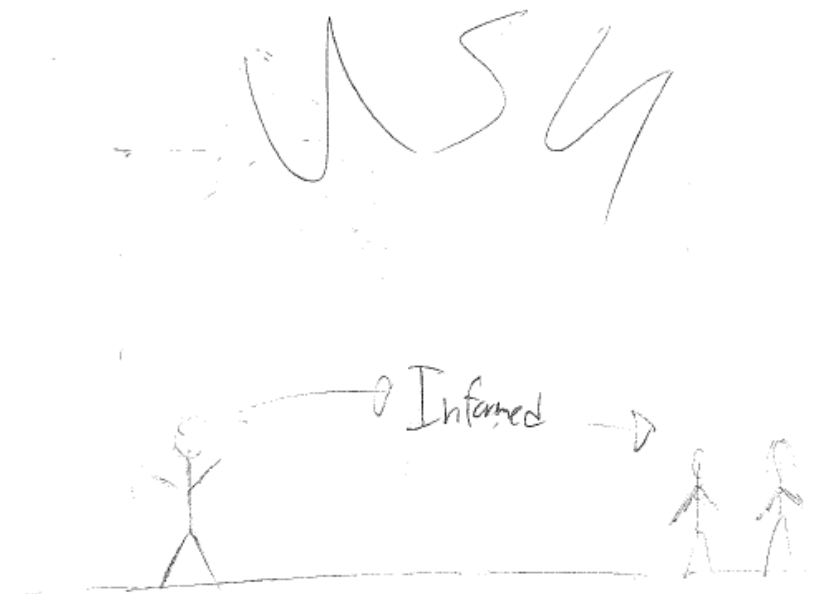
This perception was a product of the world Chris had engineered for himself—one in which he would not have to listen to those who belonged to certain social categories as they voiced alternative viewpoints. The central irony of his argument then, was that he *wanted to be heard but did not want to listen*. When he said, “I want people to realize that other opinions, they should exist....and we should defend them regardless of what we think about them...people should be able to talk about politics and not be ridiculed,” what he meant was that *he* should be able to talk about politics and not be ridiculed.

This unidirectional relationship is evidenced in Figure 73, which depicts how Chris saw his audience and the most important things he’d need to communicate or do in order to construct his argument. The drawing clarifies the location, then draws an arrow from his own mind to his readers, with the sole word, “informed,” as the singular message he felt it was important to communicate to his readers. He remarked about the drawing,

Because that’s what I wanted to appear. I wanted to seem unbiased, informed, and uh, and kind of caring...And I wanted to write an educated paper that someone could read and be like, “Okay. Those are good facts” ...*I don’t care if they agree with my argument or not. It’s like, as long as they come away and like, understand the facts that I presented. That’s the goal of my paper...the major thing I want coming off of my paper is that the, uh, that there’s knowledge behind it and that people know what I’m talking about...*I wanted to talk about, the argument that I had a little bit of passion about, um, that I could share and try to *make people understand my point of view.*

Figure 73

Chris's Conception of his Audience and Message



Recall from Unit 1 that Chris used the phrase “to inform” interchangeably with “to convince.” In this interview, his speech was coded highest among participants for “persuade others” and “inform/open the reader’s eyes,” and it tied Abigail for the most frequent mention of “defend myself.” Chris’s combination of persuasion goals and underdeveloped epistemology regarding the time and effort it would take to grasp the complex issue of applying first amendment rights to a university context served to exacerbate his dichotomous thinking. He viewed his sources as “good” or “bad” by letting a website do the evaluation work for him. Mediabiasfactcheck.com was a tool I had presented in class to help students assess media bias, in combination with many other strategies. Chris interpreted the site as a one-step method for deciding whether sources were “good” or “bad” and was happy not to have to think through issues like author,

intent, evidence, or rhetorical context, saying,

I'm like, this is great. So, usually whenever I find a news source that's like big, I'll run it through there and see if it... Like, one of the things was is I was curious. So, I ran CNN and Fox through, even though I know they're obviously biased. And they failed...

As his drawing description suggests, Chris's persuasion goal often co-occurred with performance codes; he was coded highest in desire to produce authorial ethos, and often mentioned his concern with his grade in this interview. More than anything else, this persuasive performance prohibited listening. Unlike Emily, he did not want this argument to be a conversation. He did not care whether his readers agreed or not—the most important goal in his mind was that he appeared to be informed.

This lack of interest in listening to alternate perspectives was likely related to his relatively unclear conception of his own audience. At this point in the semester, his decision about who they were shifted frequently. He had initially planned to write to the entire campus, including faculty, but he realized he wanted to

write to students in general and uh, just as it, as I, I cut out the professors and just the students were kinda the key part. Because students, while we're not all the same, there's kind of a general understanding between all students. And trying to tell someone about the issue is just kinda, it's just, that's all I want to do. Is just inform the audience and present my argument for it.

His shift from interpreting all students as collectively sharing a “general understanding” to seeing cracks in that unified façade was a critical part of Chris's growth as he moved from the Outline to PAI argument. This growth stemmed from a dialogical experience he had in the course that, though it made him feel “so flustered” as it occurred, resulted in some of the strongest reflection Chris engaged in during the semester about his own purposes, use of evidence, bias, and readership.

During the dialectical activity, Chris was paired with Tanner's roommate, Tyler, as I could see from his written products that he was struggling with his own bias by this point in the semester. Pairing Abigail with Tanner and Chris with Tyler was intentional; I hoped that discussing their issues with students who had demonstrated evidence-based reasoning in the course would lead Abigail and Chris toward reflection. This was indeed what appeared to have occurred in these cases; while both Abigail and Chris felt frustrated during these conversations, they were still prompted to rethink their strategies and were more open to consideration of alternate perspectives.

In the following excerpt from their exchange, Tyler began by asking the first few questions from the dialectical activity worksheet. Very early into their conversation, he intuited Chris's bias and skipped ahead five questions to begin focusing their conversation on that issue.

Chris: My proposal is... USU college students shouldn't get to enforce the illusion of political correctness on... uh... towards their peers because different, even controversial opinions are protected by the first amendment.

Tyler: Okay...so why did you suggest this proposal?

Chris: So, the reason I suggested this proposal, so just as my research kind of went, I just, uh... was learning about free speech in my graphic organizer. And what happened was that I started seeing this obvious trend that there is some sort of oppression that no one is really going to take credit for, there's not really a source, but one of the things with it, uh... there was some sort of... uh... I don't think oppression is the right word, but there is some sort of, uh... political correctness has kind of taken over a lot of the forefront in education.

Tyler: Hmmm.

Chris: And the goal of my paper is to stop that. I don't believe that USU currently has a problem with it, but...but I don't wanna see big protests on campus and speakers being chased out on million-dollar security, that type

of stuff.

Tyler: Okay...so...how would you rate your own bias on this subject?

Chris: Well, initially I wasn't very biased when I started this, uh... proposal. Because I'd seen it and I was curious on how effective...on what has happening...originally the...my topic was about protests, but as I...as I kind of progressed, I found...I found that there was something wrong. So, it wasn't...it wasn't really a biased thing for me, it was more I saw an issue and I wanted...uh...I wanted to confront it and over time I established an opinion on it. So like right now I have an opinion, so yes, I'm biased, but initially I didn't.

Tyler: Okay. And why would you say this is something that's important?

Chris: Um...Well one of things is that, you look at some other universities, more the liberal arts colleges, stuff like that.

Tyler: Um-hmm.

Chris: One of the biggest campuses like Berkley.

Tyler: Um-hmm.

Chris: Where they have these ginormous protests, costs millions of dollars, all that type of stuff, I really do not wanna see that.

Tyler: And you have sources that back those numbers up?

Chris: Um yes. You can...I have plenty of news sources on...one of the biggest ones was the Ben Shapiro coming to...I think it was Berkley, I can't remember which university it was...but he was confronted by a crowd and he had to have hundreds of thousands of dollars of security.

Tyler: Okay, and this is from news sources?

Chris: Yes, news sources.

Tyler: And what's the bias on those news sources?

Chris: Um...one of the things is I don't have a direct source for that. But there... I've read a lot of news articles over time...so I can't point you to a direct link right now...uh but one of the things about those news sources, is that I've seen it on both CNN and Fox, and neutral, so it's more backed that they had to spend hundreds of thousands of dollars on security.

This conversation was not a debate. Tyler was asking standardized questions from a handout. But Chris was, likely for the first time, hearing himself talk about his argument with a peer. Chris's response in the large-group class discussion we held after this activity demonstrates the powerful affect it had on him:

Lezlie: Can I ask you for some feedback on how this went? Was this helpful?

Student: *(laughing)* Absolutely not.

Lezlie: It was terrible! *(laughing...Chris raises his hand)* Chris, yeah, how was it?

Chris: Well, it helped open my eyes to like the flawed, some flaws in my argument. Some obvious bias, uh...I just need to...hammer out some details and become more unbiased in my approach.

Lezlie: Oh okay.

Chris: Even though I'm biased, I need to move as much as possible.

This dialogical exchange in class seemed to have sparked Chris's reflection far more than any other pedagogical strategy, including written teacher and peer feedback or reflective writing prompts. He acknowledged his affinity for slippery slope fallacy and the necessity to work through his own biases; he questioned why he always wanted to "go big and bold" in his arguments when he could just talk with people. He saw it as a huge problem and one he wanted to address by doing "more research" to "find some more counterpoints that I can discuss."

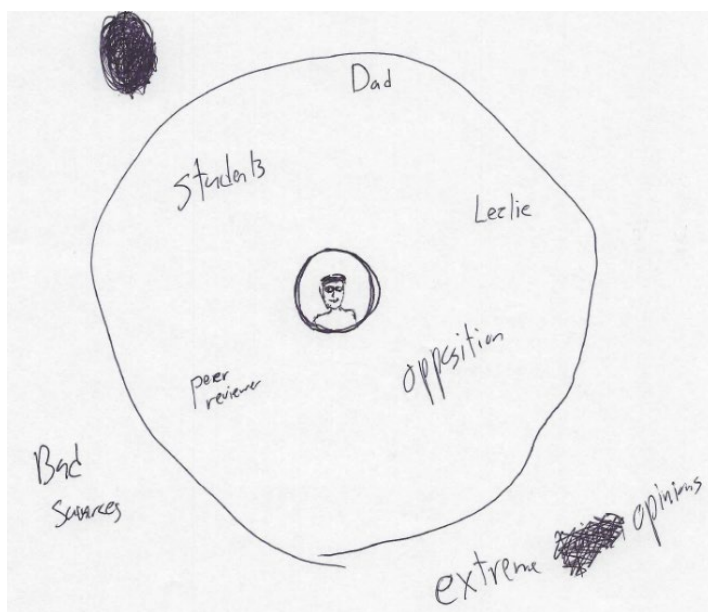
Chris demonstrated more reflection in this unit than any other. His problem detection and causal attribution codes displayed an increasing trend, as did his audience analysis. His counterargument support matched Opposition levels in his final Proposal argument. But combined with his epistemology and efficiency goals, it is possible that

these moves occurred too late in the course to make an enormous difference.

Figure 74 underscores how Chris had expanded the circle of voices he would listen to; however, no evidence is cited in the circle, and dichotomous and generic “bad sources” and “extreme opinions” were all he drew outside the circle. Compared with his peers’ drawings, this is sparse—and these voices are somewhat generic (aside from mine and his father’s). Chris’s goals at this point still included defending himself, persuading others, supporting a pre-existing claim, form a good argument, produce authorial ethos, and inform/open the reader’s eyes.

Figure 74

Chris’s Voices Included and Discarded



In the final argument, two codes for audience were clearest in interviews: teacher as audience, and composite/general/unknown reader. He still viewed counterarguments as an attack upon himself. His audience analysis heuristic was incomplete and defensive.

Though he planned to use Rogerian argument structure and strategies and met with me in order to discuss how to do this, his final argument only partially succeeded in doing this because his adaptation was punctuated with content, structural, and tonal lapses into his primary persuasive mode.

His mental model of argument dominated his final argument. Argument remained a performance to be completed for a teacher. He saw no authentic need for his argument, contrasting himself with his peers, who were planning to share their projects with their readers:

I heard a couple people talking about it. It's like, "I have his paper and I want it to do something." I'm supposed to want it to do something. But it's like, it's almost like an essential crisis for the paper. Is just like, how is the audience going to read it? And I haven't found an answer for it.

He could not see a way to share this information, in part, because he saw politics as a taboo topic. In complete contrast with Tanner, he remarked: "I just don't think it's very, uh, social etiquette. You don't talk about politics and religion around the dinner table type thing." Instead, his focus involved creating a document that made him "appear unbiased," a difficult project given the fact that his primary information source was social-media-based news. He discussed the coverage Shapiro constantly received and regularly referenced what he saw "across the news" as he discussed his project with the interviewer. In the end, 56% of his sources hailed from news sources—primarily editorials.

Performance and efficiency goals likely led to his consistent black/white thinking, repeatedly evidenced in the final argument and interview. He categorized sources he did not agree with as "garbage and lies" and accused those who would dare question the

radical right-wing political figures he respected as “Orwellian thought police.” He rejected peer review advice in the final paper because his “peers didn’t write good.” In the end, with time waning, he could not see a way to negotiate ambiguity:

I talked about that in my paper...the idea of the accepting other voices, of just accepting a few voices and I’m like, “Wait.” Like, that’s another internal thing where it’s just like, there’s no line. Who enforces these rules? Who does this, this, this? There was too many counterarguments from me that there was no way I could have written a paper on that because to come to terms with that would have taken years, probably.

In other words, he did not have the time or energy at this point to see the issue as anything but a clear-cut dichotomy. People should be allowed to either say anything—or say nothing—and he preferred the former, as long as what was said aligned with his own beliefs. By this point, his motivation dropped substantially. He could not see a way out of bias and just wanted to abandon ship. In the final interview, he remarked,

I almost feel like being neutral is inherently biased in itself because it just you aren’t approaching it from either side, meaning that you don’t get a full picture...It just was like, at the end I’m just like, I just want to burn all these sources and just be done with this.

He saw his argument as a product to be evaluated for a grade, felt that his grades were typically bad in English, and that meant nothing had been accomplished as a result. “I’m a bad writer,” he said, and as an engineer, felt vulnerable working with a language-centric discipline. Improving the argument would take “more work,” which he was not willing to do, and he did not know what medium would be appropriate for sharing. Most importantly, he felt that sharing this non-single-sided argument with people would result in him losing friends:

I don’t have the, oh, what’s the word, the medium. I don’t have a way to present it. Like, I could post it on Facebook but that’s not going to do anything. Like,

what's, what's going to happen? I'm going to have my few liberal friends and my few conservative friends on Facebook unfriend me?

He interpreted a multi-sided argument as one that would be unappealing to people within his social media circles. Though his final argument quoted Voltaire in its title: “I Disapprove of What You Say, But I Will Defend to the Death Your Right to Say It,” Chris demonstrated that he was not listening to his audience. He could not imagine saying things to them that they would disapprove of. If he had been able to, either by engineering a more diverse circle or by listening rhetorically to all within that circle, he might have produced an argument that, when shared, would not necessitate social exile.

Conclusions

Like Sadie and Abigail, Chris moved away from persuasion goals toward consensus goals at the very end of the course—though this move was almost entirely motivated by his desire to perform for a grade rather than to understand or acknowledge alternative readers’ perspectives. Chris viewed persuasion as the only purpose of argument, aside from the performance of it; this mental model was highly stable throughout the course and was exacerbated by his drive to complete tasks efficiently, a value that aligned with his identity as an engineer. His argument writing process of selecting a claim and then locating evidence to support it also remained stable throughout the course; when he attempted a more complex approach, he quickly reverted back to this former process when it became too cognitively taxing. His ability to evaluate was similarly predicated upon efficiency, persuasion, and performance goals: argument was seen as a debate in which the “winner” was able to sustain his ethos through facts. He

was continually plagued by black/white thinking, which seems related to his value system in which truth was viewed as objective and embedded in facts. This included seeing himself in black/white boxes—as an engineer, he could not be good at English or writing. His grades seemed to reinforce that these self-efficacy problems related to his identity. He regularly referenced and utilized news sources, particularly those framing political conservatism positively, and believed that exposure to alternative perspectives was personally undesirable. Despite the shortcomings evident in his final argument, Chris’s ability to reflect on his own thinking and strategies increased over the semester as a result of peer dialogue, which he remained consistently open to, resulting in increased audience analysis. However, given time constraints, he was unable to adapt his text to account for his audience’s perspectives. This may have been the result of an unclear picture of who his readers actually were—and the absence of a desire to connect with them. More than any other participant, Chris’s myside bias reduction is questionable. His written arguments did not demonstrate a consistent reduction over time, and his surveys demonstrate an increase in myside bias. His interviews demonstrate a slight reduction, though his intense performance goals are a likely explanation for such a finding.

Reading Across the Cases

A synthesis of findings from all seven cases suggests a generalized reduction in myside bias among students by the end of the semester during which the study was conducted. However, this observation holds both more and less true depending upon the individual, point in the semester, and data source consulted.

Instrument Findings

Table 18 reports all students' myside bias shifting as a result of pre/post argument schema survey scores. According to the instrument, students' collective fact-based schemas reduced over the semester ($M = -0.82$), while balanced schemas increased only minimally ($M = 0.03$); both results indicate decreased myside bias. Yet mean change

Table 18

Cross-Case Pre/Post Argument Schema Survey Scores

Participant	Test	Fact-based score	Balanced score
Emily	Pretest	5.7	4.2
	Posttest	3.0	5.8
	Shifting	-2.7	+1.6
Kevin	Pretest	5.8	5.2
	Posttest	4.9	6.6
	Shifting	-0.9	+1.4
Rachel	Pretest	6.1	6.4
	Posttest	5.5	6.0
	Shifting	-0.6	-0.4
Tanner	Pretest	4.9	5.6
	Posttest	4.9	6.0
	Shifting	No change	+0.4
Sadie	Pretest	6.1	6.8
	Posttest	5.2	5.2
	Shifting	-0.9	-1.6
Abigail	Pretest	6.2	6.8
	Posttest	5.3	6.4
	Shifting	-0.9	-0.4
Chris	Pretest	4.6	4.6
	Posttest	4.8	3.8
	Shifting	+0.2	-0.8
All Cases	Mean Shift	-0.83	+0.03

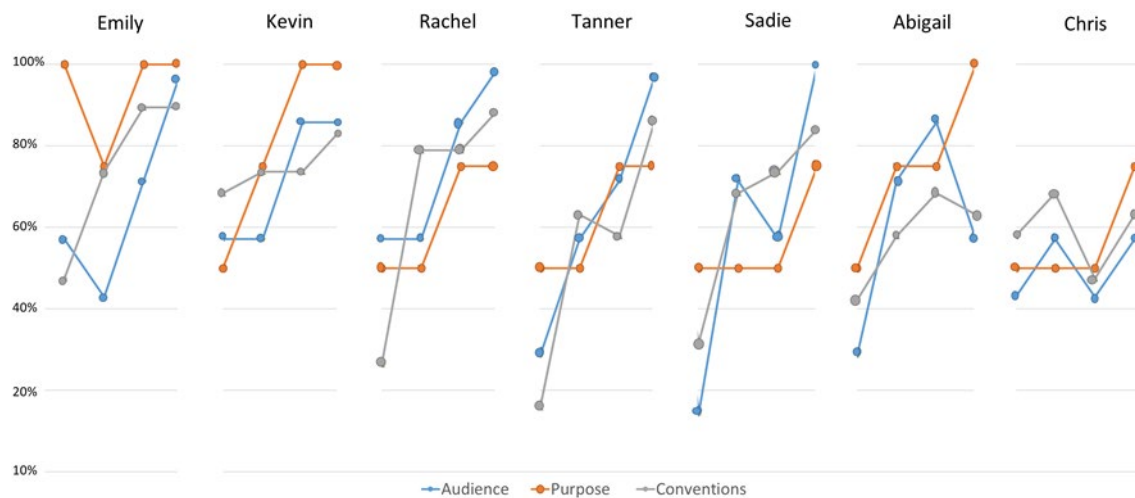
Note. A fact-based schema has been shown to increase myside bias; thus, scores shifting downwards in this category suggest decreased myside bias. A balanced schema has been shown to decrease myside bias; thus, scores shifting higher in this category suggest decreased myside bias.

scores across so few participants are less reliable an indication of myside bias shifting than other sources discussed below, and the more interesting finding is, in fact, the variability in shifting both within and between students and in schema type (fact-based/balanced) shifting. Though most students' myside bias decreased through at least one schema type, with the exception of Chris, the apparent between-case variability is a stand-out feature beyond any generalized trend. Survey data indicates that the fact-based schemas of five students dropped from pretest to posttest (suggesting a reduction in myside bias), remained identical in one student's case and rose slightly in another case. The comparatively low pretest scores of Tanner ($M = 4.9$) and Chris ($M = 4.6$) may explain why they either did not change or shifted slightly higher.

