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AN EXPERIMENT OF AUDIENCE AWARENESS EFFECTS ON COLLEGE STUDENTS' ARGUMENTATIVE WRITING

Shiyuan Wang
University of Nebraska-Lincoln, wang.shiyuan@huskers.unl.edu

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Shiyuan Wang

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Shiyuan Wang, Ph.D.

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Advisor: Roger Bruning

This experimental study explored the effects of different levels (imagined audience vs. interactive audience) and timing of audience interaction (during planning vs. revision) on undergraduate students' self-efficacy and quality of argumentative writing. A total of 138 students from four undergraduate educational psychology courses participated in this study. Three conditions were compared: imagined audience, interactive audience during planning and interactive audience during revision. Results showed that students interacting with audience during revision produced significantly more argumentative elements (below level 1 reasons of opposing view) and had higher self-efficacy for audience awareness than the other two conditions. Students' cognitive load and audience-related strategies utilized during the writing task were also explored. Findings generally showed that audience-related strategies and distribution of cognitive resources during different stages of writing are likely to be associated with differences in writing performance

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Chapter 1

Introduction

In both work and personal settings today, being able to write effectively is seen not just as an option, but as a necessity (Graham & Perin, 2007). One consequence of this view is that American universities today require composition courses for their undergraduate students, with a main goal of teaching them basic argumentative writing skills (Andrew, 2009). Argumentative writing is pervasive across different subject areas and crucial to students' success in college, helping students learn content knowledge (Driver, Newton, & Osborne, 2000; MacArthur, Ferretti, & Ovolo, 2002; Schwarz, Neuman, Gil, & Iiya, 2003; Zohar & Nemet, 2002), enhance their comprehension (De La Paz, 2005) and cultivate scientific thinking (Cronje, Murray, Rohlinger & Wellnitz, 2013; Krest & Carle, 1999). Argumentative writing skill is also vital for students' success after college because many employers require strong writing skills for their employees and such skills are keys to advancing one's career (National Commission on Writing, 2006).

Argumentative Writing

But what exactly is argumentative writing? At a most general level, argumentative writing consists of a set of written statements written to support or rebut a certain point of view on an issue (Houtlosser, 2001). More specifically, Toulmin (1958) proposed an influential early model for describing and analyzing the structure of argumentative writing that still continues to provide the foundation for much of the research on argumentative writing. Toulmin's model consists of six essential components: 1) claim or conclusion (the writer's position on the problem); 2) grounds (reasons or evidence that support the claim); 3) warrant (the logical connection that leads the grounds to the claim);

4) backing (justification to the warrant); 5) rebuttals (counterarguments or exceptions to the claim); and 6) modal qualifiers (the conditions under which the claim cannot hold). In its focus on argumentation that is well organized, elaborated, and supported by evidence or personal experience (Perloff, 2003), Toulmin's perspective on argumentative writing reflects a traditional view of argumentation that has persuading the "other side" as its primary purpose. Although counterargument has been a part of Toulmin's model, the model does not necessarily require the writers to present an elaborated opposing side and then refute it ("other side") to strengthen "my (writers') side" of the view or reach a reasoned conclusion.

More recent argumentative writing models, however, have provided a somewhat broader perspective on how exploring and integrating various sides of an issue can lead to better reasoned conclusions (e.g. Nussbaum, 2008). Nussbaum and Schraw (2007), for instance, created a series of criteria for a good argument, including 1) a clear position; 2) adequate supporting reasons, referring to sufficient (usually multiple), accurate, and relevant reasons to support the position; 3) counter-argumentation, referring to the alternative points and their supporting reasons; and 4) conclusion, in which both argument and counterargument should be considered, by either siding with one position or synthesizing the two sides to develop a final position that is between the two. Nussbaum (2008) called this type of argumentative writing *reflective writing*, as it requires not only counterarguments or an opposing view, but also supporting reasons or elaboration and rebuttals. The consideration of counterarguments and construction of rebuttals can help one's arguments reach a deeper and more convincing level (Nussbaum & Kardash, 2005).

The so-called “pragma-dialectical paradigm of argumentative writing” (van Eemeren, Grootendorst & Henkemans, 2002) also portrays the goal of argumentation as moving through a rational process to resolve a difference of opinion and as requiring supporting reasons and elaboration on various sides of an issue under discussion. From the perspective of cognitive development, these more integrated requirements of argumentative writing are the fundamental building blocks of real-world argumentative reasoning (Kuhn & Crowell, 2011) that serve to build better reasoning skills (Wegerif, Mercer, & Dawes, 1999), as well as stronger planning and self-regulation skills (Harris, Graham, & Mason, 2006) by revealing more of the internal dialogues students have during the writing process (Chinn, 2006; Reznitskaya & Anderson, 2001),

From a practical perspective in a college setting, the presence of a well-rounded argument also is likely to be important to the writing assignments students encounter. For example, a literature review paper often needs to address different theoretical frameworks and synthesize them to inform one’s own research purpose. Likewise, a scientific paper may need to draw from multiple theories and evidence to come to the desired conclusions beyond the pure data. For the social or communicative function of writing, giving equal emphasis on counterarguments and rebuttals can also indicate increased audience awareness, as the writers engage in taking others’ perspectives (e.g., Traxler & Gernsbacher, 1993; Sato & Matsushima, 2006) and try to reach the goal of persuading and communicating rather than simply presenting information. Therefore, the argumentative writing model utilized in the current paper will follow these more recent views to include more elaborated counterarguments and/or opposing sides in assessing the writing samples students provide. Despite the importance of argumentative writing in

and beyond school, students can often seem incompetent in creating good argumentative text (e.g., see Perskey, Daane, & Jin, 2003). One reason, for instance, can be their failure to consider audience, which can be shown by a paucity of opposing views, counter-arguments, or rebuttals in a written argumentation (Felton & Kuhn, 2001; Feretti, Lewis, Andrews-Weckerly, 2009).

Argumentative writing is derived from critical discussion (i.e. oral argument), and thus is dialogic in nature (Johnson, 2002; van Eemeren et al., 2002). In a dialogue, discussions flow from exchanging arguments with your audience/conversation partners. Therefore, lacking audience awareness in argumentative writing could result in ineffective communication of one's opinions on the topic. In an oral argument, however, we are able to constantly get feedback about the quality of our arguments from conversational partners through their attack on our viewpoints, and then generate and revise our ideas and build new arguments to defend our positions. In a written argument, such conversational benefits are lost due to the absence of audience, thus the argumentation becomes monologic (Golder & Coirier, 1994). Writers not only need to express their own points of view and provide sufficient evidence and supporting arguments, but also to hold an audience in mind, address the audience's points of view and potential criticisms in order to defend their own stance, and make persuasive conclusions on the issue under discussion. Because of this complexity, younger students or adults may all find argumentative writing especially difficult.

But the ability to generate ideas without an ongoing conversation is an important aspect of writing skills (Bereiter & Scardamalia, 1987), requiring development of audience awareness, which has typically been considered a characteristic of more skilled

writers (Hayes & Flower, 1980; Rubin & Rafoth, 1986). However, audience awareness is teachable and recent research has been aimed at helping students to pay attention to audience (e.g., Midgette, Haria & MacArthur, 2008) or providing them with different trainings related to audience (Moore & MacArthur, 2012). Results have shown that students can benefit from interventions like these that are explicitly aimed at strengthening audience awareness (Moore & MacArthur, 2012). The present study thus was designed to compare a set of interventions judged to having varying likelihoods for raising students' audience awareness and improving their argumentative writing.

Audience in writing

The Writing Framework for the 2011 National Assessment of Educational Progress defined writing as "a complex, multifaceted and purposeful act of communication that is accomplished in a variety of environments." (National Center for Education Statistics [NCES], 2012, p. 4) The further explanation of this definition specifies that writing should address a specific audience for a specific communicative purpose. Within this kind of framework, the importance of audience is easy to imagine. Consider that you are writing to someone who agrees with you versus someone who disagrees, or you are writing to describe your dissertation study to your committee versus to your parents. Audience awareness, consciously creating and tailoring one's writing to appeal and communicate to audience, has long been considered a key aspect of writing competence (Berkenkotter, 1981). Argumentative writing, aimed at resolving a difference of opinion, thus involves questioning, discussion and dialogue between two parties (van Eemeren, et al, 2002). Due to this "inherently dialogic nature of argument" (Feretti, MacArthur & Dowdy, 2000, p. 700), argumentative writing especially demands the

awareness of audience because it requires the consideration of the audience's positions to advance persuasive arguments (Midgette et al., 2008). Some researchers have even argued that writers should address the audience directly in their written argumentation to fully engage their readers (Coirier et al., 1999; Piolat, Roussey, & Gombert, 1999). Argumentative writing is thus a typical example of a writing genre that is both cognitive and social (Coirier, Andriessen, & Chanquoy, 1999; Oostdam, 2004).

But how does audience actually function in the writing process? According to cognitive theories of writing, writers' mental representations of writing tasks often include audience. As described by McCutchen (2000), for instance, audience can is part of the genre schemata stored in long-term memory and aids writers in planning, translating, and revising. Audience knowledge, however, has been considered higher-level knowledge that is mostly seen among more skilled writers (Bereiter & Scardamalia, 1987; Flower & Hayes, 1980). Audience awareness or expectations in this sense relate to development of writing goals, with writers using audience to form the writing contexts (Berkenkotter, 1981; Park, 1986). Depending on the genre or characteristics of the writing tasks, writers sometimes may not be explicitly aware of the presence of audience or that audience is part of the genre or task itself. For example, many school writing assignments only specify the topic and genre without any explicit information about audience, but implicitly treat teachers as the sole audience. Or at times, writers may envision themselves or people with similar preferences and characteristics as the audience (Elbow, 1987). In general, the notion of audience is abstract information integrated in a certain genre (e.g. the implicit audience of argumentative writing is people

who writers need to defend their ideas against) or imagined characters "within a writer's head" (Ong, 1975).