Curiously, variability in shifting between cases was more pronounced in students' balanced argument schemas, which rose in three cases (Emily's, Kevin's, and Tanner's—indicating a reduction in myside bias), dropped slightly in another three cases (Rachel's, Abigail's, and Chris's), and dropped substantially in one case (Sadie's).

Written Argument Findings

Figure 75 provides additional evidence of myside bias reductions across cases through the four arguments students wrote during the semester. Because persuasive goals have been shown to exacerbate myside bias and consensus goals have been shown to mitigate it, the orange line in each case represents the extent to which the writer's goals moved away from a single-minded focus on persuasion and toward consensus-building with readers holding alternate perspectives. Because audience analysis and adaptation demonstrate consideration of alternate perspectives, the blue line indicates each

Figure 75*Cross-Case Myside Bias Shifting through Written Arguments*

Note. This chart depicts how all seven participants' myside bias shifted over time through the four arguments written during the semester. Audience scores include the extent to which alternate perspectives were analyzed and text was adapted to account for such perspectives. Purpose scores indicate the extent to which the student's stated goals were consensus vs. persuasive. Conventions scores represent students' proficiency supporting their claims with evidence, acknowledging counterarguments and the evidence supporting them, and conceding and/or rebutting counterarguments with evidence.

participant's shifting ability to alter their arguments to account for various perspectives.

Finally, because argument conventions require supporting one's claims with evidence, demonstrating consideration of alternate perspectives by raising counterarguments and supporting evidence, conceding to alternate perspectives where warranted and rebutting them with supportive evidence, the grey line indicates each participant's shifting ability to wield the conventions of argument in a balanced versus biased way.

Cross-case comparisons of myside bias shifting through written arguments, as presented in Figure 75, further support the generalized conclusion that myside bias reductions occurred from the beginning to the end of the semester through an upward trajectory pattern. However, while generalized alignment is evident in comparisons of

arguments to survey scores in some cases, this does not hold true for others. For example, the largest myside bias decreases reported in the survey (i.e., Emily's and Kevin's) are mirrored in Figure 75 through a preponderance of time spent in the upper range of argument performance—and the myside bias increase reported in the survey (i.e., Chris's) is reflected in Figure 75 through back-and-forth progression coupled with narrow improvement overall in written arguments. Yet the four students whose survey scores demonstrate conflicting myside bias decreases (i.e., Rachel's, Tanner's, Sadie's, and Abigail's) all demonstrate decreased myside bias in written arguments through increasing consensus goals, use of conventions, and attention to audience.

Several additional observations are evident when comparing patterns among students' written arguments. An overall shift from persuasive to consensus goals occurred across cases and over time, and no participant held solely persuasive goals by the final argument. When goals became more persuasive, audience scores fell. Conventions and audience scores rose from initial to final arguments in all seven cases. And while conventions scores could increase independent of purpose, they generally remained highly aligned with audience analysis and adaptation.

Another observation blends argument and survey scores: the two students who embraced persuasion goals longest (i.e., Sadie and Chris) were the same whose survey scores indicate the least myside bias reduction. These two students were the most likely to interpret argument as a debate or battle and most often expressed defensive goals. Comparatively, three students pursued consensus goals extensively (i.e., Emily, Kevin, Abigail) and another two students shifted from persuasion goals to mixed persuasion-

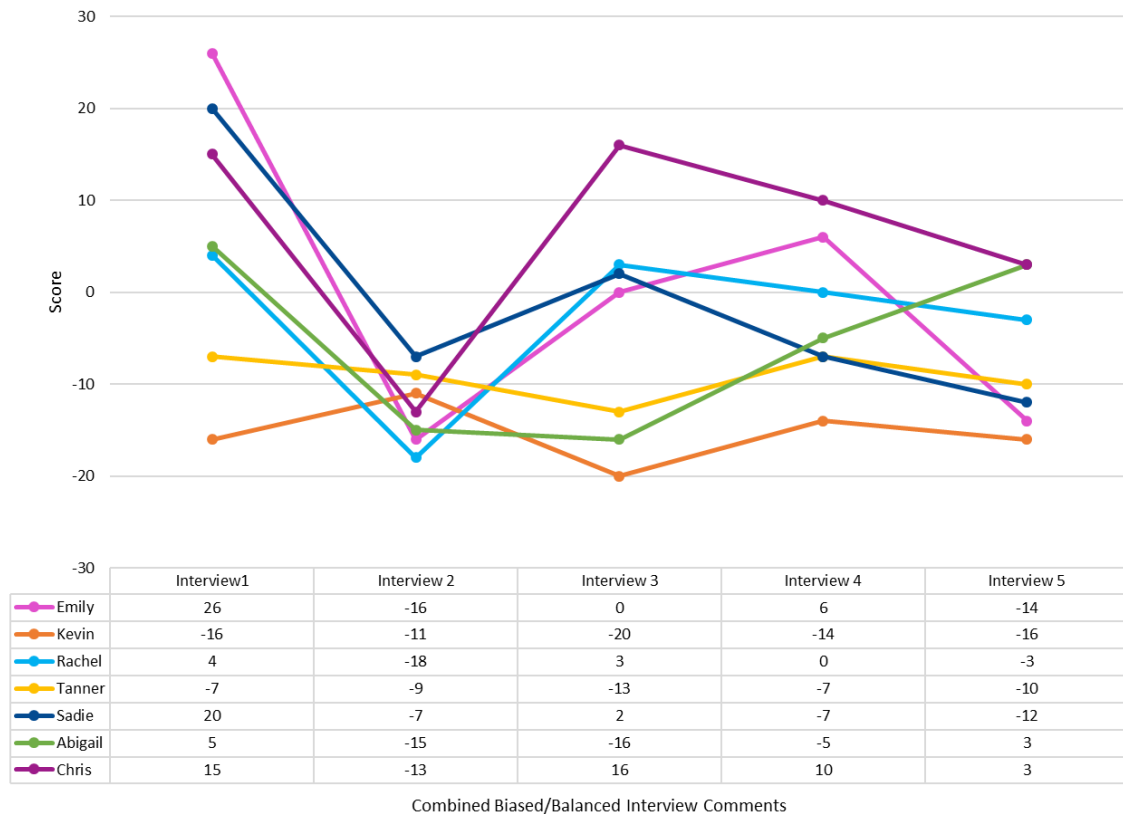
consensus goals after the first unit (i.e., Rachel, Tanner). Taken together, how one perceives *argumentation* seems implicated in myside bias; when seen as a battle of wits requiring self-defense, myside bias seems to increase.

Interview Findings

The third primary source used to triangulate data in this study was a set of five interviews conducted over the semester. These interviews coincided with the submission of each of the four arguments in the course, and the third interview coincided with the major data gathering and evaluation assignments which preceded the final two arguments. Figure 76 reflects cross-case myside bias shifting through interviews and demonstrates a generalized pattern of myside bias reduction over time.

Notably, ranges were broadest at the course's outset, most concentrated during Interview 2, fan out again during Unit 3, after which they steadily narrowed through interviews four and five. This chart suggests that, when talking about their arguments, all seven students either maintained low myside bias (in Kevin's case) or reduced their myside bias (in all other cases) from course beginning to end.

Figure 76 also suggests an interesting cross-case pattern: students' collective myside bias reached its all-time low during Interview 2. This result, supported by empirical studies mentioned in Chapter II, was the likely effect of explicit instructions to decouple from topic-specific beliefs. This interview revolved around students' Opposition arguments, which required them to support the polar opposite claim from the one they had advanced in their first (Brief) arguments. Because students selected their own claims with complete free topic choice in the Brief, the Opposition required them to

Figure 76*Cross-Case Myside Bias Shifting through Interviews*

Note. This chart depicts how all seven participants' myside bias shifted over time as represented by the proportion of biased to balanced comments made during the five interviews conducted over the semester. Cross-case ranges by interview: I1 (42), I2 (9), I3 (36), I4 (24), I5 (19). Cross-case means by interview: I1 ($M = 6.7$), I2 ($M = -12.7$), I3 ($M = -4.0$), I4 ($M = -2.4$), I5 ($M = -7.0$).

work against their own topic-specific beliefs.

Similarities are apparent between some cases. Kevin and Tanner remained more balanced than biased in speech throughout the entirety of the course, as demonstrated by their consistently negative score across interviews (indicating more balanced than biased comments were made). Chris and Rachel demonstrate similar trajectories, though Chris inhabited a more biased range than did Rachel. The trajectories of Emily, Sadie, and Rachel are similar—though Emily's range was far wider than was Sadie's or Rachel's.

Abigail’s trajectory was utterly unique; however, it aligns perfectly with her argument performance. Similarities in trajectories aside, then, these data suggest substantial variability between cases over time.

Conclusions

Source triangulation was used to increase the study’s validity. Table 19 combines data from Table 18 and Figures 75 and 76 to display students’ myside bias shifting as represented through all three primary data sources used in the study.

Table 19

Myside Bias Shifting Across Sources

Students	Argument schema survey ^a			
	Fact-Based	Balanced	Written arguments ^b	Interviews ^c
Emily	Large Reduction	Large Reduction	Large Reduction	Large Reduction
Kevin	Medium Reduction	Large Reduction	Medium Reduction	Same
Rachel	Medium Reduction	Small Increase	Large Reduction	Small Reduction
Tanner	Same	Small Reduction	Large Reduction	Small Reduction
Sadie	Medium Reduction	Large Increase	Large Reduction	Large Reduction
Abigail	Medium Reduction	Small Increase	Medium Reduction	Small Reduction
Chris	Small Increase	Medium Increase	Small Reduction	Medium Reduction

Note. Decision rules were defined by the researcher. The terms “reduction” or “increase” always refer to myside bias shifts.

^a From pretest to posttest ($n = 47$, $SD = 0.51$): Large = $SD \geq 3$, Medium = $1 \leq SD < 3$, and Small = $SD < 1$.

^b A change in combined audience, purpose, and convention scores from Argument 1 to Argument 4: Large $\geq 31\%$ or larger, Medium = 16% - 30%, and Small $\leq 15\%$.

^c A change in the score from Interview 1 to Interview 5: Large ≥ 30 points, Medium = 11– 29 points, Small ≤ 10 points.

Myside Bias Shifting Variability by Student

This table clarifies the variety of ways and extents to which myside bias shifted among participants by comparing its presence at the course outset to its end, highlighting what is perhaps the most important finding of the study: *when combining all data sources, no two students demonstrate identical trajectories in myside bias shifting*. This finding underscores the uniqueness of each student's journey and the variability between students in negotiating their myside bias, suggesting several implications discussed in Chapter V.

Furthermore, alignment across sources is not consistently present in all cases, aside from Emily's, whose results in fact do align across sources. Kevin's interview data suggests no shift from Interview 1 to Interview 5, while his survey and argument scores suggest medium-large reductions. Tanner's surveys and interviews suggest minimal reductions while his arguments demonstrate enormous reductions. In the cases of Rachel and Abigail, both demonstrate conflicting survey results and small reductions through interviews, but Rachel showed a large reduction in arguments while Abigail's was a medium reduction. In Chris's case, reductions were evident in both arguments (small) and interviews (medium), contradicting the small-medium increases displayed in the survey instrument. And most curiously, Sadie's survey scores seem internally contradictory, with a medium fact-based reduction and large balanced reduction, which when combined, might potentially cancel one another out; yet she demonstrated large reductions in both arguments and interviews.

General trends may be seen according to source type. Myside bias reductions

consistently occurred across students in written arguments, though of various sizes. Increases were not observed in interviews; instead, reductions of various sizes (or maintenance, in one case) were consistently demonstrated. In surveys, myside bias was more consistently reduced through lowered fact-based schemas than through balanced-schema increases; however, both within- and between-cases, variability is more pronounced in argument-schema results than in any other source.

Myside Bias Shifting Factors

Perhaps most instructively, then, while Tables 18 and 19 and Figures 75 and 76 suggest several similarities across cases, they also demonstrate substantial between-case variability. Despite this variability, my analysis suggests that several factors are associated with myside bias reduction and increase. A summary of cross-case factors most often observed to be associated with myside bias shifting, presented through the lens of the study's theoretical framework, is presented in Table 20.

Interpretations Affect Negotiations

The study's theoretical framework, a social cognitive theory of writing as the construction of negotiated meaning (Flower, 1994), sets three literate acts as focal points for data observation, analysis, and reporting: acts of interpretation, negotiation, and reflection. Viewed through this framework, the data suggest three additional cross-case findings.

First, how a student interprets argument-writing context likely affects how they will negotiate it, often through the goals such interpretations set in place, and this process

is highly variable both within and between individual students. Probable relationships among and between interpretation and negotiation factors in Table 20 can be inferred by the reader, though the current study makes no attempt to articulate them as concrete rules; each case study in Chapter IV described their contextual variability in detail.

Yet, trends can be observed in the data: If a student interprets knowledge to be a construction resulting from the application of shared norms of inquiry and knowing, and sees themselves as personally invested in this knowledge-production enterprise (through social group identification or personal identity alignment, for example), a learning goal will likely be catalyzed, and the student will be more prone to adopt negotiation strategies which align with those interpretations and goals, such as even application of evaluation criteria across sources. This was precisely the case for both Kevin and Tanner. Each held advanced epistemological beliefs, were both vocationally and socially aligned with individuals who shared such beliefs, repeatedly expressed their desire to learn and locate solutions, and each student indeed applied even evaluation criteria across sources.

On the other hand: If a student interprets knowledge to be either “right” or “wrong,” as assessed by their own personal observations and/or authority figures, and particularly if they also self-identify as efficiency-focused or lazy, a defensive goal or even a beliefs-as-heuristic-reasoning goal will likely ensue, and the student will be more prone to negotiate the task by skimming sources and applying evaluation criteria across sources unevenly. This relationship between interpretations, goals, and negotiations held true for Abigail and Chris, and for Sadie to a large extent as well.

The finding that interpretations often lead to negotiations through their impact on

Table 20*Interpretations, Goals, and Negotiations: Factors Affecting Myside Bias Shifting*

Factor	Reduced myside bias	Maintained or increased myside bias
Student interpretations		
Identity	High writerly self-efficacy; Alignment with a vocation/major perceived to value inquiry, knowledge, and/or writing; Alignment with social groups which value inquiry, knowledge, and evidence-based reasoning	Low writerly self-efficacy; self-described “laziness” and/or efficiency-focus; Alignment with social groups which emphasize belonging and/or uniformity
Epistemological beliefs: speed and effort involved in knowing and learning	Perceives knowing/learning as a time-taking, effortful activity	Perceives knowing/learning as relatively easy and seeks simplest methods
Epistemological beliefs: knowledge nature and production	Views knowledge as constructed through shared norms of inquiry and knowing, rendering some positions more justifiable/sustainable than others	Views knowledge as certain, absolute, right and wrong, and/or not requiring justification because authorities or personal observations serve as sources
Mental model of argument	Focus on process over product; Task seen as authentic; Views argument as a form of inquiry in which learning is the objective; Views argument as an opportunity to help others or enact meaningful and authentic change; Views argument as having several potential purposes, including collaborative problem-solving	Focus on product over process; Task not seen as authentic; Views argument as a debate in which “winning” is the objective; Views argument as a performance for a teacher and a grade; Views the primary purpose of argument as writerly persuasion of a reader
Source credibility	Views source credibility on a spectrum	Views source credibility as a dichotomous, yes/no proposition
Audience and audience analysis	Sees audience to be real/authentic; Clear vision of audience; Solid understanding of audience values and perspectives; Writer sees their relationship to readers as cooperative	Sees audience to be hypothetical or unknown; Unclear vision of audience; Weak understanding of audience values and perspectives; Teacher seen to be audience; Writer sees their relationship to readers as combative
Student goals		
Personal and audience-related goals	Personal goals may include: to learn, to problem-solve, to enact social change; Audience goals may include: to build consensus, to connect with reader(s)	Personal goals may include: to defend oneself, to perform for others; Audience goals may include: to persuade, to impress reader(s) intellectually or be seen as “right”
Topic-specific belief goals	To decouple from topic-specific beliefs	To use topic-specific beliefs as a reasoning heuristic

(table continues)

Factor	Reduced myside bias	Maintained or increased myside bias
Student negotiations		
Self-regulation and effort	Strong time management and/or self-regulation skills; Persistence in feedback and revision cycles; High work ethic; Completing assignments by deadlines; Persistence; Going beyond minimum assignment requirements	Weak time management and/or self-regulation skills; Apathy for or resistance to feedback and revision cycles; Low work ethic; Submitting incomplete or late assignments; Procrastination; Falling short of minimum assignment requirements
Evidence gathering protocols	Critical selection of sources; Gathers sources containing various perspectives; Principled inclusion/exclusion rules including credibility rankings, quantitative weighing, and/or assessing rhetorical fit	Uncritical source selection; Gathers sources supporting writer's own perspective
Evidence evaluation Protocols	Close reading of sources; Perceives multiple sides to an issue; Even application of evaluation criteria across sources; Source credibility determined by analysis of authorial expertise/bias and rhetorical context	Skimming sources; Perceives two sides to an issue; Application of "relevance" as an inclusion/exclusion rule; Absent inclusion/exclusion protocols; Uneven application of evaluation criteria across sources; Source credibility determined by containers or labels (i.e., retrieval location, genre)
Claim testing and generation	Claim developed over time in response to reasoning with evidence; complex and specific	Claim developed first before evidence is consulted; two-sided and/or absolute language used
Empathy and perspective-taking	Empathic consideration of alternate perspectives	Ignores or disregards alternate perspectives
Audience adaptation in text generation	Focuses on appearing credible to audience; Considers audience response to issue and/or writer's text; Counterargument and counterargument evidence inclusion	Focuses on appearing intelligent to audience; Little/no consideration of audience response to writer's text; Absence of or weak incorporation of counterarguments and evidence
Reflection	Identifies research/writing problems or difficulties and considers causes and potential courses of action; assesses own strategy use and thinking	Low inclination to identify research/writing problems and sparse consideration of alternative courses of action; rare assessment of own strategy use and/or thinking
Dialogue	Seeks out conversations with others holding alternative perspectives; Openness to oral/written peer dialogues and feedback	Avoids or is threatened by conversations with those holding alternate perspectives; apathy about or aversion to oral/written peer dialogues and feedback

goals should be considered cautiously. It is important to note that no causal relationship among them is guaranteed, as any number of factors can alter their interaction. This leads to the second additional finding of the study through its theoretical framework: Reflection and dialogue, which are associated with rhetorical awareness, seem to operate as negotiation methods that can potentially lead to revised interpretations; however, neither method leads to any designated direction of myside bias shifting. In this study, reflection was seen across cases at differing rates, in different ways, and with differing results. The same was observed in the case of dialogue, which was found to both mitigate and exacerbate myside bias, depending on contextual variables such as interlocutor beliefs, identities, values, or goals. Further explanations of these observations are taken up in Chapter V.

Identity

This leads to a final and emergent theme throughout the study. *Identity* was indicated by the data to be a critically important factor in myside bias shifting. As the lens through which a student views herself—her writing ability, social commitments, interest and investment in argument, and beliefs about how one can know—a student's identity seemed to filter her priorities and beliefs and to set goals for how she should interact with the world around her. Though many identity-laden issues arose in the seven cases, those seen across cases are summarized in Table 20. In short, students who interpreted themselves to be strong writers, who aligned themselves with a major or future vocational path they perceived to value inquiry, knowledge, and/or writing, or who were aligned with family, friends, or other social groups who valued such things, were

more likely to reduce their myside bias. On the other hand, students who did not interpret themselves to be strong writers, who self-identified as “lazy” or as efficiency-focused, or who aligned themselves with social groups who emphasize belonging and/or uniformity, were less likely to reduce their myside bias.

In the following chapter, I discuss these findings, identify their implications, explain their significance, and offer suggestions for future research.

CHAPTER V

DISCUSSION

In the previous chapter, I aimed to provide rich, detailed findings in answer to the following research questions:

1. When participating in a curriculum centered around rhetorical awareness, do students in First Year Composition courses shift their myside bias?
2. If so, how?

Through a multiple case study design, I analyzed how seven students in a FYC course negotiated their myside bias in a course designed to mitigate it. Though a number of studies of myside bias have been conducted during the past three decades (Britt et al., 2007; McCrudden & Barnes, 2016; Stanovich & West, 2007; Toplak & Stanovich, 2003; Wolfe, 2011, 2012; Wolfe & Britt, 2008; Wolfe et al., 2009), at the time the current study began, none had yet examined whether and how individual college students shift their myside bias in an authentic classroom setting over the course of an entire semester. Such research has been explicitly called for by scholars in the field. In their review of research on the teaching and learning of argumentative reading and writing, Newell et al. (2011) state,

We have suggested the need for research that integrates a cognitive perspective and a social perspective to study the teaching and learning of argumentative reading and writing in educational contexts. Such a research agenda would combine the study of cognitive processes and reasoning with the study of how such processes are supported by classroom teachers as they plan and enact instruction in a range of instructional contexts. (p. 297)

Empirical research of this nature is critical for educators invested in strengthening students' abilities (and propensities) to consider and write about various perspectives, for

students' own benefit as they encounter problems in academia and beyond which require consideration and evaluation of arguments and evidence, and for all stakeholders invested in a society in which judgments are made and solutions reached democratically, through open-minded and evidence-based reasoning.

Through the use of a social cognitive theoretical framework and qualitative methods in the current study, I aimed to build on previous research to expand our understanding of the cognitive and social aspects of myside bias shifting within authentic educational contexts. In accordance with the methods discussed previously, this study describes how seven individual students' myside bias shifted as they interpreted, negotiated, and reflected upon arguments written in their FYC course centered on argumentation, and the role rhetorical awareness played throughout their experiences.

In Chapter V, I interpret the results of the study by offering possible explanations for the findings described in the previous chapter, including references to ways in which they compare with findings of former studies of myside bias. I then discuss the study's implications and significance. The chapter concludes with suggestions for future areas of research.

Interpretation of the Results

I utilized Flower's (1994) social cognitive theory of writing as the construction of negotiated meaning as a lens through which to observe, analyze, and interpret how students' myside bias shifted. This theoretical framework structures writing as a literate process involving acts of interpretation, negotiation, and reflection. This framework

established a lens through which I analyzed data and extrapolated its meaning. In this section, I use this lens to interpret the study's results.

Interpretations, Goals, and Negotiations

A primary finding of this study is that the ways in which college student writers interpret argument-writing contexts—their own writerly identities, rhetorical situations, argument-writing tasks, assignment descriptions, others' expectations, argument conventions, sources, and perceived audiences—dramatically affect how they negotiate their myside bias. “Ways” here are, importantly, plural; changing variables in any of these interpretation categories will likely alter how a student negotiates an argument-writing task.

By negotiate, I of course refer to the strategies students use to gather, evaluate, hypothesize, and generate ideas and evidence as they construct written arguments, the four primary behaviors used to operationalize myside bias in this study. Yet negotiation strategies go well beyond these four tasks to include others, such as conversing with family members, managing deadlines, and persisting through cycles of feedback and revision. Table 20 presents factors associated with myside bias shifting in three categories (interpretations, goals, and negotiations) in order to illuminate student perceptions, goals, and behaviors related to myside bias shifting.

Though the finding that interpretations affect negotiations may seem somewhat obvious, it is a critical point of relevance for several reasons. The first is to underscore the complexity involved in learning to write arguments, a process for which it is unreasonable to assume that any one assignment or even course might single-handedly

teach all students to do proficiently. If interpretations of the genre, a given assignment and the rhetorical context in which it operates, and the nature and production of knowledge itself can vary widely—*all before the writing even begins and recursively throughout the writing process*—both students and teachers of argument have their hands full. Given the uniqueness of each student and writing context, and despite the benchmarks set by the standards movement,

All complex arts take a long time to learn. Meaningful, competent performances that meet the demands of the moment rely on many kinds of well-practiced and deeply understood skills working together. Manipulation of tools, skills, discipline, and endurance must become deeply engrained, while certain modes of attention, perception, thinking, and creativity must be cultivated. All of these must then be mobilized at the moment of production in meaningful and well-planned action that pushes the boundaries of what one knows and itself becomes the substance of further development. (Bazerman et al., 2017, p. 352)

As Bazerman et al. (2017) have argued, we should take the long view on writing development; this holds especially true for the writing of argument, a complex genre and a staple in both educational and public contexts.

Secondly, this finding highlights the related complexity involved in argument-writing research. The iterative nature of interpretation, even throughout the writing of a single argument, renders granular analysis an incredibly challenging process. This observation is taken up at greater length in the recommendations for future research section below.

This finding also serves to call our attention, not only to the variability in myside bias negotiation between students, but *within a singular individual*, depending on a large number of contextual factors. So, while Stanovich and West (2007) warned that myside bias may not be *person-specific*, but *belief-specific*, results from the current study suggest

we may need to look well beyond either entity or any other singular factor, and toward a system of complex interactions and relationships within a given argument-writing context.

Finally, this observation offers hope for those invested in helping students reduce myside bias in argumentation. Identification of the kinds of student interpretations which lead to both productive and counterproductive negotiations has practical value for educators and curriculum designers, who can use such knowledge to enact instructional practices and create curricula that can assist students in myside bias mitigation.

So, while all seven students in the study demonstrated reduced myside bias in several ways, it is no surprise that these ways varied both quantitatively and qualitatively. Argument schemas, as demonstrated by survey findings, was most variable. As a “a learned, culturally derived set of expectations and questions about argumentative texts” (Wolfe, 2012, p. 479), an argument schema has been shown to be difficult to alter after becoming highly entrenched (Clark & Hernandez, 2011). For this reason, even small shifts away from a fact-based schema and toward a balanced one may indicate progress, as a fact-based schema involves “an uncritical belief that facts alone make an argument good” (Wolfe, 2012, p. 480) while a balanced schema instead indicates “a preference for arguments that acknowledge more than one side” (p. 480).

One possible explanation for the variation between students in survey data involves the difference between students’ starting and end points. Chris, for example, began the course with the lowest initial fact-based schema score ($M = 4.6$) of any participant. That it grew to just $M = 4.8$ over a semester, still well under any other

students' posttest score aside from Emily's ($M = 3.0$), suggests that he perhaps had less room to grow from the outset of the course than did several of his peers, when it came to his fact-based argument schema. Additionally, however, his posttest balanced score was the lowest among participants, and significantly lower. Regardless, each students' individual trajectory had both a start and end point defined by the boundaries of the course's inception and conclusion; the variability between these points should be considered when discussing myside bias shifting, particularly regarding survey data.

Variation was most pronounced in shifting balanced argument schemas. One possible explanation for this lies in the fact that students are not blank slates when they enter a classroom; they have been and are continually exposed to various kinds of arguments in both educational and other social contexts. The *social aspect* of an argument schema is apparent in its very definition: it is learned and culturally derived. While a student's experiences in classroom settings may affect her argument schema, it is also likely that the expectations and questions that form her schema are continually informed by the culture(s) surrounding her.

The culturally derivative nature of one's argument schema, then, provides one likely explanation for the variability in reductions observed across the seven cases. Each student came to the course from a unique background based on life experiences, and though these were described to some extent in interviews and alluded to in arguments, most of these details were left undivulged. Yet traces of the cultures and life experiences were mentioned in each case, and they impacted students' goals.

For example, while I did not hope to see balanced schemas shifting lower, the

interviews of those students trending in this direction (Rachel, Sadie, Abigail, and Chris) provide possible explanations for why this occurred. First, these students pursued persuasive goals, which have been shown to increase myside bias (Felton et al., 2015; E. M. Nussbaum & Kardash, 2005) for longer than their peers, but these were also the same four students whose purpose codes included “to defend myself,” a purpose not seen in any of the other three cases, and whose purpose “to combat counterarguments,” a code particularly common in Sadie’s case and seen across all four with some regularity, was only rarely applied in the cases of Emily, Kevin, and Tanner.

A quote from each of these four students demonstrates the defensive motivation.

I understand that counterarguments make a paper more credible and I was just struggling to like come out with good counterarguments and finding enough, like, research to back my view on it. (Rachel, Interview 5)

If you mention [counterarguments] before they even think about it then like, you’re already ahead of the game. ‘Cause like I said, they can’t really fight you if you’re already aware of other things. (Sadie, Interview 2)

It put me in a safety position where I was, like, I could have my own opinion and they couldn’t like prove me wrong, kind of. (Abigail, Interview 5)

When you look at people getting their free speech oppressed it tends to be conservative white men. And I kinda fit that standpoint. And I’m very political and very outspoken and I really don’t want my opinion being silenced. (Chris, Interview 4)

This defensiveness may be linked to a particular mental model of argument—one in which we begin the process by teaming up with a side in an (importantly) two-sided issue, then cherry-pick evidence to support it, as each of these students did to differing extents. Mental models, or argument schema, are continually informed by the cultures in which students find themselves. Social interactions before, during, and outside of classroom experiences thus seem implicated in shifting argument schema, and this

subject is discussed at greater length in tandem with findings on identity.

Reflection, Dialogue, and Rhetorical Awareness

Before moving on, however, it is important to ask: did not Emily—the writer who wanted to write about the benefits of writing—also team up with a side (pro-writing) and proceed to argue its benefits? What might explain her large reductions in myside bias across the board regardless of data source?

Answers may be found in two activities in which Emily particularly enjoyed: reflection and dialogue. As mentioned in Chapter IV, reflection and dialogue were seen to exact different myside bias shifting outcomes, depending on contextual variables such as interlocutor beliefs, identities, values, or goals. As defined in the current study, reflection is “an intentional act of metacognition, an attempt to solve a problem or build awareness by ‘taking thought’ of one’s own thinking” (Flower, 1994, p. 224). Using Flower’s definition and empirical work as a guide, in the current study, reflection was coded when a student detected a problem with their thinking or writing situation, and sub-codes were added for elaborating on the problem, attributing its cause to a particular force or event, or attempting to control it by imagining and/or evaluating alternatives. All seven students in the study engaged in all five aspects of reflection at some point in the semester, though with differing frequency and in different ways. Across cases, problem awareness (detection, elaboration, or attribution) was the most common reflective activity.

However, Emily, the “reflective dialogist,” was roughly twice as likely as her peers to then attempt to control problems by evaluating them, aside from Kevin, whose

rate nearly matched hers. These two students were also those who most significantly reduce their myside bias. On the other hand, Abigail and Chris were half (and equally) as likely as Emily to do so and were arguably the students to least significantly reduce their myside bias. This data suggests that certain types of reflection are likely associated with myside bias reduction, where others may not have the same effect.

The quality of Emily's reflective activity might be indicative of a related but different activity termed "reflexivity," which Qualley (1997) has defined as

a response triggered by a dialectical engagement with the other—an other [sic] idea, theory, person, text, or even another part of one's self, e.g., a past life. By dialectical, I mean an engagement that is ongoing and recursive as opposed to a single momentary encounter. In the process of trying to understand an other [sic], our own beliefs and assumptions are disclosed, and these assumptions, themselves, can become objects of examination and critique. (p. 11)

Qualley (1997) further argues that reflexivity, coupled with an inquiry stance, requires both seeking connections with the other and noting differences, and that the latter is only enabled when the former occurs.

If students are unable or unwilling to first find a connection between their lifeworlds and the lifeworlds of others, they are not likely to concern themselves with trying to understand the differences between them, and the reasons that have given rise to the differences. (p. 120)

Emily's words from the first unit, more than any other student in the study, demonstrate her desire to connect with her reader, and this reflexive and inquiry-based stance was one she consistently adopted throughout the course:

You kind of just have to step back from the essay and not be writing anything and just really think inward on yourself and kind of forget your own cares for a minute and just think about what makes this person who they are. And then adding the next level and saying, "Okay, what are my experiences that are similar to this person? And from those experiences, how do I connect myself to them in order to tailor this essay, um, to their needs?"

Aside from Emily's incredibly sophisticated approach described here, which was also evidenced in Kevin and Tanner to an extent, it seems that reflection held the capacity to help students revise their interpretations of the writing tasks they faced, often leading to revisions in how they negotiated it. In her final argument, for example, Sadie was not evenly applying evaluation criteria across her sources in arguing that her best friend should move across the country to join her at university rather than remain far away at another. When she came to visit me about her argument, I noted that she had raised the opportunity for scholarships at her preferred school, but not the other, to support her claim. During her fifth interview, shortly after our discussion, she reflected on this problem by linking it to a logical fallacy she had recently learned (false analogy) and stating, "So, now I've got to look into that because I'm not comparing them evenly. And that's biased." Though in this case the problem was detected for her, she then elaborated on it, attributed its cause to faulty logic and bias, and evaluated its usefulness for her argument. She went on to repair the problem in her final argument.

Relatedly, then, the above example demonstrates that dialogue can reduce myside bias. In this example, the interlocutors were me and Sadie, and our experiences and perspectives were quite different on the subject we were discussing. Dialogue helped many students increase their rhetorical awareness; an outsider's perspective could provide insight into potential audience reactions or conventional strategies that a student may not have been considering. This was also the case with Chris, who noted after his in-class discussion with Tyler,

well, it helped open my eyes to like the flawed, some flaws in my argument. Some obvious bias, uh... I just need to... hammer out some details and become

more unbiased in my approach.

Chris's final argument did indeed "hammer out" some of these problems. Yet, dialogue between like-minded individuals, in the form of peer-feedback, often led to maintained or increased myside bias when problems or counterarguments were not called out. This phenomenon, also observed by Schkade et al. (2006), occurs when "talking with people who agree with you can cause...ideological amplification, a process by which your pre-existing ideological tendencies become more pronounced and more extreme," (p. 2). The implications for myside bias are clear and were indeed observed in Chris's case. "I talk with people I know who are similar in point of views as me so I don't have an argument," he noted, demonstrating both his drive toward insularity as well as his entrenched view of argument as a negative event to be avoided.

Dialogue can have personal and motivational consequences as well. For example, it did not lead to reduced myside bias in Abigail following her conversation with Tanner. Instead, recall that she was mortified by their dialectical activity, telling the interviewer,

I left class that day just kind of so embarrassed because I was so ineloquent. Just so awful at conveying what I was thinking and my plan for things...Anyway, so I was really kind of, um... "You need to calm down..." He was just so spot on.

This exchange clearly had a negative effect on how Abigail viewed herself as a writer and thinker, and her argument trajectory demonstrates she was the only student whose final argument's bias actually increased; the exchange may have even played a role in why she submitted an incomplete final argument.

Reflection and dialogue, then, hold the potential to catalyze students' reinterpretations and renegotiations, which can lead to myside bias shifting in either

direction. Yet all seven students reduced their myside bias in written arguments and either reduced or maintained it in their discussions of them, regardless of their differing argument schemas and responses to reflection and dialogue. What might explain this phenomenon?

Two possible explanations can be offered. Despite my inability to specify causal relationships between factors in Table 20, the cases suggest that certain interpretations seem to lead to specific kinds of negotiations, in part through the goals they inspire (or indeed, dictate). Writers' interpretations of themselves, argument, knowledge and learning, evidence, and their readers affected the goals they pursued, which in turn resulted in their use of specific strategies for negotiating the argument-writing tasks they encountered.

For example, if a writer's epistemological beliefs include the notion that learning is a time-taking, effortful activity (speed and effort) because knowledge is constructed by consideration of a number of positions, some of which are more justifiable than others (nature of knowledge production), it is more likely that he will accept the fallibility of his own beliefs about a topic and attempt to decouple from them while researching it. Former studies (Klaczynski, 2000; Klaczynski et al., 1997; Macpherson & Stanovich 2007; Stanovich & West, 2007, 2008a, 2008b; Toplak & Stanovich, 2003) have demonstrated that decoupling from one's topic-specific beliefs has been shown to reduce myside bias. It may be the case that, through the goal of decoupling, empathy and perspective-taking become increasingly likely, and this type of negotiation was associated with reduced myside bias in the current study.

On the other hand, if a writer's epistemological beliefs include the notion that learning is a relatively easy task requiring simple methods (speed and effort) because knowledge is dichotomously "right" or "wrong" and accessed through authority figures or personal observations, it is more likely that he will not endeavor to decouple from his own beliefs about a topic and will instead use them as a reasoning heuristic as he attempts to construct an argument. By studying the subject through the lens of his own beliefs, this writer is less likely to negotiate by empathically considering alternate perspectives, and more likely to instead ignore or disregard them, a strategy associated with maintained or increased myside bias in the current study.

Less hypothetically, consider the case of Tanner. In the identity category, Tanner certainly aligned himself with social groups valuing inquiry, knowledge, and evidence-based reasoning, including his family: the string of attorneys and judges ranging two generations deep with which he described well-reasoned conversations around the dinner table. Viewing himself as a member of a community like this one undoubtedly affected his personal goals in his final argument—which asked local citizens to consider the wisdom of nuclear energy as a renewable fuel source—goals including learning and enacting social change. Furthermore, accomplishing such goals, particularly given his alignment with a family so invested in evidenced-based argumentation, then required specific types of negotiations, including strong self-regulation, evidence gathering and evaluation protocols, and claim testing.

Compare this interpretation-goal-negotiation narrative to Chris's, during the construction of his final argument in the course. Chris's identity was heavily aligned with

the political and religious right, both groups which emphasize belonging and uniformity. Viewing himself as a member of these communities affected Chris's goals in arguing, to an unclearly envisioned readership, for first-amendment rights on a college campus where they were not being jeopardized. His beliefs about the subject were long-standing, and by his own admission, were used to guide his entire gathering, evaluation, and generation processes, which served to maintain and increase his myside bias.

Interpretation-goal-negotiation relationships were not always predictable, even within an individual student, and the data continually surprised me. This once again suggests the critical importance of variability among contexts.

And this leads to a second possible explanation for why all students were able to reduce their myside bias in written products, and largely in their speech about them, despite their differing argument schemas: genre awareness.

First, *genre awareness* is distinctly different from *genre acquisition*. The latter, which is essentially the ability to mimic text type from a predictably organized template (Johns, 2008), may explain the reduction in several student cases. Recall that Stapleton and Wu (2015) found that student arguments could contain all the requisite elements of the argument genre yet still contain low-quality reasoning. Models are important tools, especially for writers new to a genre, yet they can serve as structural crutches. Genre awareness instead provides "the rhetorical flexibility necessary for adapting one's socio-cognitive genre knowledge to ever-evolving contexts," (Johns, 2008, p. 238), facilitating transfer from one context to another (Clark & Hernandez, 2011; Johns, 2008; Negretti, 2012). As a more experienced writer, Emily may have arrived in English 2010 relatively

new to argument, but her case, described in Chapter IV, demonstrates both an ability and desire to transfer and apply her rhetorical awareness to the new context in which she found herself.

Interestingly, all students had some vision of their audiences, and by the end of the semester, all were able to adapt arguments for them. *Audience awareness* involves using ideas about an audience to create or revise text (Black, 1989, p. 241). It impacts goals that shift as a writer's mental representation of their audience changes (Berkenkotter, 1981) which may or may not result in textual adaptation. In the current study, when a writer had a clear vision of their audience, viewed them as real or authentic, or viewed their relationship with them as cooperative, they were more likely to reduce their myside bias. Furthermore, the kinds of textual adaptation which involved an empathic consideration of an audience, which has been found to predict argument balance more than any other factor (Black, 1989), did in fact reduce myside bias.

Consider how different the audience approaches of Emily (who imagined cuddling up with hot cocoa and her reader as they talked), Kevin (who conducted surveys of his readers to better understand and connect with them), and Tanner (who empathically role-played his readers to understand their perspectives) were from the approaches of Chris (who insisted on being heard while refusing to listen to his readers) or Sadie (who attempted to capture her prey/reader through her own predatorial/ authorial prowess). These approaches imply the assignment of specific roles to the writer/self and reader/ other(s), which are imagined by the writer, and which set the stage for text production.