From another viewpoint—that of a sociocultural perspective of writing (e.g., Vygotsky, 1978)—writing and language more generally are seen as developing through social interactions with others. Writing's goal is to communicate with a certain community in which the audience is a member. Through writing to communicate with the audience, communities are formed and writers develop their identity as writers. Specifically, the development of writing skills involves learning, adopting, and mastering the norms of communication in that community (Magnifico, 2010). Audience in this sense becomes more concrete and is indispensable for writing. Combining these two perspectives of writing together, Magnifico (2010) has proposed that the audience plays a mediating role that brings out writers' internal representation of the specific writing tasks as well as bridges writers and the writing contexts.

From writers' perspectives, audience serves to inform the "purpose" of writing. When audience information is absent either from the writing prompts or a writer's internal representation of the task, and the topic is not of students' own choice, writing in such a context can often be seen as "irrelevant" or lacking of purpose, with students treating it simply as an assignment they had to complete to get grades (Lenhart, Arafeh, Smith & Macgill, 2008). Therefore, the inclusion of audience information in the writing assignment may promote better writing quality, make writing easier, and increase writing motivation and engagement by adding relevancy to the assignment.

How, then, do we raise students' audience awareness? One common strategy has been to have students interact with audiences such as peers and teachers in order to revise

their writing (Pritchard & Honeycutt, 2007). Other studies have shown that getting feedback from adults (e.g., teachers or researchers in an experimental context) can improve both students' writing and their self-efficacy for writing (e.g. Schunk & Swartz, 1993). But students have always written to teachers to get grades and sometimes to obtain feedback on their writing as usual routines of school assignments. So it remains somewhat doubtful that students' audience awareness can be enhanced by interacting with teachers because students may not think of writing to get grades or receiving instructions from adults as writing to or receiving responses from an audience. On the other hand, writing to peers arguably can help raise students' audience awareness by creating "authenticity" in the writing assignments and making them realize that even in school settings they can write to other people beyond teachers (Olinghouse, Zheng, & Morlock, 2012).

Putting the concept of peer as audience into practice has involved a variety of instructional practices, such as writing to peers as an imagined audience (merely addressing writing to peers), or using actual peers as the audience and having some level of interaction including discussions with them, soliciting peer reviews and suggestions, or both. These varied operational details each have different theoretical implications and could have different effects in writing, and therefore need to be examined separately.

As mentioned, when involving audience as an operational component in writing instructions, one possible variation is in the level of interaction between the writers and an audience (imagined or interactive audience). Another possible variation is in the subprocesses (Flower & Hayes, 1981) that audience information might inform (e.g., during planning or during revising). For imagined audiences, researchers have usually

given the audience information at beginning of the writing task; that is to say, the researchers are expecting the audience to affect the writing process already in the planning stage.

The effects of an imagined audience presented for writers to consider during planning have been mixed, however. Some studies have shown positive relationships of audience awareness with writing quality (Cohen & Riel, 1989; Purcell-Gates, Duke & Martineau, 2007), or effects on writing motivation but not quality (Redd-Boyd & Slater, 1989), while others have shown no effects (e.g., Roen & Willey, 1988) or even negative effects on argumentative writing (e.g., Nussbaum & Kardash, 2005; Feretti et al, 2009). However, when students had the opportunity to actually interact with an audience already during planning, empirical studies generally have provided evidence to support its advantages on writing performance (e.g., Kuhn & Crowell, 2011; Kuhn, Zillmer, Crowell, & Zavala, 2013; Kuhn, 2015). Finally, when audience comes into play during the revising stage regardless of the interaction level (either imagined and interactive), the empirical evidence seems to unambiguously support the effectiveness of attention to audience in improving writing quality (e.g. Midgette et al, 2008; Sato et al, 2006; Wong et al, 1994).

As for effects of audience awareness on writing motivation, empirical evidence is still generally lacking and the results conflicting. The most-studied motivation factors in audience awareness literature have been self-efficacy and interest. Evidence on the effect of audience on interest seems to agree upon its positive consequences (Gallini & Helman, 1995; Redd-Boyd & Slater, 1989), whereas the impact on self-efficacy has been more mixed (Wong et al, 1994; Hidi, Ainsely, & Berndoff, 2002), possibly due to the different

interaction levels and timing of the audience that different studies have used. Therefore, this current study examined whether different levels and timing of audience interaction had different effects on writing quality and writing motivation.