Identity

It is perhaps unsurprising, then, that identity was found to be a critically important factor in myside bias shifting in this study. Chapter IV details many instances of students offering up unprompted descriptions or definitions of themselves as they discussed their argument-writing processes.

The notion that writing is intrinsically linked to identity may not be intuitive. Yet a group of preeminent writing scholars, in their project identifying threshold concepts of writing, have written about the subject. Threshold concepts are “concepts critical for continued learning and participation in an area or within a community of practice” (Adler-Kassner & Wardle, 2015, p. 2); of the many available options in the discipline of writing studies, that “writing enacts and creates identities and ideologies” is one of the five primary threshold concepts this group of scholars asserts as foundational. On this subject, Roozen posits,

Common perceptions of writing tend to cast it as the act of encoding or inscribing ideas in written form. To view writing in this manner, though, overlooks the roles writing plays in the construction of self. Through writing, writers come to develop and perform identities in relation to the interests, beliefs, and values of the communities they engage with, understanding the possibilities for selfhood available in those communities. The act of writing, then, is not so much about using a particular set of skills as it is about becoming a particular kind of person, about developing a sense of who we are. (Adler-Kassner & Wardle, 2015, pp. 50-51)

During my analysis of the seven cases presented in Chapter IV, the theme of identity repeatedly reared its head. Personae were constructed and reconstructed, casting was continually negotiated and renegotiated through revisions. Except students’ negotiations were never this theatrical, because as authors of argument, they remained

tied to their worlds of real people, values, relationships, and consequences.

Identity, as “conceptualized by Erikson (1968) as a sense of coherence among past, present, and future aspects of the self, involv[es] two primary processes: exploration and commitment” (Klaczynski & Lavalley, 2005, p. 3). Identity is a person’s sense of who they are and who they hope to be. It is contextual and social in nature. Newell et al. (2011) have argued that “language allows participants to take on roles and express an understanding of emotions and attitudes to argue and discuss a range of literacy events” (p. 274). In the current study, much more than “literacy events” was at stake as these seven students wrote arguments. Their concerns over who they were and hope to be, and the social nature of those constructions, is best seen through their own words. The following quotes from each participant (not in dialogue) provide examples.

Emily: I argued that there are benefits, kind of as a letter to myself, to remind myself that like, it’s a good thing. You should take this time to blossom and become a better person...I find myself kind of lonely. And like, my roommates—all they can talk about is their relationships.

Kevin: I decided, well, this is my chance to change everything. And I was thinking, “Well, what do the cool kids have? Like, they have women...they go to parties and everything.” And it’s like, “Well, maybe I’ll be like them.” So I started dating a lot from there. In the start, it definitely was, like, that was a kind of status thing...the Mormon feel. Like, you gotta get married fast.

Rachel: If I’m trying to sell myself, then I feel like you really gotta show all the good parts.

Tanner: I’m kind of the lump sum of all the people who have influenced me over the years. So, I’d say I have a lot of views that do align with my parents, for example. A lot of views that align with my economics teacher. A lot of views that align with friends of mine in Sweden. And then a lot of views that I feel like, maybe I don’t belong to any of those, but maybe some sort of strange amalgamation of them.

Sadie: I’m one of those people that like, usually I’ll like, try to find things to

back up arguments and stuff if it's on my side. Um, that's mostly because I grew up with four older siblings so...you know, we really got to check each other. I'm not about to be the stupid one here.

Abigail: There have been stages of my life where I've been like, really close with people who are kind of controlling. Um, and so like, in order to...like once I came out of those situations in order to like, overcompensate I kind of...I just don't try to affect anyone else's opinions on anything.

Chris: I went with cold hard facts. I love being an engineer...And if I used these weak facts or just like, uh, or...like, there was a couple of them where I just wrote, I just wrote my, like, honest opinion on it. Because I knew I would have to defend it as well. Uh, but most of the time it was I was looking for, for articles and journals that were accredited. That someone could look at and *not beat up the ethos* on it because it would be accredited.

Though the data continually evidenced the importance of identity to argument writing, Table 20 identifies the identity-related factors affecting myside bias shifting observed across cases as writerly self-efficacy, conception of one's work ethic, alignment with a vocation or major perceived to value inquiry, and alignment with social groups also valuing inquiry or those valuing belonging or uniformity.

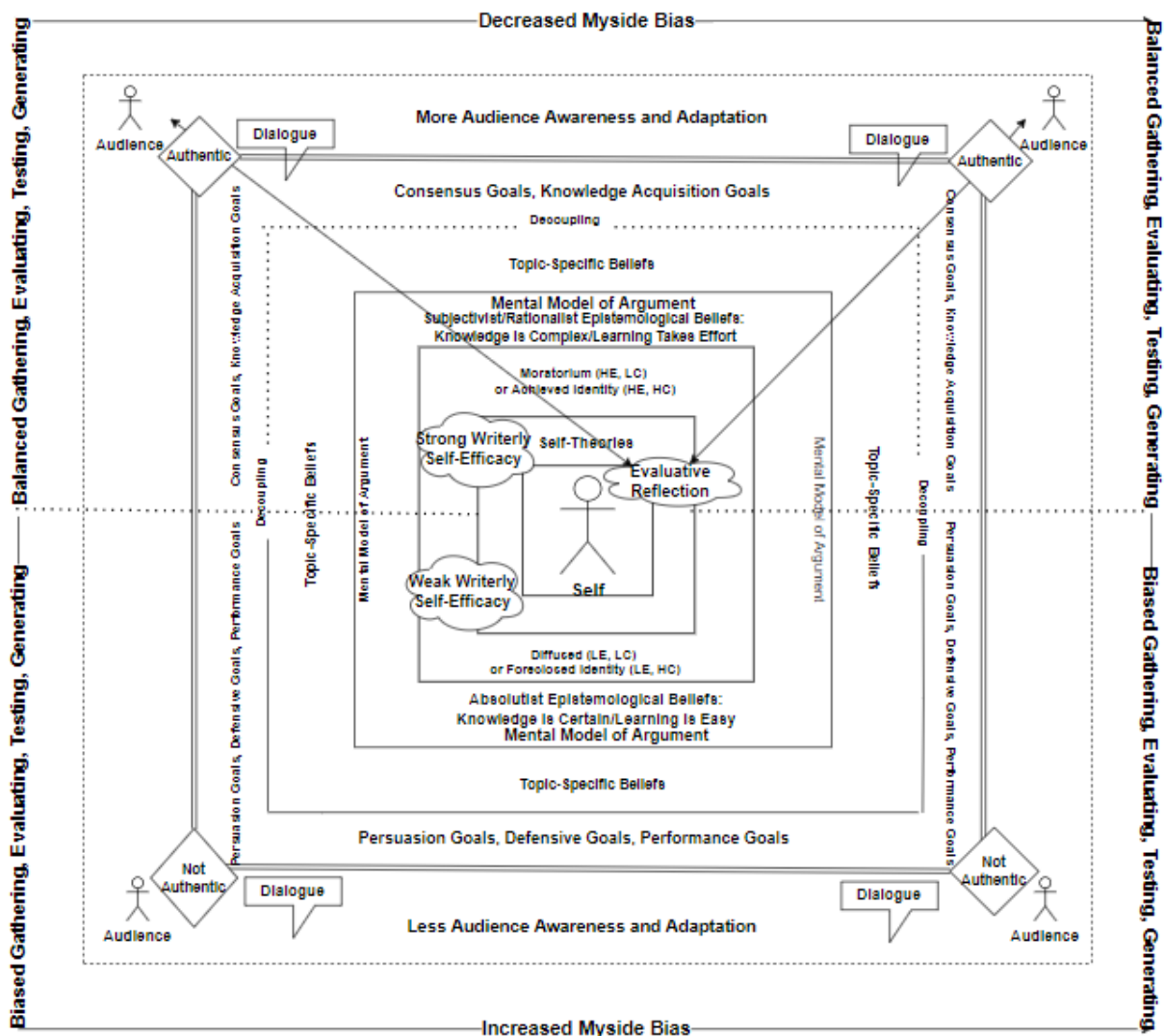
Several of these factors appear to be related. In his description of the agentic perspective of social cognitive theory, Bandura (2001) notes that self-efficacy (interpretation) is directly linked to self-regulation (negotiation) and effort (negotiation):

Efficacy beliefs affect adaptation and change not only in their own right, but through their impact on other determinants...such beliefs influence whether people think pessimistically or optimistically and in ways that are self-enhancing or self-hindering. Efficacy beliefs play a central role in the self-regulation of motivation through goal challenges and outcome expectations. It is partly on the basis of efficacy beliefs that people choose what challenges to undertake, how much effort to expend in the endeavor, how long to persevere in the face of obstacles and failures, and whether failures are motivating or demoralizing. The likelihood that people will act on the outcomes they expect prospective performances to produce depends on their beliefs about whether or not they can produce those performances. (p. 10)

Epistemological beliefs have been linked to identity and development (Klaczynski & Lavalley, 2005) and the two types of epistemological beliefs noted in the current study (speed/effort to learn and nature of knowledge) have previously been correlated and shown to affect how evidence is negotiated (Kardash & Howell, 2000). Conceptual models have been forwarded to explain the relationships between epistemological beliefs, task perceptions, goals, and self-regulation (Bromme et al., 2009; Hofer & Pintrich, 1997; Muis, 2007) which support the findings of the current study (i.e., that interpretations affect negotiation strategies). Argumentation is taxing work. It makes sense that if students see themselves as capable argument writers invested in inquiry-based learning, they will be more likely to expend the effort required to reflect, engage in dialogue, suspend judgment, evaluate evidence carefully, and revise their texts—and that these efforts will shift myside bias downward. The opposite case is equally understandable. Furthermore, if students see themselves as aligned with social groups which value uniformity, who collectively view the world as a place where authority figures or personal experiences dictate “the facts,” then gathering and evaluating evidence, testing hypotheses, and writing arguments in the simplest of ways (i.e., congruent with their biases), seems a natural consequence.

The model presented in Figure 77 builds on previous empirical research and theoretical models, findings from the current study, and the current study’s theoretical framework to explain the relationships between the factors presented in Table 20. A cross-case analysis, viewed through both the empirical and theoretical lenses upon which this study was predicated, suggests that students’ identities heavily impact their myside

Figure 77

Theoretical Model of Myside Bias Shifting

bias through writerly self-efficacy, perceptions about chosen vocational values, perceptions about the values upheld by desirable social group belonging, and epistemological beliefs. These identities affect the ways in which students interpret the argument genre, each rhetorical context encountered, and topic-specific beliefs. Students' interpretations affect the ways in which they negotiate argumentation, likely through

goals, and some interpretations are more likely to mitigate the student's myside bias while others are more likely to maintain or increase it. Reflection and dialogue can lead students to revise their interpretations.

Revisiting Flower's Theory

This study's findings both support and extend Flower's (1994) theory of writing as the construction of negotiated meaning. Described as iterative acts of interpretation, negotiation, and reflection, Flower asserts that—beyond the writing itself—the writing process involves “not just building but rebuilding and revising an image of a literate practice and how to do it” (p. 264). That image, that *theory* about what it means to write in a specific context, guides students toward particular interpretations and strategies for negotiating writing tasks.

“Specific context,” however, is insufficient description for what is actually a complex and continually shifting terrain, including the writer's own identity, purposes, audience, topic and voices discussing it, and the genre. What guides students in writing, according to Flower, is their own theory of the task; she links the effectiveness of those theories to the effectiveness of the writing. The results from the current study support this contention through evidence on the role of epistemological beliefs and reflection in myside bias.

Yet this study extends Flower's theory through its findings on identity in writing arguments. Flower acknowledges that the three literate acts involved in the construction of negotiated meaning—of interpretation, negotiation, and reflection—are highly interrelated and recursively performed. Flower (1994) notes that “reflection, then, is a

tool for negotiating and reconstructing meaning” (p. 266), a proposition supported by the current study’s findings, though reflection is not a guarantee of any particular outcome. Her assertion that, “When writers rehearse their stories of facing, articulating, and coming to grips with problems, they also come to see themselves as thinkers and problem solvers” (p. 267), however, may hinge upon a writer’s identity. This study suggests that the quality of reflection a writer undertakes is likely linked to their identities. While Flower notes that writerly self-efficacy plays a role in motivation and persistence, the current study suggests other components of identity are also at play, including conception of one’s work ethic, alignment with a vocation or major perceived to value inquiry, and alignment with social groups also valuing inquiry or those valuing belonging or uniformity.

Implications

This study’s findings suggest several implications for how curricula are designed and instruction is enacted. These implications are especially relevant for FYC educators and postsecondary Writing Program Administrators (WPAs), though they could also be applied to other educational contexts across the disciplines where the teaching of argument occurs. Additionally, the findings also have implications for secondary educational contexts, where argument as a written genre is formally introduced, practiced, and assessed. Thus, other important stakeholders include secondary school teachers and curriculum designers for language arts and English courses. Finally, because curricula are often the product of legislative or organizational mandate, there are

additional implications for policymakers who wield decision-making authority over curriculum design and instruction, and for stakeholders in Advanced Placement (AP) English and Composition courses.

Given the important role identity plays in myside bias, an important implication for argument teaching and instruction stakeholders is the necessity for consideration of our own. This implies that we ask (and answer), recursively and collaboratively, a series of questions: In what ways do our own identities affect the way we design curricula and enact it within classrooms? How do our interpretations of “argument,” and the teaching of argument, affect our negotiations of helping students learn how to do it? Do we frame “argument” as a debate? A problem-solving activity? An inquiry? And perhaps most importantly, do we see our students as unique individuals who arrive in classrooms with different life experiences, social connections, and educational experiences which render them unequally ready to argue? Effective mitigation of myside bias in written argumentation requires specific responses to these questions, because as the current study suggests, and as Newell et al. (2011) have argued,

Educators do not work with abstractions; they work with students. Teachers need an interactive vision of the reading and writing arguments that can address the hurdles that students often face, that can account for the cognitive and social sources of both success and failure, and that can talk about the experience of reading and writing arguments by being adequately fine grained and situated in that experience. (p. 278)

How “argument” is framed and discussed—*the words* used to teach and learn it—matter. Continued reference to argument as a solely “persuasive” enterprise sets students (and teachers) up for failure. Teaching argument both from and as requiring an inquiry, “essayistic,” or reflexive stance (Qualley, 1997), as a tool whose process is at least as

valuable as its product, is an important step toward students' *myside* bias mitigation. The process, however, is messy and iterative. Ideally, it involves cycles of drafting, feedback, and revision. It involves certain kinds of reflection and dialogue. It involves explicit genre, epistemological, and methodological instruction—and practice with genres, epistemologies, and methods. It involves pedagogical adaptability to students' unique identities, experiences, and contexts. All of this requires considerable time and acceptance of the fact that learning to write arguments is an inefficient and unique process learned over a lifespan (Bazerman et al., 2017). Furthermore, as results from the current study demonstrate, this process is idiosyncratic and does not always follow neat developmental stages.

If teachers and curriculum designers possessed the liberty to create learning experiences such as those described above, we would likely see steep decreases in students' *myside* bias. However, educational contexts are social entities which provide teachers with various levels of agency, and consequences abound. Chris could not imagine sharing his multi-sided argument with his own social circles for fear of being ostracized, suggesting that his *myside* bias was fundamentally an *ourside* bias. In much the same way, the social worlds teachers navigate—including the curricular, administrative, and legislative structures scaffolding those worlds—may similarly constrain them.

This raises an underlying implication for policymakers, including legislators, WPAs, secondary and postsecondary administrators, and standards and curriculum designers: Because effective education in written argumentation requires substantial time

and effort across grades and educational contexts, we should reconsider assumptions regarding student “proficiency” and assessment and instead work collaboratively across contexts to improve it. Students themselves can see the systemic flaws. Abigail’s observation that, regardless of her learning in English 2010,

We still have these *years of prior experience* that are affecting what our expectation of the assignment is. And so, I feel like a lot of it, just growing up, was very aggressive. You know, like, you need to state your opinion and why you’re right and why they’re wrong.

Kevin similarly noted:

Before, I would write kind of in a high school way where you could cheat the system and write words that are kind of fancy and get a high score in the computer rating system. And so, I didn’t have a very good way of writing. I could write well, but not. *I would just write like a typical five-paragraph essay* and that was my writing style.

These student observations are not unique; I’ve heard their refrain in FYC courses for over a decade. The implication from the current study is that argumentation curricula and instruction is likely not best supported by many practices that have become culturally normalized. These include repeated timed argument writing in AP English courses, computer-automated feedback in place of individualized instruction, pro/con debates, standards-based curricula exempting “proficient” writers from further practice, nor standardized writing tests, such as the ACT.

An approach better-supported by the current study would be to teach argument as a form of problem-based inquiry wherein the process, which is both individual and social, was perceived by students to be as valuable as the product. Kevin’s transfer of the feedback/revision cycle to other contexts outside the FYC course provides one example for why this is so. Yet, importantly, if such an approach were to be taken, the “problem”

upon which inquiries were based would ideally be seen as relevant to the student's own life. Abigail's exasperation with being required to write arguments about the best type of chocolate is perfectly understandable. A more productive approach would not frame argument as a dichotomous side-picking activity, as the two-sides-to-any-issue approach minimizes the complexity involved in solving real-world problems and exacerbates myside bias. A more productive pedagogy would ensure student-constructed arguments served an authentic communicative purpose with an actual audience—and this implies that the medium matters. As Chris noted,

I heard a couple people talking about it. It's like, "I have his paper and I want it to do something." I'm supposed to want it to do something. But it's like, it's almost like an essential crisis for the paper. Is just like, how is the audience going to read it? And I haven't found an answer for it.

Students need to perceive their work as authentic and meaningful in order to persist through the taxing work argumentation requires. This requires support networks, both within and without the individual, to effectively achieve.

Significance

This study is significant because it clarifies the variety of ways in which myside bias shifts among college students in an FYC course designed to mitigate it while increasing rhetorical awareness. Several novel approaches were taken in the study: Research was conducted in an authentic setting over the course of a semester, used qualitative methods, and applied a socio-cognitive theoretical framework to better understand the role social factors and contexts play in the phenomenon. Myside bias was operationalized more comprehensively than former studies, which enabled observation

and analysis of the evidence gathering and evaluation, hypothesis testing, and writing behaviors of the students in the study. These unique approaches provide detailed insight into the trajectories of seven students over time.

The study is also significant because it provides theoretically informed, empirically-based findings on pedagogical strategies for practical classroom application. Postsecondary and secondary argument teachers can use the findings from this study to generate, reconsider, or revise their curricula and instructional practices toward the goal of student myside bias mitigation. As the factors in Table 20 and the previous discussion indicate, issues for particular consideration include: student identities, the ways in which student interpretations affect their goals and subsequent myside bias negotiation strategies, and the roles reflection, dialogue, and rhetorical awareness play in the phenomenon. Teaching students to mitigate their myside bias is not easy. However, it is a critically important learning objective for many reasons, as discussed below. Gee (2015) has argued that,

A text, whether written on paper, or on the soul (Plato), or on the world (Freire), is a loaded weapon. The person, the educator, who hands over the gun, hands over the bullets (the perspective) and must own up to the consequences. There is no way out of having an opinion, an ideology, and a strong one, as did Plato, as did Freire. Literacy education is not for the timid. (pp. 87-88).

Beyond the value for educators, this study is significant because of its benefit to students themselves. For both academic and personal purposes, argumentation that mitigates myside bias is valuable, because students' own reception and distribution of these "loaded weapon[s]" must, like educators, also own the consequences. The value of argumentation that mitigates myside bias for a student's academic life is clear: argument

is one of the most commonly-assigned genres for both reading and writing in postsecondary contexts. In academia, primarily concerned with the pursuit and sharing of knowledge, myside bias is a “sin against reasonableness” (Ferretti & Fan, 2016), which obscures open-minded, critical and creative thinking.

Yet the value of mitigated myside bias for students goes well beyond their roles as students. I view education as that which liberates the learner from all that constrains them from understanding themselves, others, and the world, in all their incarnations. Myside bias holds individuals in the mental caves of their own minds—or at best—those of their social group collectives. Because college students are typically emerging adults, a formative life stage in which people are especially malleable, their practice negotiating myside bias holds the potential for stronger decision-making and problem-solving skills well outside academic realms, including personal, vocational, and public contexts. Such growth capability, if accomplished during this formative period, stands to benefit students through all their lives.

Finally, this study is significant because of its larger societal implications. Human beings learn in many ways and places, and schools are just one of many options among them. In his discussion of the capacity of literacy education in schools to exact social change, Gee (2015) writes,

Schools alone cannot change society. In our current age of massive and growing inequity, we must create a new social will to pursue social fairness and opportunity for all. But schools are, nonetheless, a crucial instance of the social institutions that can perpetuate or change social hierarchies. It is in school that each of us is socialized into practices which go beyond the home and peer group and initiate us into the “public sphere,” at least in much of the Western world. (p. 53)

In the current moment, the U.S. “public sphere” is experiencing extreme political polarization and a resultant legislative paralysis. Bishop (2008) has observed that, over the past three decades of moving, Americans have “clustered in communities of sameness, among people with similar ways of life, beliefs, and in the end, politics” (p. 5). Hess (2009) asserts that “people in the U.S. do not demand wide diversity in their political news climate—and, not surprisingly, they do not receive it. The effects of these trends are undeniably dangerous for a democracy” (p. 21). Echoes of these realities pepper Chris’s case in Chapter IV, and his perception of the social consequences of stepping out of line alarmed him well enough to keep him in step.

Myside bias threatens democratic nations; this threat is amplified when, as is the case of the U.S., the nation is comprised of diverse people, value systems, ideologies, and circumstances. The current study suggests methods through which we might collectively work toward the balanced integration of multiple perspectives in problem-solving and decision-making. Our collective and “formidable capacity to build walls around and between selves” (Hansen, 2010, p. 7), must shift toward a shared desire for inquiry, knowledge, dialogue, and the actual *doing* of democracy.

Future Research

This study investigated myside bias shifting in college students in an authentic classroom setting over the period of a semester, through qualitative methods, and by integrating cognitive and social perspectives. Such research has been explicitly called for by literacy education scholars. The findings of this study suggest several future research

investigations.

Given the important role epistemological beliefs play within myside bias shifting, future research on their specific effects would be valuable. A general lack of agreement regarding how epistemological beliefs are defined, operate, and develop, coupled with differences in operationalization across studies, complicates our understanding (Bromme et al., 2009; Hofer & Pintrich, 1997; Hofer & Sinatra, 2009; Muis, 2007).

Epistemological beliefs consist of various types, including beliefs about the nature, certainty, and production of knowledge, as well as the speed/effort involved in learning (Kardash & Howell, 2000). Additionally, they may be conceptualized as multi-level constructs including domain-general and domain-specific levels (Berding et al., 2017). Future studies might take a more focused look at pedagogical approaches designed to alter students' epistemological beliefs toward myside bias mitigation.

Another important factor in myside bias in the current study was found to be identity, which has been argued to develop alongside epistemological beliefs (Mason & Scirica, 2006; Klaczynski & Lavalley, 2005). Of particular benefit to postsecondary teachers of argument would be future research on the relationships between identity and myside bias. Given the fact that most college students are emergent adults highly invested in identity formation, who are going through a difficult and formative period of their lives, studies investigating the relationship between identity and myside bias through the lens of emergent adulthood theory (Arnett, 1994, 2000, 2015, 2016) may hold particular value for both students and teachers in postsecondary contexts. If identity is defined as a sense of one's past, present, and future selves (Erikson, 1968) involving processes of

exploration and commitment (Klaczynski & Lavalley, 2005), emerging adulthood seems a ripe area for investigations into its effects on myside bias.

A final recommendation for research is methodological in nature. When studying myside bias as a multi-faceted phenomenon (i.e., operationalized to include gathering, evaluating, hypothesizing, and writing behaviors), a more granular view of these activities would be incredibly useful. Particularly because reflection and dialogue are both implicated as a factor reducing myside bias, post-hoc interviews not only require accurate recall for validity but may in fact shift myside bias up or down, depending on contextual variables. Think-aloud protocols hold promise for expanding our understanding of exactly what occurs as students gather and evaluate evidence, hypothesize, and write arguments, in real time. Research involving think-aloud protocols would ideally be authentically situated within the social contexts students typically encounter, and would require multiple participants, preferably over time, in order to capture the variety undoubtedly to be seen among individuals in various rhetorical contexts.

Summary

This study expands on former studies of myside bias by taking unique theoretical and methodological approaches in response to former calls for research. The study investigated whether and how seven students in FYC classrooms shift their myside bias in response to a curriculum designed to mitigate it and increase rhetorical awareness.

Findings indicated a general overall trend in myside bias reduction from the beginning to end of the course. However, a stand-out feature of the study was the incredible

variety between cases, depending on factors articulated within the study. Overarching findings suggested that: (1) students' identities affect myside bias shifting positively and negatively through self-efficacy, social group alignment, and epistemological beliefs; (2) the ways students interpreted themselves, the argument genre, evidence, and their audiences affected the ways in which they negotiated their myside bias, often through goals; and (3) reflection and dialogue are negotiation strategies which, depending upon their quality and contextual factors, can result in revised interpretations, goals, and negotiations of myside bias. Implications include curriculum and instruction suggestions for teachers, curriculum designers, and policymakers invested in written argument in secondary and postsecondary contexts.

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APPENDICES

Appendix A

Survey One

Survey One

Note: Items in red indicate “balanced” argument schema and items in black indicate a “fact-based” argument schema.

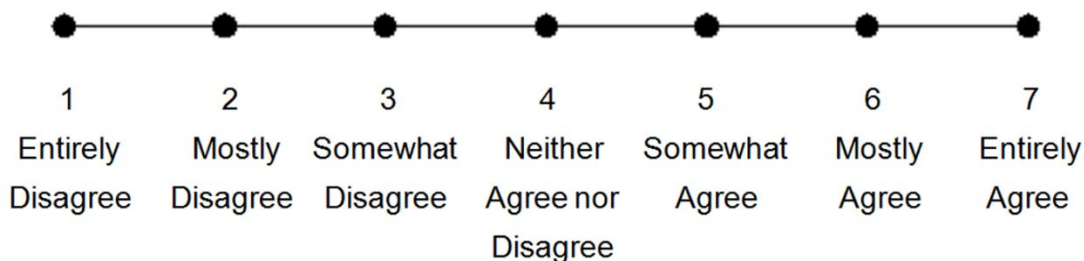
Background

1. What is your gender?
2. What is your age?
3. What is your year in college?
3. What was the last English class you took?
4. Please describe the structure and content of a good persuasive essay.
5. Please describe what makes a source (news, article, book, webpage, person, etc.) a CREDIBLE source.
6. How do you feel about research in preparation for writing an essay on the topic of your choosing?
7. How do you learn best? Do you prefer visual aids? Lecture? Discussions? Group work? Face-to-face or online courses?
8. How do you perceive yourself as a non-fiction (textbooks, how-to, articles, news) reader?
9. How do you perceive yourself as an essay writer?
10. How do you feel about taking English 2010?
11. Is there anything else you'd like to tell me?

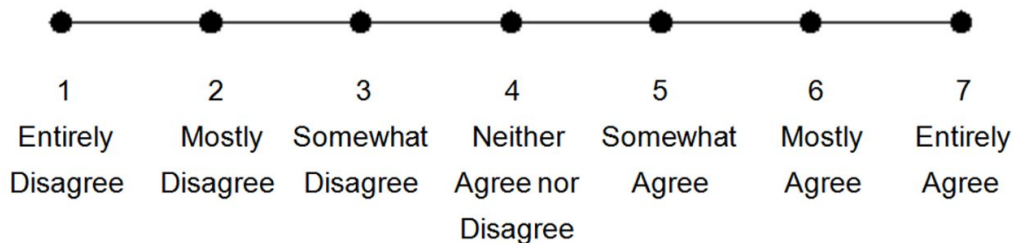
What Makes a Good Argument?

Instructions: Please rate your agreement with each of the following statements on a scale from 1–7, where 1 indicates entire disagreement and 7 indicates entire agreement

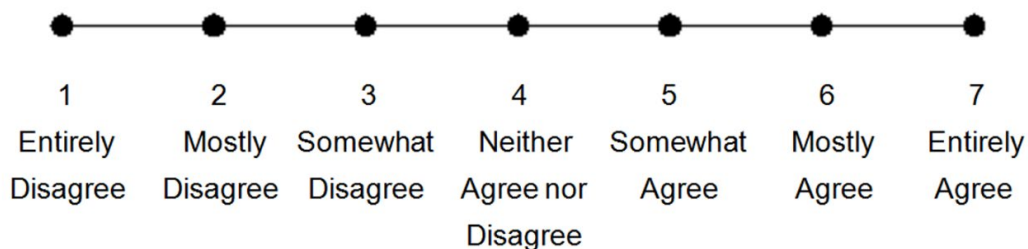
1. A good argument is always well supported. You must have references and factual information to support your side of the argument.



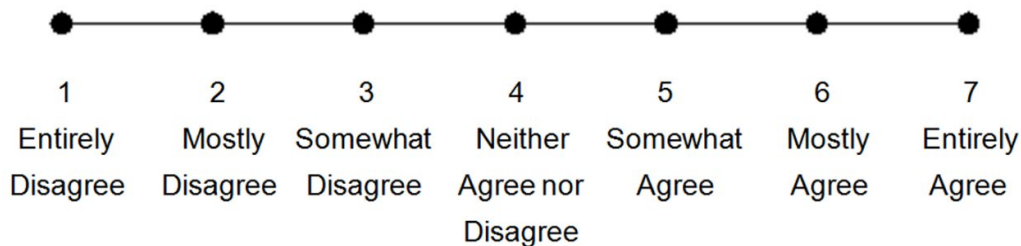
2. A strong argument presents both sides of the issue. In doing so it should point out the flaws in the opposing side, while highlighting the positive aspects of the side being promoted.



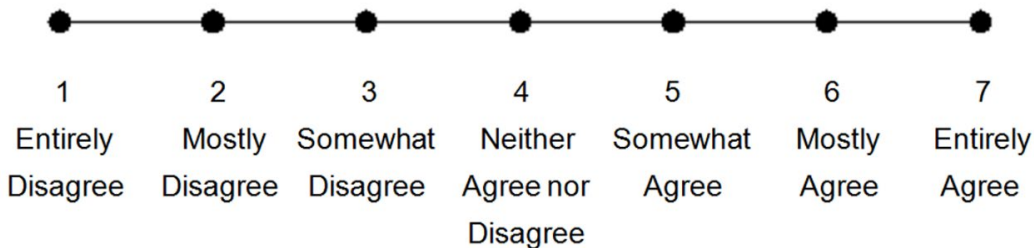
3. Relevant quotes, tables, graphs, statistics, and other factual information make an argument convincing.



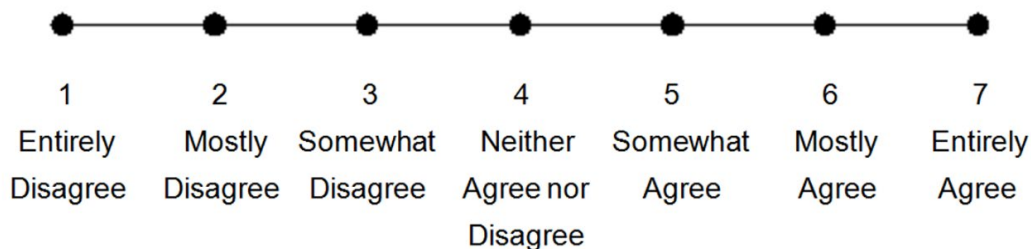
4. A good argument looks at both sides of an argument, recognizes validity on both sides, and then gives reasons as to why one side is better than another.



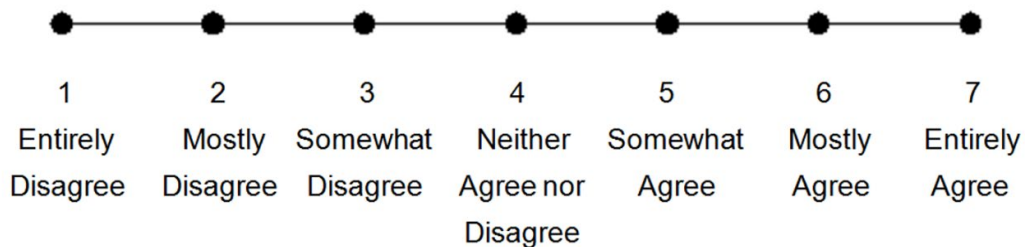
5. The essence of a good argument is factual support for the thesis or claim.



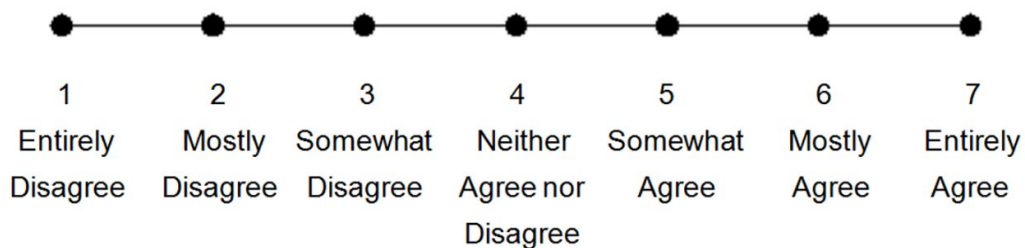
6. Support, factual references and passion about the topic make for strong arguments.



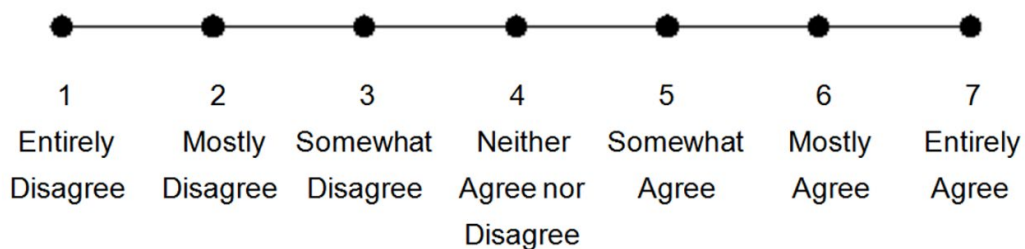
7. A winning argument is a claim supported by facts.



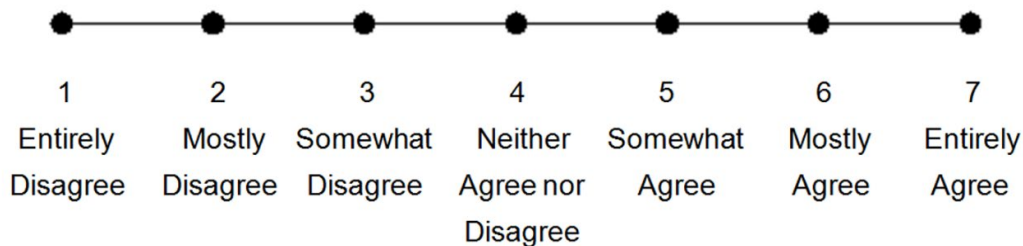
8. Facts (numbers and percentages are usually very convincing). Support of facts.
Respectable sources of information. That's what you need to make a strong argument.



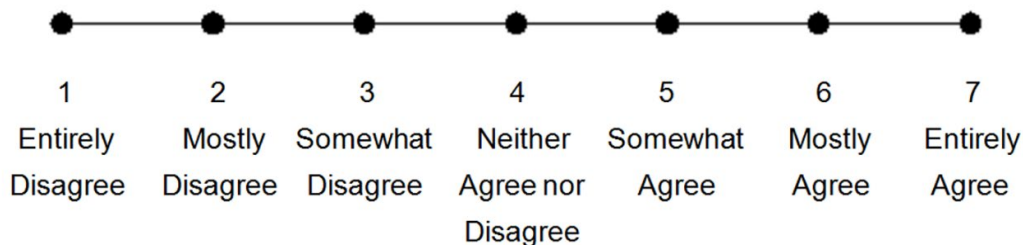
9. I feel a good argument gives opinions from both sides of the argument then shows why their side is correct, or better.



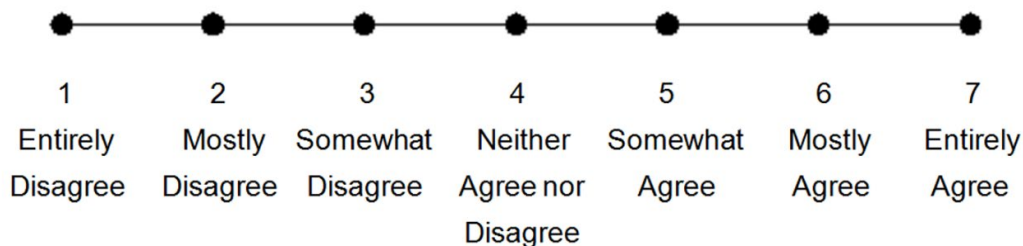
10. I think a strong argument is based on facts that cannot be refuted. If there is solid evidence that cannot be disputed due to its truthfulness you have a solid argument.



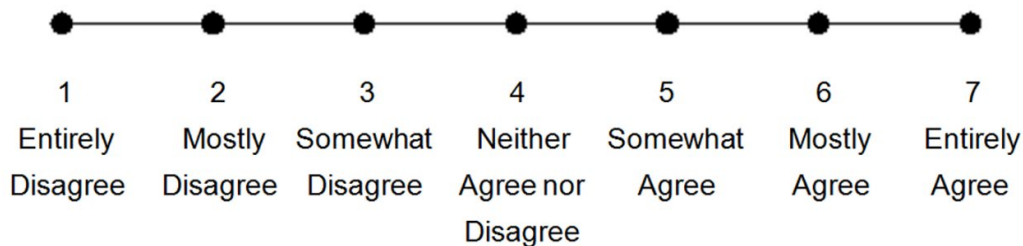
11. A good argument takes into account both sides of an argument, and uses objective logic to promote one side and refute claims made on the other side.



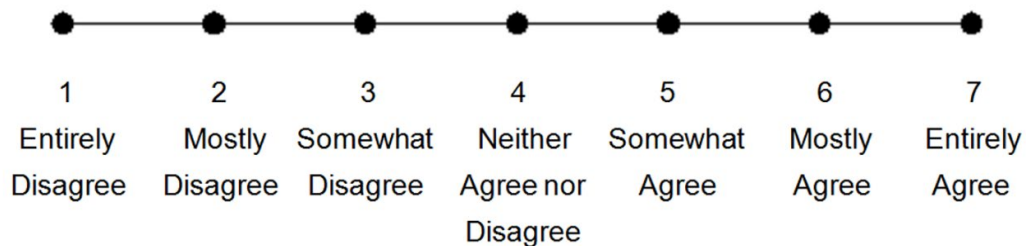
12. A good argument is one that has plenty facts to back it up. Anyone can be won over if there are enough facts.



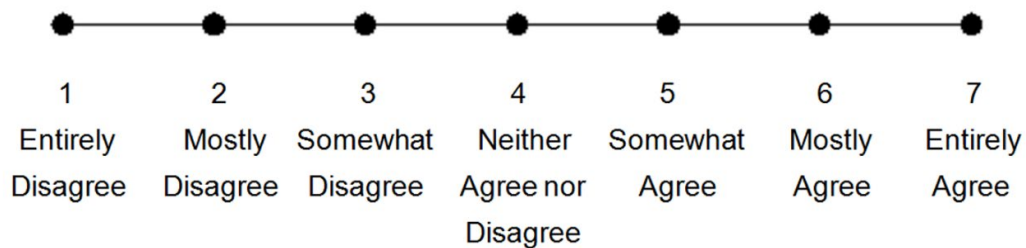
13. Cold hard facts, no speculation, and pointing out the most important things make an argument strong.



14. A good argument gives opinions from both sides of the argument then shows why their side is correct, or better.



15. What makes a good argument is having a lot of factual information.



Appendix B

Survey Two

Survey Two

Note: Items in red indicate “balanced” argument schema and items in black indicate a “fact-based” argument schema.