More specifically, why might interacting with audience raise students' audience awareness and facilitate their writing and motivation? As one example, having an interactive audience (such as peers) can be more effective for improving writing, in the sense that peers can serve as a more authentic audience (Yarrow & Topping, 2001). This authenticity comes from the communicative nature of such a writing activity because now students can interact with their actual audience and get feedback and suggestions, and may further increase students' interest, self-efficacy, goal-setting, and task value for writing (Magnifico, 2012). Without interaction, although writers can be prompted to write for various communities and vary their writing for different audiences (Fishman, Lunsford, McGregor & Otuteye, 2005), in most situations the audience is in fact still absent, which was true even when audience-related prompts are included in the writing tasks. Writers have to anticipate audience's reactions, in order to imagine and clarify the potential complexity so that the written texts could convey their ideas effectively (Colyar, 2009). Also, empirical studies involving peer interaction as a component to help the development of writing skills—although not specifically designed to examine audience awareness (e.g. Graham, MacArthur & Schwartz, 1995; Harris, Graham & Mason, 2006)—have shown that peer interaction improves students' writing performance and writing self-regulation skills.

Secondly, why might attending to audience at different time points result in different results? It may be that interacting with an audience at different points of the

writing process serves different purposes. Students interacting with an audience during planning can exchange ideas and receive feedback on their anticipation of audience reactions. During revising, students can interact with the audience to get feedback on the products. In order to better describe why the timing of the interaction matters in raising students' audience awareness and quality of argumentative writing, the roles of audience in planning and revising will be reviewed in detail separately in the following sections.

Attending to Audience at the Planning Stage

From a cognitive perspective, writing often has been viewed as a process that involves different stages or sub-processes. As portrayed by Flower and Hayes (1986), for instance, the first sub-process writers engage in is planning, which includes generating ideas, organizing, and goal-setting. Idea generation relies on retrieval of knowledge from long-term memory that includes topic, genre, audience and other relevant information needed to form an internal representation of the writing task. Therefore, incorporating audience information in the writing prompts during planning should facilitate planning of writing by helping writers retrieve information and setting goals. By facilitating planning, the prompts that draw writers' attention to audience may show positive effects on writing performance and self-efficacy, similar to those studies that provide explicit instructions to plan (e.g., Brunstein & Glaser, 2011; Graham, McKeown, Kiuhara, & Harris, 2012; Graham & Perin, 2007). Other researchers, however, have argued that adding audience into prompts can have negative effects on writing quality because this information may create cognitive overload for students by requiring them to coordinate multiple constraints of the writing tasks while writing. Audience also may seem relatively less

important during composing, thus resulting in no effect on writing performance (Brossell, 1983; Cherry & Witte, 1998).

When richer interaction such as discussion with peers during planning occurs, however, some researchers (e.g., Dyson, 1990, 2004: Preus, 1999) have argued that it can greatly enhance student writing and be as effective as interacting with adults such as teachers to receive direct instructions. Elaborating and defending one's own ideas forces writers to engage in more self-reflection, think more of alternative ideas and positions, and focus more on the explanations and justifications of their ideas, leading them to construct more complex and accurate products (Storch, 2005). Also, the anticipation and imagination of audience's responses can become concrete, which is particularly helpful for novice or less skilled writers who may not have audience awareness or enough knowledge of the topic to anticipate an audience's responses. Thus, interacting with audience may cancel out the cognitive overload effects caused by the abstract requirement of attending to audience. In addition, discussion with peers can make students verbalize and negotiate their thoughts as "rehearsal" of the written argumentation, resulting in an increase of conscious control of the writing process, revising activities and audience awareness (Giroud, 1999). Therefore, interacting with an audience may be especially beneficial for argumentative writing because the essential elements of argumentative writing are to engage in a discussion with another party (audience) about the writer's opinion on a certain issue, and to convince the other party by presenting well-structured arguments, removing their doubts and addressing their potential criticisms (van Eemeren et al., 2002).

In summary, current research does not show consistent evidence for the effects of merely adding audience prompts during planning, but providing an interactive audience during planning does seem to lead to positive results. Because studies involving these two types of audience have been conducted separately, however, the aforementioned reasons for these differential results mostly remain theoretical. Research is needed to directly compare these two types of audience specification to identify the underlying mechanism that caused the different results. Therefore, the current study was designed to compare an imagined audience and interactive audience.

Attending to Audience at the Revising Stage

As described by Flower and Hayes, writing sub-processes are typically recursive during the whole process of writing, which means that when viewed in a narrow sense, reviewing often is seen as the process of evaluating and revising the somehow complete draft, but when seen from a broader perspective, revision occurs throughout the entire writing process (Flower & Hayes, 1981). The content of revision could be minor changes such as spelling, grammar and punctuations, or major changes such as organization, or adding, changing or deleting ideas. In general, revision is shaped by the constraints and purposes that have been set for the writing task. In the current study, the focus will be on the final revision, that is to say, the writer's revision on the completed draft.