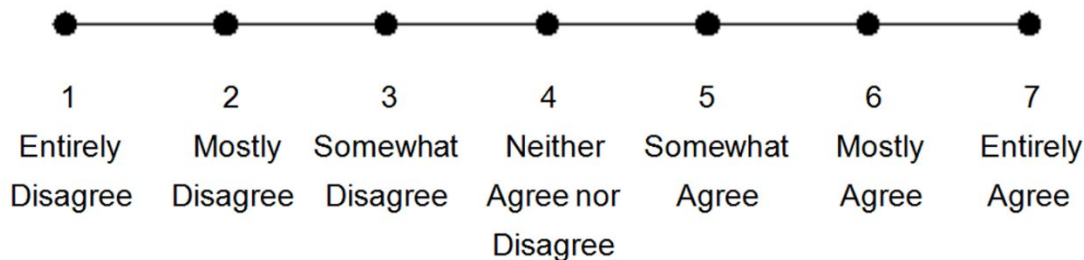
Reflection

1. What are the major “takeaways” for you now that you’ve completed English 2010? In other words, what have you learned?
2. Please describe the structure and content of a good persuasive essay.
3. Please describe what makes a source (news, article, book, webpage, person, etc.) a CREDIBLE source.
4. How do you feel about researched essay writing?
5. How do you perceive yourself as a non-fiction (textbooks, how-to, articles, news) reader?
6. How do you perceive yourself as an essay writer?
7. Is there anything else you’d like to tell me?

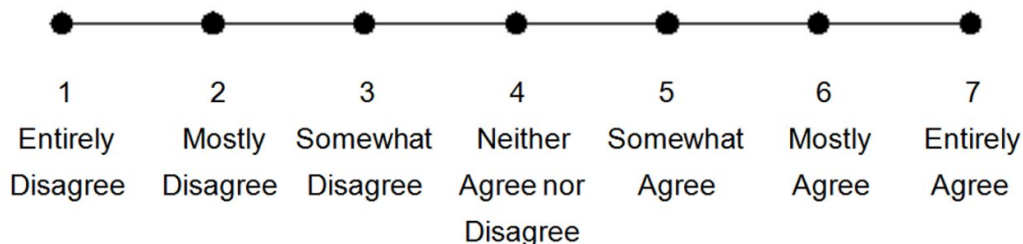
What Makes a Good Argument?

Instructions: Please rate your agreement with each of the following statements on a scale from 1–7, where 1 indicates entire disagreement and 7 indicates entire agreement

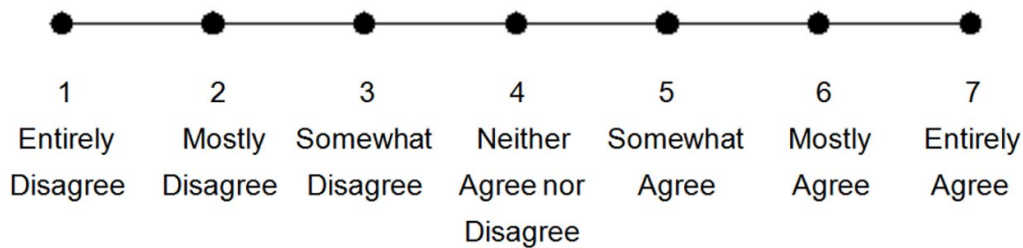
1. A good argument is always well supported. You must have references and factual information to support your side of the argument.



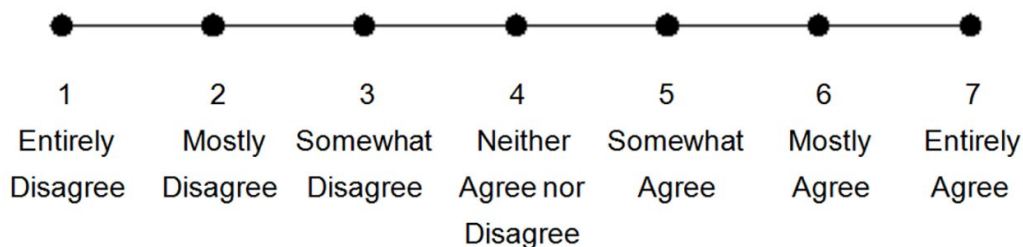
2. A strong argument presents both sides of the issue. In doing so it should point out the flaws in the opposing side, while highlighting the positive aspects of the side being promoted.



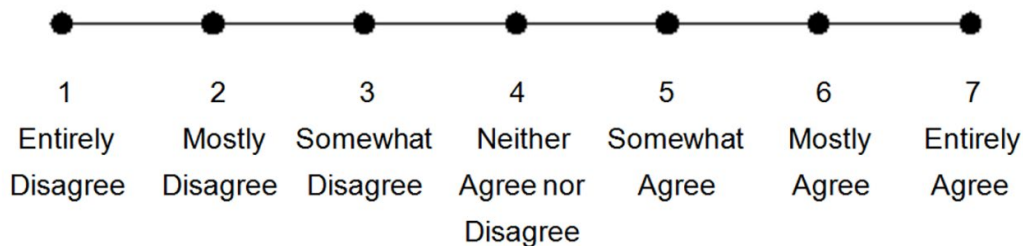
3. Relevant quotes, tables, graphs, statistics, and other factual information make an argument convincing.



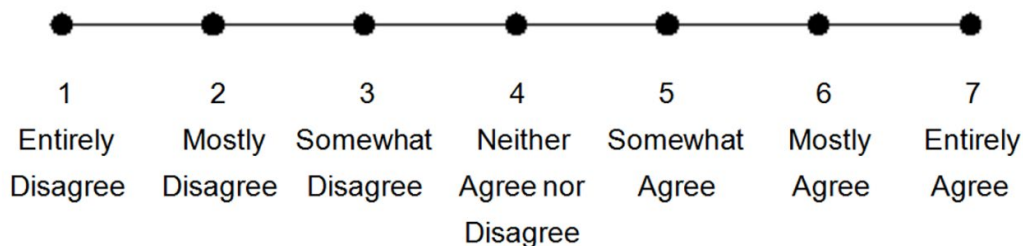
4. A good argument looks at both sides of an argument, recognizes validity on both sides, and then gives reasons as to why one side is better than another.



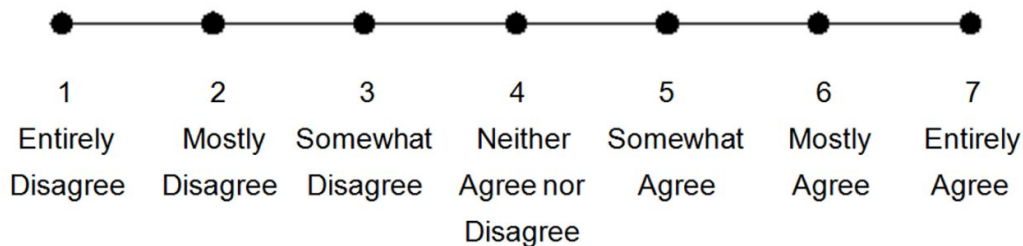
5. The essence of a good argument is factual support for the thesis or claim.



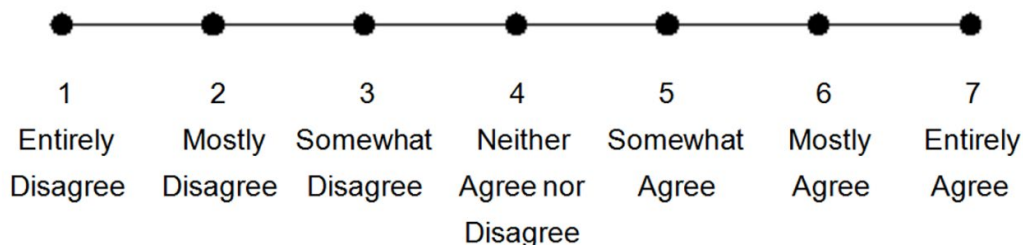
6. Support, factual references and passion about the topic make for strong arguments.



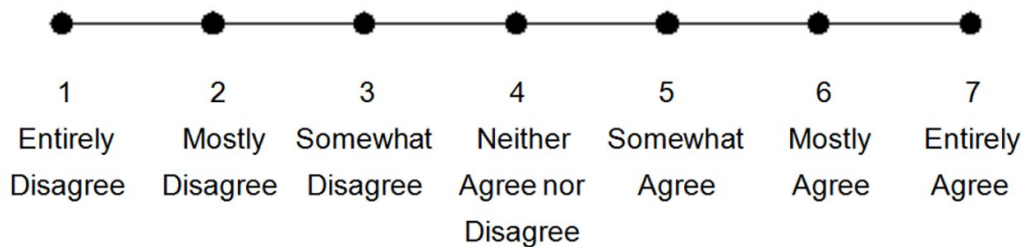
7. A winning argument is a claim supported by facts.



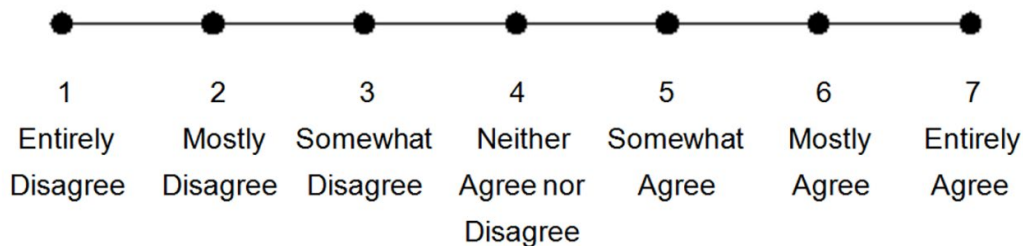
8. Facts (numbers and percentages are usually very convincing). Support of facts.
Respectable sources of information. That's what you need to make a strong argument.



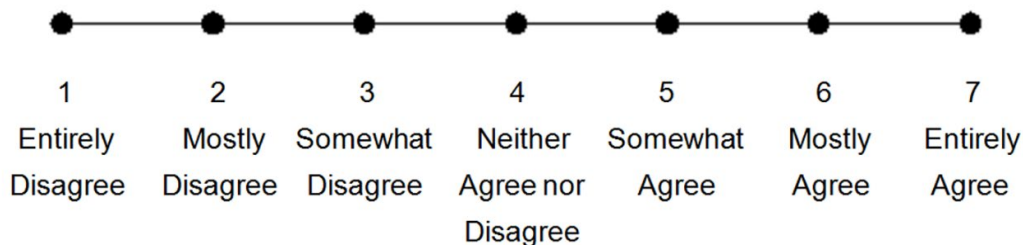
9. I feel a good argument gives opinions from both sides of the argument then shows why their side is correct, or better.



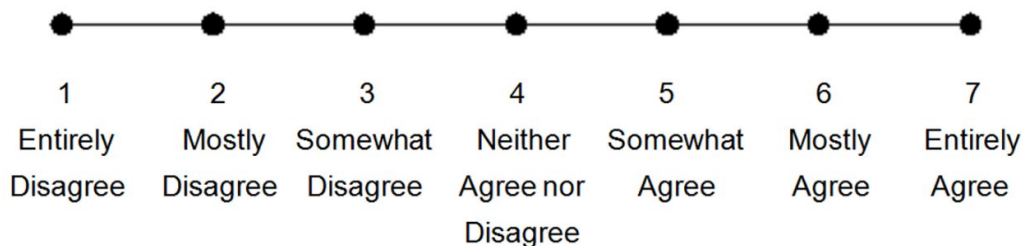
10. I think a strong argument is based on facts that cannot be refuted. If there is solid evidence that cannot be disputed due to its truthfulness you have a solid argument.



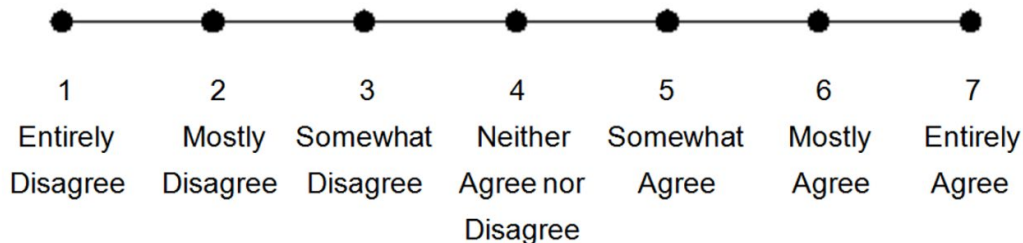
11. A good argument takes into account both sides of an argument and uses objective logic to promote one side and refute claims made on the other side.



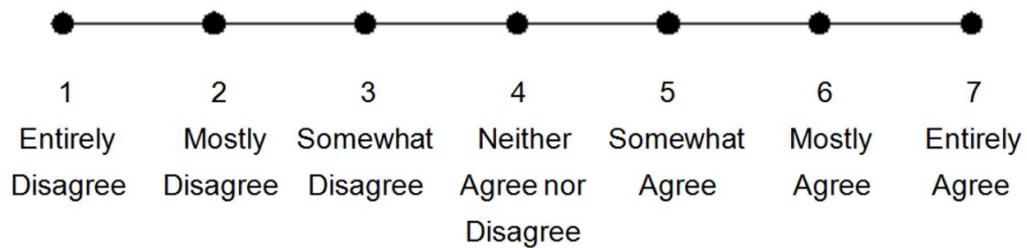
12. A good argument is one that has plenty facts to back it up. Anyone can be won over if there are enough facts.



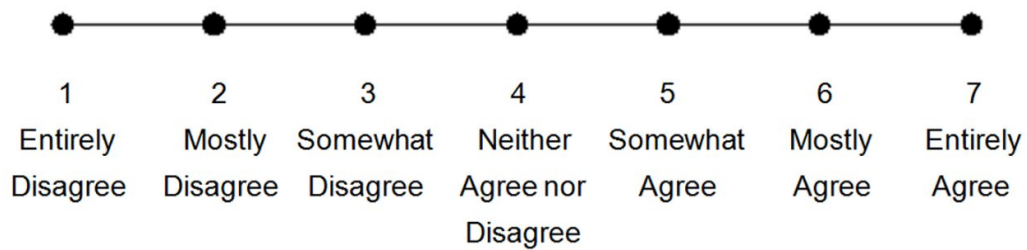
13. Cold hard facts, no speculation, and pointing out the most important things make an argument strong.



14. A good argument gives opinions from both sides of the argument then shows why their side is correct, or better.



15. What makes a good argument is having a lot of factual information.



Appendix C
Interview Protocols

Interview Protocol #1

Opinion

[Instructions for Interviewer: explain to the participant that this interview will cover a hypothetical argument writing scenario that he/she might undertake in English 2010.]

1. If you were to write an argumentative essay today, what topic would you choose to write about? What would your opinion be on that topic? In other words, what would your thesis be?
2. Why would you argue that position? Can you tell me why you feel it's important to you? What parts of your background do you think may have led you to form this opinion, and why?

Gathering

3. How would you go about searching for, locating, and/or selecting evidence to include? Can you describe what your process would be like?
4. What kind of evidence would you be looking for? Why those kind?

Evaluating

5. What kind of evidence would you listen to, read, or think about to help you write the argument? Can you describe what your process would be?
6. Let's imagine that you have found an opinion or some evidence that contradicted your own opinion. How would you go about evaluating that opinion or evidence? In what ways would you listen to, read, or think about that evidence? Can you describe what your process would be?

Testing

7. Let's imagine that you have not yet written the argumentative essay but you've decided what opinion you want to argue for your thesis. What would you do with any information/evidence that did not support your opinion?
8. Let's imagine a **different scenario**. In this situation, you have found two contrary opinions on an issue, each with evidence supporting them. *[Interviewer: try to use the position the participant stated at the outset of the interview to make this relevant/clear to the participant: attempt to articulate polar opposite claims, e.g., "Let's say pro-life vs. pro-choice."]* You've already formulated your own opinion, *[restate the participant's opinion from above, e.g., "You're pro-life."]* How would you make a decision about which opinion to use as your argument? Can you describe what that decision-making process might be?

Generating

9. Now let's imagine it's time to write the essay. You've chosen the opinion you want to argue in the essay. What kind of information, evidence, and examples will you **include** in the essay? Why would you include these things?
10. What kind of information, evidence, or examples will you **exclude** from the essay? Why would you exclude these things?

Rhetorical Awareness

11. What would your goal be in writing this essay?
12. Who would your audience be for this essay? In other words, who do you imagine reading it? How do you think your reader would respond to your argument? Why?
13. As you are going through these processes of gathering, evaluating, testing, and writing the essay—would you be thinking about your reader? Can you tell me more about that?

Summary

14. Is there anything else you'd like to share with me about your experiences in the course so far?

Interview Protocol #2

Opinion

[Instructions for Interviewer: explain to the participant that this interview will cover his or her experiences writing the Brief and Opposition essays.]

1. Tell me about your argument in the **Brief** essay. What topic did you choose to write about? What was your opinion that topic? In other words, what was your thesis?
2. Why did you argue that position? Can you tell me more about why you feel it's important to you? What parts of your background do you think may have led you to form this opinion?
3. Tell me about your argument in the **Opposition** essay. How did you feel about writing this essay, and why do you think you felt this way? Can you tell me more about your experience?

Gathering

4. How did you go about searching for, locating, and/or selecting evidence to include in the **Brief** essay? What kind of evidence were you looking for, and why? Can you describe your process?
5. How did you go about searching for, locating, and/or selecting evidence to include in the **Opposition** essay? What kind of evidence were you looking for, and why? Can you describe your process?

Evaluating

6. What kind of evidence did you listen to, read, or think about to help you write the **Brief** essay? How did you go about evaluating that evidence? How did you read and think about that evidence? Can you describe your process?
7. While working on the **Brief** essay, did you consider opinions/evidence which contradicted your opinion? *[If yes]* How did you evaluate them? In what ways did you listen to, read, or think about them? Can you describe what your process was like?
8. What kind of evidence did you listen to, read or think about to help you write the **Opposition** essay? How did you go about evaluating that evidence? In other words, did you listen to it? How did you read and think about that evidence? Can you tell me more about what that process looked like?
9. While working on the **Opposition** essay, did you consider opinions/evidence which contradicted your opinion? *[If yes]* How did you evaluate them? In what ways did you listen to, read, or think about them? Can you describe what your process was like?

Testing

10. While working on the **Brief** essay, what did you do with any information/evidence that did not support your opinion/thesis? How did you decide what to argue for your thesis on this topic? Can you describe your decision-making process?
11. While working on the **Opposition** essay, what did you do with any information/evidence that did not support your assigned thesis? Now that you've written two opposing arguments on the same topic, which argument have you decided represents your actual opinion? How have you arrived at that decision?

Generating

12. What kind of information, evidence, and examples did you **include** in the **Brief** essay? Why did you include these things? What kind of information, evidence, or examples did you **exclude** from the essay? Why did you exclude these things?
13. What kind of information, evidence, and examples did you **include** in the **Opposition** essay? Why did you include these things? What kind of information, evidence, or examples did you **exclude** from the essay? Why did you exclude these things?

Rhetorical Awareness

14. What was your **goal** in writing the **Brief** essay, and why? What was your **goal** in writing the **Opposition** essay, and why?
15. Who was your **audience** for the **Brief** essay? In other words, who did you imagine reading it? How do you think your reader would respond to your **Brief** essay? Who was your **audience** for the **Opposition** essay? In other words, who did you imagine reading it? How do you think your reader would respond to your **Opposition** essay?
16. As you went through the processes of gathering, evaluating, testing, and writing the **Brief** essay—were you thinking about your reader? Can you tell me more about that? While you went through the process of gathering, evaluating, testing, and writing the **Opposition** essay—were you thinking about your reader? Can you tell me more about that?

Summary

17. I noticed in class you said ____ can you tell me more about that?
18. Is there anything else you'd like to share with me about your experiences in the course so far?

Interview Protocol #3

Opinion

[Instructions for Interviewer: explain to the participant that this interview will cover his or her experiences with the Stasis, Graphic Organizer, and Toulmin assignments.]

1. Tell me about your **Graphic Organizer**. What topic did you choose to research, and why? What opinion or position did you forward at the end of the **Graphic Organizer Reflection** essay? In other words, what was your thesis?
2. Why did you choose that position? Can you tell me more about why it's important to you? What parts of your background do you think may have led you to form this opinion?
3. Tell me about your revised (final) thesis for the **Toulmin** assignment. Did this thesis differ from the one you stated in the **Graphic Organizer Reflection** essay? *[If yes]* How is it different? Why do you think it changed? *[If no]* Why do you think it did not change?

Gathering

4. How did you go about searching for, locating, and/or selecting arguments/evidence to include in the **Stasis** assignment? What kind of evidence were you looking for, and why? Can you describe that process?
5. How did you go about searching for, locating, and/or selecting arguments/evidence to include in the **Graphic Organizer**? What kind of evidence were you looking for, and why? Can you describe that process?
6. How did you go about searching for, locating, and/or selecting arguments/evidence to include in the **Toulmin** assignment? What kind of evidence were you looking for, and why? Can you describe that process?

Evaluating

7. While working on the **Stasis** assignment, how did you *evaluate* opinions and evidence? Further, how did you *evaluate* opinions/evidence you encountered which contradicted your opinion, particularly those mentioned to you by your peers? In what ways did you listen to, read, or think about them? Can you describe what your process was like?
8. While working on the **Graphic Organizer** assignment, how did you *evaluate* opinions and evidence? Further, how did you *evaluate* opinions/evidence you encountered which contradicted your opinion, particularly those mentioned to you by your peers? In what ways did you listen to, read, or think about them? Can you

describe what your process was like?

9. While working on the **Toulmin** assignment, how did you *evaluate* opinions and evidence? Further, how did you *evaluate* opinions/evidence you encountered which contradicted your opinion, particularly those mentioned to you by your peers? In what ways did you listen to, read, or think about them? Can you describe what your process was like?

Testing

10. Once you had decided on a thesis for the **Graphic Organizer Reflection** essay, what did you do with any information/evidence that did not support your thesis? How did you decide what to argue for your thesis on this topic? Can you describe your decision-making process?
11. Once you had decided on a thesis for the **Toulmin** assignment, what did you do with any information/evidence that did not support your thesis? How did you decide what to argue for your thesis on this topic? Can you describe your decision-making process?

Generating

12. What kind of information, evidence, and examples did you **include** in the **Stasis** assignment? Why did you include these things? What kind of information, evidence, or examples did you **exclude** from the **Stasis** assignment? Why did you exclude these things?
13. What kind of information, evidence, and examples did you **include** in the **Graphic Organizer**? Why did you include these things? What kind of information, evidence, or examples did you **exclude** from the **Graphic Organizer**? Why did you exclude these things?
14. What kind of information, evidence, and examples did you **include** in the **Toulmin** assignment? Why did you include these things? What kind of information, evidence, or examples did you **exclude** from the **Toulmin** assignment? Why did you exclude these things?

Rhetorical Awareness

15. What was your goal in the **Stasis** assignment, and why? What was your goal in the **Graphic Organizer** assignment, and why? What was your goal in the **Toulmin** assignment, and why?
16. Who is your **audience** for the final paper, the **PAI**? In other words, who do you imagine will be reading it? How do you think your reader will respond to the argument you will propose?

17. As you went through the processes of gathering, evaluating, testing, and writing the **Stasis, Graphic Organizer, and Toulmin** assignments—were you thinking about your reader? Can you tell me more about that?

Summary

18. I noticed in class you said _____ can you tell me more about that?
19. Is there anything else you'd like to share with me about your experiences in the course so far?

Interview Protocol #4

Opinion

[Instructions for Interviewer: explain to the participant that this interview will cover his or her experiences with the Proposal Argument from Inquiry Outline assignment.]

1. Tell me about your **Proposal Argument from Inquiry Outline**. What topic did you choose to research, and why? What opinion or position did you forward as your thesis?
2. Why did you choose that position? Can you tell me more about why it's important to you? What parts of your background do you think may have led you to form this opinion?
3. Did this thesis differ from the one you stated in the **Toulmin** assignment? *[If yes]* How is it different? Why do you think it changed? *[If no]* Why do you think it did not change?

Gathering

4. How did you go about searching for, locating, and/or selecting arguments/evidence to include in the **Outline**?
5. What kind of evidence were you looking for, and why? Can you describe that process?

Evaluating

6. While working on the **Outline** assignment, how did you *evaluate* opinions and evidence?
7. Further, how did you *evaluate* opinions/evidence you encountered which contradicted your opinion, particularly those mentioned to you by your peers? In what ways did you listen to, read, or think about them? Can you describe what your process was like?

Testing

8. Once you had decided on a thesis for the **Outline** assignment, what did you do with any information/evidence that did not support your thesis?
9. How did you decide what to argue for your thesis on this topic? Can you describe your decision-making process?

Generating

10. What kind of information, evidence, and examples did you **include** in the **Outline** assignment? Why did you include these things?
11. What kind of information, evidence, or examples did you **exclude** from the **Outline** assignment? Why did you exclude these things?

Rhetorical Awareness

12. What was your goal in the **Outline** assignment, and why?
13. Who is your **audience** for the final paper, the **Proposal Argument from Inquiry**? In other words, who do you imagine will be reading it? How do you think your reader will respond to the argument you will propose?
14. As you went through the processes of gathering, evaluating, testing, and writing the **Outline** assignment—were you thinking about your reader? Can you tell me more about that?

Summary

15. I noticed in class you said ____ can you tell me more about that?
16. Is there anything else you'd like to share with me about your experiences in the course so far?

Interview Protocol #5

Opinion

[Instructions for Interviewer: explain to the participant that this interview will cover his or her experiences with the Proposal Argument from Inquiry final paper.]

1. Tell me about your **Proposal Argument from Inquiry** final paper. What topic did you choose to research, and why? What opinion or position did you forward as your thesis?
2. Why did you choose that position? Can you tell me more about why it's important to you? What parts of your background do you think may have led you to form this opinion?
3. Did this thesis differ from the one you stated in the **Outline** assignment? *[If yes]* How is it different? Why do you think it changed? *[If no]* Why do you think it did not change?

Gathering

4. How did you go about searching for, locating, and/or selecting arguments/evidence to include in the **Proposal Argument from Inquiry** final paper?
5. What kind of evidence were you looking for, and why? Can you describe that process?

1. Evaluating

6. While working on the **Proposal Argument from Inquiry** final paper, how did you evaluate opinions and evidence?
7. Further, how did you evaluate opinions/evidence you encountered which contradicted your opinion, particularly those mentioned to you by your peers? In what ways did you listen to, read, or think about them? Can you describe what your process was like?

Testing

8. Once you had decided on a thesis for the **Proposal Argument from Inquiry** final paper, what did you do with any information/evidence that did not support your thesis?
9. How did you decide what to argue for your thesis on this topic? Can you describe your decision-making process?

Generating

10. What kind of information, evidence, and examples did you **include** in the **Proposal Argument from Inquiry** final paper? Why did you include these things?
11. What kind of information, evidence, or examples did you **exclude** from the **Proposal Argument from Inquiry** final paper? Why did you exclude these things?

Rhetorical Awareness

12. What was your goal in the **Proposal Argument from Inquiry** final paper, and why?
13. Who is your **audience** for the final paper, the **Proposal Argument from Inquiry**? In other words, who do you imagine will be reading it? How do you think your reader will respond to the argument you will propose?
14. As you went through the processes of gathering, evaluating, testing, and writing the **Proposal Argument from Inquiry** final paper—were you thinking about your reader? Can you tell me more about that?

Summary

15. I noticed in class you said ____ can you tell me more about that?
16. Is there anything else you'd like to share with me about your experiences in the course so far?

Appendix D

Rhetorically Aware and Non-Biased Argumentative Writing Rubric

Rhetorically Aware and Non-Biased Argumentative Writing Rubric

Rhetorically Aware and Non-Biased Argumentative Writing Rubric					
1. Audience Articulation	Score: 5			Score: 0	
	An audience is stated			An audience is not stated	
2. Audience Analysis	Score: 10		Score: 5		Score: 0
	Audience thoroughly defined and described		Audience cursorily defined and described		Audience NOT defined or described
3. Audience Adaptation	Score: 20	Score: 15	Score: 10	Score: 5	Score: 0
	Intended audience can ALWAYS be deduced from the writing; Tone, style, content, diction and organizational structure are ALWAYS consistently tailored to stated audience	Intended reader can USUALLY be deduced from the writing; Tone, style, content, diction and/or organizational structure are USUALLY tailored to stated audience but there may be one or two lapses	Intended reader can SOMETIMES be deduced from the writing; Tone, style, content, diction and/or organizational structure are SOMETIMES tailored to stated audience but roughly half the writing indicates lapses	Intended reader can RARELY be deduced from the writing; Tone, style, content, diction and/or organizational structure are RARELY tailored to stated audience though there may be one or two examples of adaptation	Intended reader can NOT be deduced from the writing; Tone, style, content, diction and organizational structure are NEVER consistently tailored to stated audience
Audience Score:	__/35				
4. Purpose Articulation	Score: 5			Score: 0	
	A purpose is stated			A purpose is not stated	
5. Purpose Type	Score: 15		Score: 10	Score: 5	Score: 0
	Consensus Goals		Mixed Goals	Persuasion Goals	Defensive or No Goals
Purpose Score:	__/20				
6. Claim	Score: 5			Score: 0	
	States point of view			Does not state point of view	
7. Claim Reasons and Evidence	Score: 20	Score: 15	Score: 10	Score: 5	Score: 0
	a. Provides multiple reasons for the claim(s), and b. All reasons are sound/acceptable, free of irrelevancies, and supported with evidence	a. Provides multiple reasons for the claim(s), and b. Most reasons are sound/acceptable, free of irrelevancies, and supported with evidence, but one or two are weak or unsupported with evidence	a. Provides multiple reasons for the claim(s), and b. Some reasons are sound/acceptable, relevant, and supported with evidence, but some are weak or unsupported with evidence	a. Provides only one reason for the claim(s), or b. Reasons provided are weak, irrelevant, or unsupported with evidence	a. Provides no reasons for the claim(s), or b. None of the reasons are relevant to/supportive of the claim(s) or reasons are unsupported with evidence
8. Counterargument	Score: 10			Score: 0	
	Provides counterargument claim(s)/alternative view(s)			Does not provide counterargument claim(s)/alternative view(s)	
9. Counterargument Reasons and Evidence	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Provides multiple reasons for the counterargument(s) or alternative views(s), and b. All reasons are sound/acceptable, free of irrelevancies, and supported with evidence	a. Provides multiple reasons for the counterargument(s) or alternative view(s), and b. Most reasons are sound/acceptable and free of irrelevancies, but one or two are weak or unsupported with evidence	a. Provides multiple reasons for the counterargument(s) or alternative views(s), and b. Some reasons are sound/acceptable and relevant, but some are weak or unsupported with evidence	a. Provides only one reason for the counterargument(s) or alternative views(s), or b. Reasons provided are weak, irrelevant, or unsupported with evidence	a. Provides no reasons for the counterargument(s) or alternative views(s), or b. None of the reasons are relevant, or they are unsupported with evidence
10. Rebuttal	Score: 10			Score: 0	
	Provides rebuttal(s)			Does not provide rebuttal(s)	
11. Rebuttal Reasons and Evidence	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Provides multiple reasons for the rebuttal(s), and b. All reasons are sound/acceptable, free of irrelevancies, and supported with evidence	a. Provides multiple reasons for the rebuttal(s), and b. Most reasons are sound/acceptable and free of irrelevancies, but one or two are weak or unsupported with evidence	a. Provides multiple reasons for the rebuttal(s), and b. Some reasons are sound/acceptable and relevant, but some are weak or unsupported with evidence	a. Provides only one reason for the rebuttal(s), or b. Reasons provided are weak, irrelevant, or unsupported with evidence	a. Provides no reasons for the rebuttal(s), or b. None of the reasons are relevant to/supportive of the rebuttal(s) and unsupported with evidence
Conventions Score:	/95				
Total Score:	/150				

Appendix E

Studies and Scholarship Backing Pedagogical Practices

Studies and Scholarship Backing Pedagogical Practices

Studies and Scholarship Backing Pedagogical Practices

Build New Schemas Through Explicit Instruction in Argument, Critical Thinking and Data Evaluation	
<p>Baron, J. (1995). Myside bias in thinking about abortion. <i>Thinking and Reasoning</i>, 1, 221-235.</p> <p>Britt, M. A., Kurby, C. A., Dandotkar, S., & Wolfe, C. R. (2008). I agreed with what? Memory for simple argument claims. <i>Discourse Processes</i>, 45(1), 52-84. doi:10.1080/01638530701739207</p> <p>Dornbrack, J. & Dixon, K. (2014). Towards a more explicit writing pedagogy: The complexity of teaching argumentative writing. <i>Reading & Writing</i>, 5(1), 1-8.</p> <p>Nussbaum, E. M., Kardash, C. M., & Graham, S. (2005). The effects of goal instructions and text on the generation of counterarguments during writing. <i>Journal of Educational Psychology</i>, 97(2), 157-169.</p> <p>Stanovich, K. E. (2008). On the failure of cognitive ability to predict myside and one-sided thinking biases. <i>Thinking & Reasoning</i>, 14(2), 129-167.</p>	
Instructional Strategies	Studies/Scholarship Backing Strategy
<p>Explicit instruction in creating a precise claim statement, how to elaborate upon and support reasons, and how to present and counter arguments</p>	<p>Yen, M. H. & Wu, Y. T. The role of university students' informal reasoning ability and disposition in their engagement and outcomes of online reading regarding a controversial issue: An eye tracking study. <i>Computers in Human Behavior</i>, 75, 14-24.</p> <p>Wolfe, C. R. & Britt, M. A. (2008). The locus of myside bias in written argumentation. <i>Thinking & Reasoning</i>, 14(1), 1-27.</p> <p>Wolfe, C. R., Britt, M. A., & Butler, J. A. (2009). Argumentation schema and the myside bias in written argumentation. <i>Written Communication</i>, 26(2), 183-209.</p> <p>Wolf, C. (2012). Individual differences in "myside bias" in reasoning and written argumentation. <i>Written Communication</i>, 29(4), 477-501.</p>
<p>Adapted Toulmin Argumentation incorporating Aristotle's concept of "enthymeme"</p>	<p>Chambliss, M. J. & Garner, R. (1996). Do adults change their minds after reading persuasive text? <i>Written Communication</i>, 13(3), 291-313.</p> <p>Hillocks, G. J. (2010). Teaching argument for critical thinking and writing: An introduction. <i>The English Journal</i>, 99(6), 24-32.</p> <p>Lunsford, K. L. (2002). Contextualizing Toulmin's model in the writing classroom: A case study. <i>Written Communication</i>, 19(1), 109-174.</p> <p>Voss, J. F. (2005). Toulmin's model and the solving of ill-structured problems. <i>Argumentation</i>, 19, 321-329.</p> <p>Warren, J. E. (2010). Taming the warrant in Toulmin's model of argument. <i>English Journal</i>, 99(6), 41-46.</p>

Adapted Walton Argumentation Schemes and Critical Questions	<p>Nussbaum, E. M. (2008). Using Argumentation Vee Diagrams (AVDs) for promoting argument-counterargument integration in reflective writing. <i>Journal of Educational Psychology</i>, 100(3), 549-565.</p> <p>Nussbaum, E. M. & Edwards, O. V. (2011). Critical questions and argument stratagem: A framework for enhancing and analyzing students' reasoning practices. <i>Journal of the Learning Sciences</i>, 20(3), 443-488.</p> <p>Nussbaum, E. M. (2011). Argumentation, dialogue theory, and probability modeling: Alternate frameworks for argumentation research in education. <i>Educational Psychologist</i>, 46(2), 84-106.</p> <p>Newell, G. E., Beach, R. Smith, J., & VanDerHeide, J. (2011). Teaching and learning argumentative reading and writing: A review of research. <i>Reading Research Quarterly</i>, 46(3), 273-304.</p>
Guided instruction with databases, web-based resources, and data evaluation	<p>Head, A. J. Eisenberg, M. B. (2010). Truth be told: How college students evaluate and use information in the digital age. Project Information Literacy Progress Report, Retrieved from http://dx.doi.org/10.2139/ssrn.2281485</p> <p>Radhakrishnan, P., Lam, D., and Tamura, E. K. (2010). Guided experimentation with databases improves argumentative writing. <i>Teaching of Psychology</i>, 37, 210-215.</p> <p>Wiley, J. & Voss, J. F. (1999). Constructing arguments from multiple sources: Tasks that promote understanding and not just memory for text. <i>Journal of Educational Psychology</i>, 91(2), 301-311.</p>
Set Collaboration and Critical Evaluation Goals Rather Than Persuasion Goals	
<p>Dole, J.A. & Sinatra, G.M. (1998). Reconceptualizing change in the cognitive construction of knowledge. <i>Educational Psychologist</i>, 33(2/3), 109-128.</p> <p>Mercier, H. (2017). Confirmation bias—myside bias. In Pohl, R. F. (Ed.), <i>Cognitive Illusions: Intriguing Phenomena in Judgement, Thinking and Memory</i> 99-114. New York: Routledge.</p> <p>McCann, T.M. (2010). Gateways to writing logical arguments. <i>English Journal</i>, 99(6), 33-39.</p> <p>Nystrand, M. (1989). A social-interactive model of writing. <i>Written Communication</i>, 6(1), 66-85.</p>	
Instructional Strategies	Studies/Scholarship Backing Strategy
In-class consensus-seeking dialogue activities and Rogerian discussions.	<p>Felton, M., Crowell, A., & Liu, T. (2015). Arguing to agree: Mitigating my-side bias through consensus-seeking dialogue. <i>Written Communication</i>, 32(3), 317-331.</p> <p>Tompkins, P. S. (2009). Rhetorical listening and moral sensitivity. <i>The International Journal of Listening</i>, 23, 60-79.</p> <p>Brooks, K. (2011). Resistance is futile: "Reaccenting" the present to create classroom dialogues. <i>Pedagogies: An International Journal</i>, 6(1), 66-80.</p>

Structured online peer evaluation and feedback workshops	<p>Golanics, J. D. & Nussbaum, E. M. (2008). Enhancing online collaborative argumentation through question elaboration and goal instructions. <i>Journal of Computer Assisted Learning</i>, 24, 167-180.</p> <p>Huh, M. H. & Lee, I. (2014). Applying Toulmin: Does peer response play a role in Korean EFL college students' revision quality? <i>English Teaching</i>, 69(3), 3-23.</p> <p>Mohammad, R. (2013). Is training student reviewers worth its while? A study of how training influences the quality of students' feedback and writing. <i>Language Teaching Research</i>, 17(1), 67-89.</p> <p>Tsai, Y. C. & Chuang, M. T. (2013). Fostering revision of argumentative writing through structured peer assessment. <i>Perceptual & Motor Skills: Physical Development & Measurement</i>, 116(1), 210-221.</p>
Teach students to ask and answer critical questions	<p>McCann, T. M. Gateways to writing logical arguments. <i>The English Journal</i>, 99(6), 33-39.</p> <p>Song, Y. & Ferretti, R.P. (2013). Teaching critical questions about argumentation through the revising process: Effects of strategy instruction on college students' argumentative essays. <i>Read Writ</i>, 26, 67-90. DOI 10.1007/s11145-012-9381-8</p> <p>Nussbaum, E. M. (2008). Using Argumentation Vee Diagrams (AVDs) for promoting argument-counterargument integration in reflective writing. <i>Journal of Educational Psychology</i>, 100(3), 549-565.</p>
Frequent instructor-provided feedback and conferencing	<p>Bain, K. (2004). <i>What the Best College Teachers Do</i>. Cambridge: Harvard University Press.</p> <p>Dethier, B. (2005). <i>First Time Up: An Insider's Guide for New Composition Teachers</i>. Logan: Utah State University Press.</p> <p>Newkirk, T., Ed. (1993). <i>Nuts and Bolts: A Practical Guide to Teaching College Composition</i>. Portsmouth: Boynton/Cook.</p>
Scaffold Balanced Argumentation Using Graphic Organizers	
Instructional Strategies	Studies/Scholarship Backing Strategy
Argumentation graphic organizers promoting argument-counterargument integration	<p>Nussbaum, E. M. (2008). Using Argumentation Vee Diagrams (AVDs) for promoting argument-counterargument integration in reflective writing. <i>Journal of Educational Psychology</i>, 100(3), 549-565.</p> <p>Nussbaum, E. M. & Schraw, G. (2007). Promoting argument-counterargument integration in students' writing. <i>The Journal of Experimental Education</i>, 76(1), 59-92.</p> <p>Robinson, D. H. & Kiewra, K. A. (1995). Visual argument: Graphic organizers are superior to outlines in improving learning from text. <i>Journal of Educational Psychology</i>, 87(3), 455-467.</p>