Some researchers (e.g., Roen & Willy, 1988) have argued that it is more effective to prompt writers about the audience during revision, compared to doing such prompting during planning. Bringing audience awareness during this stage can remind the writers of the communicative purpose of their writing. During planning and drafting, however, they need to coordinate all other different subprocesses of writing such as generating ideas,

organizing, translating apart from attending to the audience, whereas during revision writers are more likely to have enough cognitive resources to focus on how well their writing addressed audience (Cherry & Witte, 1998; Elbow, 1987). This could be particularly important for argumentative writing as the writers can focus solely on thinking and checking the validity of their arguments from their audience's perspectives.

If interaction with audience is added to revision activities, the positive effects may be even greater. MacArthur (2007) has stated that audience awareness most typically has been taught through peer revisions. Previous studies on peer revision (e.g. MacArthur, Schwartz & Graham, 1991) have shown that students' writing indeed is improved by this type of activity, although these studies did not examine audience awareness explicitly. It appears, however, that peer revision may have become effective in raising audience awareness and then in improving writing quality in two ways. First is the awareness of the existence of an audience group beyond teachers and the aforementioned "authenticity" of peers as audience brought to the writing task. Second, the audience's feedback on the actual writing product may be even more useful than feedback on ideas not yet expressed in writing (as during interaction with audience during planning). Particularly for argumentative writing, the audience's critiques and suggestions may be directly used to construct counterarguments and alternative views. In addition, if students were to be paired to each take on the roles of both writers and audience, this could bring another unique advantage of peer revision: students can also learn by reading and evaluating others' writing and then reflect on their own (Moore & MacArthur, 2012). This process is likely to involve perspective taking that is highly likely to raise audience

awareness because reviewing their own writing from the audience's perspective is a part of audience awareness.

As mentioned previously, some researchers (e.g. Cherry & Witte, 1998) have proposed that it might be difficult for students to construct audience-oriented texts during composing, but during revision when they have already put other subprocesses of writing behind, they could focus on addressing their audience. Only a few studies, however (e.g., Roen & Willy, 1988), have directly compared the effects of having an audience during planning to having an audience during revising, so discussion on this issue has mostly remained theoretical. Therefore, a goal of the present study is to contribute empirical evidence to this discussion by comparing an interactive audience during planning with one provided during revision.

The Present Study

Given the likely importance of audience awareness in argumentative writing, the goal of the current study was to compare the effects of imagined and interactive audiences (during planning) as well as the timing of interaction (during planning versus during revising) on the quality of college students' argumentative writing and their self-efficacy for this kind of writing. Regarding the choice of audience, peers, as previously stated, may be effective in raising writers' audience awareness. Therefore, students in the current study were instructed to write to their peers (specifically, their peers who also were participants in this study). From this overall objective, two sub-objectives were derived for the proposed study, with the goal of providing more empirical evidence to the literature of audience awareness in writing.

The first of these sub-objectives was to compare the effects of the imagined and interactive audience on writing quality (having balanced arguments, i.e. addressing opposing opinions and including counterarguments). Sato and Matsushima (2006) compared imagined audience during planning and interactive audience during revision (only receiving feedback but not giving feedback), and found that considering audience during revision was more effective for writing. Given the mixed results of prior research about the impact of an imagined audience and positive effects of an interactive audience during planning on writing quality (e.g. Auriac-Peyronnet, 2001; Kuhn and Crowell, 2011), the hypothesis was that students with assigned interactive audience (whether during planning or revision) would have better writing performance (more balanced arguments) than those with imagined audience. In contrast, in comparing the two conditions with interactive audience, the hypothesis was that students with interactive audience during revision would produce better writing than those who interacted during planning because giving feedback on the actual writing products presumably will be more effective than just discussing the ideas. Studying the timing effects of interaction could provide insights into how audience functions in different writing subprocesses. It seems that no previous studies have directly compared these three types of audience specification in one study, especially in their effects on argumentative writing. Therefore, the results should help fill a current gap of the empirical research literature.

The second sub-objective was to compare the effects of these three types of audience specification (imagined audience, interactive audience during planning, interactive audience during revising) on students' writing self-efficacy. Previous studies have shown that writing self-efficacy is closely related to writing performance (e.g.

Bruning et al., 2013; Klassen, 2002. Pajares, 2003). However, few studies of audience have looked at writing self-efficacy as an outcome measure (Wong et al, 1994), and none—to this author's knowledge—has examined self-efficacy in relation to these three types of audience specification. Only Wong et al (1994)'s study looked at audience and self-efficacy and it showed no difference in self-efficacy between audience and no-audience group. It also should be noted, however, that Wong et al's self-efficacy measured general writing self-efficacy, not self-efficacy specific to argumentative writing and audience awareness. The current study investigated the relationship between students' writing performance and their self-efficacy for both argumentative writing and audience awareness (could anticipate audience responses, orient their arguments toward audience, etc.). Measuring self-efficacy specific to argumentative writing and audience awareness allows the investigation of experimental effects on different aspects of self-efficacy for argumentative writing, thus providing greater understanding of the relationship between audience awareness and self-efficacy of argumentative writing.

In sum, from a theoretical perspective, the current study is based on the assumption that studying audience awareness in writing can help extend theories of writing research more generally. As mentioned, many discussions on the topic of audience have remained theoretical. By providing empirical tests of the level and timing of interaction with audience for writers, however, the present study was expected to reveal how audience affected the various subprocesses of writing. It also may help clarify issues related to findings showing that audience sometimes has no effect on writing (e.g., is it because limited cognitive resources are available to be distributed during drafting?),

and also extend these theoretical perspectives to argumentative writing (previous studies on audience awareness involved multiple types of writing).

From an empirical perspective, the current study was designed to add more evidence to the literature on audience, and contribute to a more evidence-based understanding of audience to inform our writing instruction practices in the classroom. If a one-session experimental intervention about audience awareness can be shown to be effective for undergraduate students' argumentative writing, real-world writing instruction that implements these effective features in the classroom over a period of time presumably would produce even greater impact on students' writing that can transfer to their future writing.

From a practical perspective, it is important for teachers to know how and when it is best to prompt students to think about their audience so that writing is actually facilitated and not interfered with, especially for those undergraduate students who are still struggling with argumentative writing (Elbow, 1987; Flower & Hayes, 1981; Roen & Willey, 1988). In addition, writing theorists recently have proposed a sociocultural shift to more "relevant" student writing for students, writing that makes real impact (Morrell, 2008; Pacheco, 2012). So theoretical at least, an important component included in such writing instruction likely would be building student's audience awareness and understanding the communicative function of writing (Behizadeh, 2015). The current study thus can contribute to this sociocultural trend of writing research by providing evidence on the effectiveness of various strategies for building audience awareness.

Chapter 2 Literature Review

Analysis of Argumentative Writing

For many years now, researchers have used Toulmin's model of argumentation as the foundation for constructing assessments of argumentation. As described in Chapter 1, Toulmin (1958) divided argumentation into six basic elements: 1) claim or conclusion (the writer's position on the problem), 2) grounds (reasons or evidence that supported the claim), 3) warrant (the logical connection that led the grounds to the claim), 4) backing (justification to the warrant), 5) rebuttals (counterarguments or exceptions to the claim), and 6) modal qualifiers (the conditions under which the claim cannot hold). For example, Erduran, Simon and Osborne (2004) developed a coding scheme to assess middle school students' science discourse based on Toulmin's six-element model and successfully traced the improvement in student's argumentative skills. However, some have criticized Toulmin's argumentation structure (e.g., Voss & Van Dyke, 2001), pointing out that the model is more suitable for a single argument and may be easier to use in analyzing discourse than written texts because of the segmental nature of conversational statements. In an analysis of a large body of texts such as writing, for instance, the interconnections of different statements can become complicated and indistinguishable. Especially for backing, warrants and qualifiers, each of them could serve as new claims, grounds and data. Perhaps more importantly, as Perelman (1984) has argued, Toulmin's argumentative pattern does not really consider the role of audience. The process of stating one's own opinion and supporting the opinion with reasons and evidence are just one part of argumentation. To "argue", the "arguer" has to address the other sides, i.e. be able to take account into the audience's opinions and negotiate with them (Golder, 1993).

Evidence from empirical studies does in fact support the benefits of including both sides of arguments in argumentative writing. For instance, Golder and Courier (1994) studied argumentative writing of 115 students 10 to 16 years old and found that the developmental process leading to stronger arguments was primarily from only stating one's own opinion and providing reasons to including counterarguments and rebuttals as students grew older. The inclusion of counterarguments and opposing opinions was seen as an indicator of audience consideration and such consideration contributed to the persuasiveness of the argumentation. Allen (1991, 1993) and O'Keefe (1999) ran meta-analyses on argumentative texts to identify variables that contributed to the credibility and persuasiveness of this type of texts. Their analyses revealed that text containing the opposing claims and at the same time offering criticisms of the reasoning underlying those opposing claims (i.e. rebuttals) had significantly greater credibility and persuasiveness, compared to one-sided texts (those only offering one's own side of views) as well as two-sided texts without refutation. That is to say merely acknowledging opposing claims without rebutting them did not add persuasive advantages. Even for argumentations created in oral situations, more counterarguments and rebuttals have been shown to be associated with better performance and higher abilities (Means & Voss, 1996).

In fields related to education, coding systems designed to reflect such more balanced views of argumentative writing have gained much popularity. This type of argumentative analysis framework has been called *standard model* (Inch & Warnick, 2002) or *macrostructural analysis* (Freeman, 1991), compared to microstructural analysis based on Toulmin's model. Various researchers have used the standard model to assess

students' argumentative writing. For example, Reznitskaya et al (2001) created a framework that included position, argument (i.e. reasons to support the position), counterarguments, rebuttals and repeats (idea units that add no new information to the arguments) to assess student's scientific arguments. Behind such macrostructural analysis approach was the pragma-dialectic theory of argumentation (previously briefly discussed in Chapter 1), which was particularly suitable for analyzing argumentation between two parties such as in argumentative writing (Bonevac, 2003). Coding systems derived from this theory (e.g. Feretti et. al., 2009; Nussbaum & Schraw, 2007) basically dissected argumentative texts into individual statements and then coded each statement into functional units depending on their role played in argumentation. Argumentation quality was represented by the counts of these functional units.