Provide Practice in Strategies that Promote Metacognitive Reflection	
<p>Chambliss, M. J. & Garner, R. (1996). Do adults change their minds after reading persuasive text? <i>Written Communication, 13</i>(3), 291-313.</p> <p>Stanovich, K.E. & West, R.F. (2007). Natural myside bias is independent of cognitive ability. <i>Thinking and Reasoning, 13</i>(3), 225-247.</p> <p>Toplak, M.E. & Stanovich, K.E. (2003). Associations between myside bias on an informal reasoning task and amount of post-secondary education. <i>Applied Cognitive Psychology, 17</i>, 851-860. DOI: 10.1002/acp.915</p>	
Instructional Strategies	Studies/Scholarship Backing Strategy
<p>Reflective journals with prompts designed to help students think metacognitively about their own epistemologies, research processes, arguments, and evaluations of evidence.</p>	<p>Adler-Kassner, L. & Wardle, E. (2015). <i>Naming What We Know: Threshold Concepts of Writing Studies</i>. Logan: Utah State University Press.</p> <p>McCrudden, M. T. & Barnes, A. (2016). Differences in student reasoning about belief-relevant arguments: a mixed methods study. <i>Metacognition Learning, 11</i>, 275-303.</p> <p>Kardash, C.M. & Howell, K.L. (2000). Effects of epistemological beliefs and topic-specific beliefs on undergraduates' cognitive and strategic processing of dual-positional text. <i>Journal of Educational Psychology, 92</i>(3), pp. 524-535.</p> <p>Yancey, K. B. (1998). <i>Reflection in the Writing Classroom</i>. Logan: Utah State University Press.</p>

Appendix F
Semester Curriculum

Semester Curriculum

Semester Curriculum

UNIT 1: One-Sided Argument From Myside (CLAIM-DRIVEN)

Week	Assignments	Classroom Activities and Instruction
Week 1	Brief Essay	<ul style="list-style-type: none"> • Explicit Instruction/Practice: Critical Thinking, Toulmin Part 1 (Claim, Reasons, Grounds) • Explicit Instruction: Revision, Rhetorical Triangle, Rhetorical Analysis of Arguments
Week 2	Online Peer Review	<ul style="list-style-type: none"> • Structured online peer evaluation and feedback workshops • Reflective journals with prompts designed to help students think metacognitively • Frequent Instructor-provided feedback/conferencing

UNIT 2: One-Sided Argument From the Other Side (CLAIM-DRIVEN)

Week	Assignments	Classroom Activities and Instruction
Week 3	Opposition Essay	<ul style="list-style-type: none"> • Explicit Instruction: Toulmin Part 2 (Warrants, Backing, Counterarguments, Rebuttal) • Inference, Facts, Judgments • Concession, Rogerian Argument, Rhetorical Listening activities
Week 4	Online Peer Review	<ul style="list-style-type: none"> • Structured online peer evaluation and feedback workshops • Reflective journals with prompts designed to help students think metacognitively • Frequent Instructor-provided feedback/conferencing

UNIT THREE: PAI--Proposal Argument from Inquiry (INQUIRY-DRIVEN)

Week	Assignments	Classroom Activities and Instruction
Week 5	PAI Questioning and Stasis Theory for Inquiry	<ul style="list-style-type: none"> • Question Generation Modeling and Practice • Stasis Theory for Inquiry • Explicit guided instruction with databases, web-based resources, and data evaluation
Week 6	Online Peer Review	<ul style="list-style-type: none"> • Structured online peer evaluation and feedback workshops • Reflective journals with prompts designed to help students think metacognitively • Frequent Instructor-provided feedback/conferencing
Week 7	Graphic Organizer and Library Sessions	<ul style="list-style-type: none"> • Graphic Organizer (flipped online) with critical questions • One-on-one guided instruction with databases, web-based resources, and data evaluation • One-on-one guided instruction with databases, web-based resources, and data evaluation
Week 8	Online Peer Review	<ul style="list-style-type: none"> • Structured online peer evaluation and feedback workshops • Reflective journals with prompts designed to help students think metacognitively • Frequent Instructor-provided feedback/conferencing
Week 9	Toulmin Enthymeme Analysis	<ul style="list-style-type: none"> • Logical Fallacies • Explicit instruction in limited argumentation schemes and accompanying critical questions

		<ul style="list-style-type: none"> • Analysis of mentor texts • Consensus-seeking dialogue activities with GOs and critical questions
Week 10	Online Peer Review	<ul style="list-style-type: none"> • Structured online peer evaluation and feedback workshops • Reflective journals with prompts designed to help students think metacognitively
Week 11	PAI Outline	<ul style="list-style-type: none"> • Frequent Instructor-provided feedback/conferencing • Adapted Walton Argumentation Schemes, Critical Questions, Rhetorical Analysis, and Dialectical Activity • Peer-assisted outlining activity
Week 12	Online Peer Review	<ul style="list-style-type: none"> • Explicit Instruction: Plagiarism, Citation, Source Integration • Structured online peer evaluation and feedback workshops • Reflective journals with prompts designed to help students think metacognitively
Week 13	PAI Draft	<ul style="list-style-type: none"> • Frequent Instructor-provided feedback/conferencing • Writing: Voice, Titles, Intros and Conclusions • Style, voice, register, tone • Paragraphing • Mechanical concerns
Week 14	Online Peer Review	<ul style="list-style-type: none"> • Structured online peer evaluation and feedback workshops • Reflective journals with prompts designed to help students think metacognitively
Week 15	Instructor Conferences	<ul style="list-style-type: none"> • Frequent Instructor-provided feedback/conferencing • Instructor Conferences • Instructor Conferences

CURRICULUM VITAE

LEZLIE CHRISTENSEN BRANUM

Senior Lecturer, Writing Fellows Program Director
 Utah State University, Logan, Utah
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 Layton, Utah 84040
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 June 2022

EDUCATION

- 2022 Ph.D., Teacher Education and Leadership. *Utah State University*, Logan, Utah.
 “Myside Bias Shifting in the Written Arguments of First-Year Composition Students”
 Curriculum and Instruction
 Literacy Education and Leadership
 Dr. Amy Wilson-Lopez and Dr. Amy Piotrowski, Co-Chairs
 Graduated *Magna Cum Laude*
- 2001 M.A. Literary Studies. *Georgetown University*, Washington D.C.
 “The Rhetoric of Love: A Comparative Study of Korean Kisaeng and Occitanian Trobairitz Lyrical Poetry”
 Medieval Women’s Literature
 Korean Comfort Women
 Dr. Margaret Stetz, Chair
 Graduated *Magna Cum Laude*
- 1998 B.S. English. *Utah State University*, Logan, Utah.
 Literary Studies Emphasis
 Graduated *Cum Laude*

ADMINISTRATIVE APPOINTMENTS

- 2021-2022 Writing Fellows Program Director. Utah State University, Logan, Utah.
 2020-2021 Interim Writing Fellows Program Director. Utah State University, Logan, Utah.
 2018-2019 Interim Writing Program Director. Utah State University, Logan, Utah.
 2013-2014 Interim Writing Program Director. Utah State University, Logan, Utah.
 2009-2011 Writing Program Assistant Director, English 2010. Utah State University, Logan, Utah.

2008-2018 (alternating years) International Composition Program Coordinator. Utah State University, Logan, Utah.
 1997-1998 Rhetoric Associates Assistant Director, Utah State University, Logan, Utah.

TEACHING EXPERIENCE

English Department, Utah State University. Logan, Utah.

2022

General Education

Writing Fellows Program Director. *Writing Fellows Seminar*. (1 hybrid section, 1 face-to-face section)
 Senior Lecturer. *Elements of Grammar*. (1 face-to-face section)

2021

General Education

Writing Fellows Program Director. *Writing Fellows Seminar*. (1 hybrid section, 1 face-to-face section)
 Senior Lecturer. *Research Writing in a Persuasive Mode*. (1 online section)
 Senior Lecturer. *Elements of Grammar*. (3 online sections)

2020

General Education

Interim Writing Fellows Program Director. *Writing Fellows Seminar*. (1 hybrid section)
 Interim Writing Fellows Program Director. *Elements of Grammar*. (2 online sections)
 Senior Lecturer. *Research Writing in a Persuasive Mode*. (3 hybrid sections)

2019

General Education

Senior Lecturer. *Research Writing in a Persuasive Mode*. (3 hybrid sections)

English Major

Senior Lecturer. *Literary Analysis*. (1 face-to-face section)

2018

English Graduate

Interim Writing Program Director. *Practicum in Teaching Writing*. (1 face-to-face section)

General Education

Interim Writing Program Director. *Research Writing in a Persuasive Mode*. (2 hybrid sections)
 Senior Lecturer. *Research Writing in a Persuasive Mode*. (5 hybrid sections)

2017

General Education

Senior Lecturer. *Research Writing in a Persuasive Mode*. (8 hybrid sections)

English Major

Senior Lecturer. *Literary Analysis*. (1 face-to-face section)

Education Major

Senior Lecturer. *Language and Cultural Diversity in Education*. (1 face-to-face section)

2016

General Education

Senior Lecturer. *Research Writing in a Persuasive Mode*. (7 hybrid sections)

Senior Lecturer. *Elements of Grammar*. (1 online section)

English Major

Senior Lecturer. *Literary Analysis*. (2 face-to-face sections)

2015

General Education

Senior Lecturer. *Research Writing in a Persuasive Mode*. (7 face-to-face sections)

Senior Lecturer. *Research Writing in a Persuasive Mode*. (1 online section)

Senior Lecturer. *Introduction to Shakespeare*. (1 face-to-face section)

Senior Lecturer. *Elements of Grammar*. (1 online section)

English Major

Senior Lecturer. *Literary Analysis*. (1 face-to-face section)

2014

General Education

Interim Writing Program Director. *Research Writing in a Persuasive Mode*. (1 face-to-face section)

Interim Writing Program Director. *Introduction to Shakespeare*. (2 face-to-face sections)

Senior Lecturer. *Research Writing in a Persuasive Mode*. (4 face-to-face sections)

Senior Lecturer. *Elements of Grammar*. (1 online section)

English Major

Senior Lecturer. *Literary Analysis*. (1 face-to-face section)

2013

English Graduate

Interim Writing Program Director. *Practicum in Teaching Writing*. (1 face-to-face section)

General Education

Lecturer. *Research Writing in a Persuasive Mode*. (3 face-to-face sections)

Lecturer. *Introduction to Shakespeare*. (1 face-to-face section)

2012

General Education

Lecturer. *Research Writing in a Persuasive Mode*. (6 face-to-face sections)

Lecturer. *Elements of Grammar*. (1 online section)

Lecturer. *Understanding Literature*. (1 face-to-face section)

Lecturer. *Introduction to Shakespeare*. (1 face-to-face section)

Lecturer. *Perspectives in Literature*. (1 face-to-face section)

2011

General Education

Lecturer. *Research Writing in a Persuasive Mode*. (4 face-to-face sections)

Lecturer. *Elements of Grammar*. (2 online sections)

Lecturer. *Introduction to Shakespeare*. (1 face-to-face section)

2010

General Education

Lecturer. *Introduction to Academic Writing*. (1 online section)

Lecturer. *Research Writing in a Persuasive Mode*. (6 face-to-face sections)

Lecturer. *Elements of Grammar*. (1 online section)

Lecturer. *Understanding Literature*. (3 face-to-face sections)

2009

General Education

Lecturer. *Research Writing in a Persuasive Mode*. (5 face-to-face sections)

Lecturer. *Understanding Literature*. (1 face-to-face section)

Lecturer. *Introduction to Academic Writing for Non-Native Speakers of English*. (1 face-to-face section)

Lecturer. *Introduction to Academic Writing*. (1 face-to-face section)

Lecturer. *Perspectives in Literature*. (1 face-to-face section)

2008

General Education

Lecturer. *Research Writing in a Persuasive Mode*. (7 face-to-face sections)

Lecturer. *Introduction to Academic Writing*. (1 face-to-face section)

Lecturer. *Introduction to Shakespeare*. (1 face-to-face section)

First-Year Experience

Lecturer. *USU Connections*. (1 face-to-face section)

2007

General Education

Lecturer. *Research Writing in a Persuasive Mode*. (3 face-to-face sections)

Lecturer. *Introduction to Academic Writing*. (1 face-to-face section)

**Center for Language Research and Instruction, Dongguk Buddhist University.
Seoul, South Korea.**

2001, Fall--2003, Spring. Visiting Professor. *Conversational English, Business English, English Writing*.

(20 face-to-face sections)

English Department, Georgetown University. Washington D.C.

2000, Summer. Instructor. *Summer Discovery Program*.

2000, Fall—2001, Spring. Tutor. *Pilot Academic Writing Mentoring Program*.

English Department, Utah State University. Logan, Utah.

1996, Fall—1998, Spring. Rhetoric Associate tutoring writing across the curriculum.
1997-1998. Rhetoric Associates Assistant Director, under Joyce Kinkead, Director.

PUBLICATIONS

Published Articles

- Christensen-Branum, L., Strong, A. & Jones, C.D. (2018). Mitigating myside bias in argumentation. *Journal of Adolescent & Adult Literacy*, 62(4), 435-445. doi.org/10.1002/jaal.915
- Mohr, K. A., Ding, G., Strong, A., Branum, L., Watson, N., Priestley, K. L., & ... Lundstrom, K. (2017). Reading the Past to Inform the Future: 25 Years of The Reading Teacher. *The Reading Teacher*, 71(3), 251-264. doi:10.1002/trtr.1636
- Martin, P. & Park, L. (2010). Reference desk consultation assignment: An exploratory study of students' perceptions of reference service. *Reference & User Services Quarterly*, 49(4), 333-340.

Other Publications

- Christensen-Branum, L., Ed. (2018). *English 1010 Handbook: Introduction to Academic Writing*. Student Handbook 2018-2019. Utah State University: Logan, UT.
- Park, L., Ed. (2013). *English 1010 Handbook: Introduction to Academic Writing*. Student Handbook 2013-2014. Utah State University Publication Design and Production: Logan, UT.

CONFERENCE PRESENTATIONS

- 2018 “Looking Back, Looking Forward: Composing Identities.” Keynote address for the first annual USU Compositionist Professional Development Conference. Logan, Utah.
- 2017 “Battling Myside Bias in Argumentative Writing.” Conference of Utah Council of Teachers of English. Murray, Utah.
- 2017 “Where’s the Mentor Here? Creating a Culture of Mentoring in the New University and Beyond.” CCCC Conference on College Composition and Communication. Portland, Oregon.
- 2010 “Sketching the Margins: An Ethnographic Approach to Understanding the Impact of Contingent Labor Abuse.” AAUP Annual Conference on the State of Higher Education. Washington D.C.
- 2001 “The Rhetoric of Love: A Comparative Study of Korean Kisaeng and Occitanian Trobairitz Lyrical Poetry.” Annual Conference of the Society for Intercultural Comparison. Princeton, New Jersey.

1998 “Tutoring Writing Across the Curriculum.” Rocky Mountain Modern Language Association. Park City, Utah.

SELECTED WORKSHOP PRESENTATIONS

2019 “Aligning Concurrent Enrollment and College Curricula.” Presentation at Ridgeline High School Summer PLC. Millville, Utah.

2018 “Myside Bias in Composition.” Presentation at USU’s Annual Concurrent Enrollment Conference. Logan, Utah.

2016 “The Problem of Silence: Rethinking Student Participation in the Classroom.” Presentation at English Department Professional Development Workshop.

2008 “Non-Native Speakers of English in the Composition Classroom.” Presentation at English Department Professional Development Workshop.

ACADEMIC SERVICE

Service to the Profession

2017- Manuscript reviewer, *Journal of Adolescent & Adult Literacy*

2014-2015 SHEEO (State Higher Education Executive Officers Association) Multi-State Collaborative for the Assessment of Learning Outcomes and VALUE Rubrics Creation, USU Written Communications Representative

Institutional Service

2021 USU Academic Support Alliance, Member

2020 USU Undergraduate Academic Employee Training Committee, Member

2017 Promotion committee member, Marta Halaczkiwicz, Senior Lecturer in Intensive English Language Institute

2013-2014 Communications Intensive Course Subcommittee, Member

2013-2014 General Education Committee, Member

2010 College of Humanities and Social Sciences Improvement Proposal, Presenter

Departmental Service

2021 Lecturer Advisory Committee, Chair

2021 Promotion Committee Member, Matthew Whittaker, Lecturer in English

2020 Lecturer Annual Review Committee, Member

2020 Promotion Committee Chair, Ashley Wells, Lecturer in English

2020 Promotion Committee Member, Mary Ellen Greenwood, Lecturer in English

2018 Graduate Instructor role statement and annual review articulation project

2018 Mentoring Committee, Member

2018 Weber State University Graduate Fair Recruiting

2018 Department Retreat Teaching Panel Participant: Conducting Online Peer Reviews

2018 Lecturer Hiring Committee, Member

2018 Library-Writing Program Research Learning Objectives Committee, Chair

2018 Department Advisory Committee, Member

2018 Advisory and Curricular Committee, Member

2016 Departmental Awards Committee, Member

2015-2016 Promotion Committee Member, Dustin Crawford, Senior Lecturer in English

2014 Lecturer Hiring Committee, Member

2013-2018 Library Integration Committee, Member

2013-2014 Department Advisory Committee, Member
 2013-2014 Advisory and Curricular Committee, Member
 2011-2013 Online Teaching Colloquium for Incoming English 2010 Instructors, Designer and Facilitator
 2011 Departmental Awards Committee, Member
 2011 Writing Program Textbook Selection Committee, Member
 2010-2016 Writing Program Assessment Committee, Chair
 2010-2012 Creation/Implementation of English 1010 Writing Program Assessment, Designer and Facilitator
 2010 English 2010 Professional Development Staff Meeting Series, Designer and Facilitator
 2010 Department Teaching Resources Library Project, Creator
 2009-2011 Five Courses Committee, Chair
 2009-2010 Advisory and Curricular Committee, Member
 2009 Regents Review report on Lecturer contributions, Compiler and Presenter
 2009 Online English 2010 Canvas Course Construction Committee, Member
 2008-2011 Department Lecturer Liaison
 2007-2009 University Studies Depth and Breadth Committee, Member

Service to the Community

2015 “Let’s Talk About It” Larsen-Sant Public Library Book Club Discussion Leader, Preston, Idaho
 2010 Summer Senior Citizens Workshop
 2009 Campus and Community Event Organization of Internment Camp Survivor Public Presentation: “Topaz Illuminated: Remembering the Incarceration of Japanese Americans in Utah.”

AWARDS AND RECOGNITION

2019 Giraffe Innovation Award Nominee for Writing Program Curriculum Development
 2016 Promote Educational Opportunities Scholarship Award Recipient, USU Center for Women and Gender
 2015 Lecturer of the Year Award, College of Humanities and Social Sciences
 2013 Promotion to Senior Lecturer
 2013 Giraffe Innovation Award Nominee for Writing Program Assessment
 2011 RCDE Exemplary Online Course Award for *English 1410: Elements of Grammar*.
 2010 Lecturer of the Year Award, English Department
 2009 English Department Service Award: Online *English 2010: Research Writing in a Persuasive Mode* Course Construction

GRANTS FUNDED

2009 *Utah Humanities Council* and *USU’s Multicultural Student Services*. “Topaz Illuminated: Remembering the Incarceration of Japanese Americans in Utah.” This grant funded an event I organized to bring Grace Oshida, a Delta, Utah Japanese American internment camp survivor to USU’s campus. This event was co-sponsored by USU’s Multicultural Student Services Director, Moises Diaz, to align with a *Perspectives in*

Literature course I taught on Asian American literature. It was advertised across and attended by members of USU's campus and the Cache Valley community. Award amount: \$600.