For example, Nussbaum and Schraw (2007) studied argumentative writing among 84 undergraduate students in educational psychology courses. To assess students' writing, they divided each text into idea units (the number of different ideas). Each of these idea units then was distinguished by its functions. First, they identified the main position, termed the *final claim*. Second, they found the reasons that supported the final claim, termed *supporting claims*. Third, they located the reasons for the supporting claims, termed *supporting reasons*. Fourth, they looked for *counterclaims (i.e. counterarguments)*, and *supporting reasons of counterclaims*. Finally, they tried to locate *rebuttals* that refuted the counterclaims and the *supporting reasons to the rebuttals*.

Feretti et al. (2000, 2009) used a similar coding system for their studies of argumentative writing. In the first of these (Feretti, et al., 2000), the researchers only distinguished among the clear standpoints, reasons to the standpoints, alternative/

opposing standpoints, reasons to the alternative standpoints, and rebuttals (without counterarguments), probably due to the younger age of their participants (fourth- and sixth graders). At the same time, Feretti et al. (2000) also rated the argumentative texts based on the overall persuasiveness (a 7-point scale). They related the analytic scores from this coding system (the counts of each element) to their overall persuasiveness and showed that this system explained the majority of persuasiveness in their writing (45-50% of the variance). The overall persuasiveness of argumentative text obviously is an important measure of a "good argument," as the general purpose of argumentative writing is to present convincing or persuasive arguments.

But the quality of an argument cannot be simply reduced to its basic elements. Instead, these elements are connected into a structure that as a whole makes the argumentative text become sophisticated and convincing (van Eemeren, Grootendorst, & Henkemans, 1996). In Feretti et al.'s (2009) more recent study with a similar sample, for instance, the analysis of argumentative text was extended to include the structure of argumentation. This newer coding system of argumentative writing was almost identical to that of Nussbaum and Schraw's in that it included the five basic elements in their earlier work, but it also embodied a structural relationship that distinguished the superordinate and subordinate elements within each of the basic elements. For instance, the coding system included level 1 reasons (the reasons as direct support of the main claims, the same as supporting claims in Nussbaum and Schraw's study), and level 2 reasons (the reasons that lie below the level 1 reasons for further explanations, i.e., supporting reasons), counterarguments (i.e. counterclaims). In addition, the coding system also included nonfunctional elements, which refer to statements such as irrelevant

or incoherent information and exact or verbatim repetitions. These nonfunctional elements were similar to the repeats used by Reznitskaya and Anderson (2001) or the nonfunctional elements used by Graham and his colleagues in scoring argumentative essays of their studies that referred to any repeated meaning unit without rhetorical purpose or relevance to the argument (Graham & Harris, 1989; Saxon, Harris, & Graham, 1998). The explained variance in overall persuasiveness by this more extensive coding system increased from 45% to 70%. Such explained variance in overall persuasiveness was verified by Chase's dissertation study (2006) of community college students' argumentative writing, which showed that including superordinate-subordinate structure of arguments significantly predicted the overall persuasiveness. Such structure since has been further adapted and utilized in various studies involving argumentative writing (e.g. Lewis & Feretti, 2010; Moore & MacArthur, 2012; Midget et al, 2008).

Given that the main goals of the present study were to study audience awareness under varied experimental conditions and variations of it might affect students' argumentative writing, the assessment of argumentative writing needed to reflect this objective. Therefore, Toulmin's model may be too detailed (microstructural) for the current study and macrostructural analysis such as that employed in Feretti and Nussbaum et al.'s scoring systems would be more appropriate because the latter derived from pragma-dialectic theory which considers addressing audience as a central piece of argumentation.

Studies of Audience in Writing

The major goal of the current study was to study audience awareness in argumentative writing under conditions in which audience specification (imagined

audience, interactive audience during planning, and interactive audience during revision) was varied. It was expected that an interactive audience, especially during revision, would be more effective than imagined audience in improving students' argumentation quality. Because few studies have directly compared these three different audience specifications, this review of literature on audience will first look at studies of imagined audience and then move on to studies of interactive audience.

Studies of Imagined Audience during Planning

One of the most common ways to study audience effects on writing has been to incorporate prompts related to audience in the writing task. Olinghouse, Zheng and Morlock, (2012), for instance, analyzed prompts of state writing assessments from 44 states and identified potential variables that seemed likely to help create authentic writing contexts and promote students' writing motivation. This included audience specification and audience intimacy. However, the study did not provide any empirical evidence about why audience-related features might have improved writing quality or whether the factors of audience actually had relationships with student's writing quality or motivation.

A few studies, however, have explicitly explored relationships between imagined audience and writing quality. In one early study, for instance, Black (1989) worked with 104 college students to investigate the relationship between their audience awareness and quality of persuasive writing. First, all students were told to write a persuasive letter to a policy committee, and were provided with information on the members of this committee. They then were randomly assigned to engage in one of two pre-writing activities: free writing or training on audience awareness. Students in the audience wareness training condition received information about the audience including their

knowledge, values, attitudes and positions on the topic, and a guide sheet that instructed them to write down the above information for both writers and audience. After this activity, all students started to write the persuasive letter. They then analyzed and rated their own writing regarding the number of arguments that they adapted to the audience and gave the reasons or strategies they used for each of these adaptions. The measure of audience awareness included the amount of audience-related information and the rating of the audience adaption on the pre-writing activity, and the amount of adaptive arguments and level/strategy of audience adaption on the persuasive papers. The results showed that these audience awareness measures explained about 57% of variance in the overall persuasiveness of the students' writing. Compared to the control group, students in the audience awareness training group produced more audience-adaptive arguments, higher level of audience adaption, and their essays were overall more persuasive. Although this study did not compare audience versus no audience (instead, training versus no training on audience awareness), it did show that raising audience awareness through training can lead to more audience-oriented adaption in argumentative writing, which further improves the overall persuasiveness of the writing.

Among studies comparing varied audience specification, merely specifying an imagined audience in the writing task has had mixed effects in terms of improving writing quality. Cohen and Riel (1989), for instance, conducted a study with forty-four seventh graders from two classrooms. All students were asked to write two narrative texts on the same topic, but one was to be addressed to peers in other countries via computer and the other was to be written for grades. The results showed that the narrative texts students wrote for their distant peers were significantly better in content, organization,

vocabulary, language use and mechanics than the one they wrote for grades. Especially in terms of the organization, content and language used in the writing, students their attentiveness to improving these dimensions of their writing to enhance its communicative effectiveness when they wrote to distant peers, despite that both types of writing were on the same topic.

Purcell-Gates, Duke, and Martineau (2007) conducted an experimental longitudinal study in real classrooms with 420 second grade students about the effects of audience on informational and procedural writing. All students were given writing tasks that included audience information to create authentic contexts for them, but one group also received explicit instruction on language features of each type of writing. Students' writing performance was assessed based on the holistic scores and feature of specific genre. Because the interventions were done in real classrooms, the degree of authenticity (how much the writing instruction included a real-world purpose or audience) was also assessed. After a year of such audience-rich writing instruction, the results showed that degree of richness in audience and students' writing performance were positively correlated.

These two studies were not about argumentative writing, however, and the second study was conducted with younger children, not college students. With respect to argumentative writing, the research literature has provided little evidence of audience effect. For example, Redd-Boyd and Slater (1989) investigated the effects of an audience specification on undergraduate students' argumentative writing quality, interest, task difficulty, audience awareness, effort and argumentative strategies. Eighty-seven students were first asked to write an argumentative essay as their first draft and then were

randomly assigned to one of the three conditions (no audience, imagined audience and real audience) to compose the second draft on the same topic (without the presence of the first draft). The audience was the vice chancellor of the college in both audience conditions and students were provided with this audience information. The only difference in the real audience condition was that the vice chancellor of the school actually sent a signed memo, saying that he would in fact select and read their essays. Before the second draft, they engaged in pre-writing activities by answering questions that prompted them to think about ideas based on their conditions (e.g. students in the no audience condition just brainstormed ideas; those in the two audience conditions were prompted to predict the audience's reactions). Then all students answered a questionnaire regarding the purpose of the experiment, the treatment, their audience awareness, interest, task difficulty and effort, as well as their explanations on these motivational measures. After the experiment, 13 students volunteered to do follow-up interviews. During the interviews, students looked at their first and second drafts and were asked questions regarding their writing choices.

The results did not support the advantage of real audience over the imagined audience on the overall persuasiveness (rated by both the teacher and the vice Chancellor) of the writing, but the two audience groups did score marginally but not significantly higher than the no-audience group. However, both questionnaire and interview data showed that students who wrote to an assigned audience—either imagined or real—expressed more interest and invested more effort in the writing. In addition, the interview data also showed that the real audience group used more audience-oriented

strategies than the other two groups, and imagined audience group more than the control group.

Interestingly, this study also explicitly probed participants' audience awareness, and found that a possible explanation of no audience effects could be attributed to conceptions of who their audience actually was. During the interviews, some participants revealed that even after they were assigned an audience, they still envisioned the researchers or at least an intermediary person as the "real" audience. Also, some students in the real audience condition expressed their lack of belief that their essays would be really read by the purported audience. Therefore, the authors reanalyzed the data based on the self-imagined audience versus no audience. The persuasiveness score from students who self-reported thinking about audience (regardless whether assigned or not) was much larger that for those who did not. Thus, although the experimental manipulation on audience seemed to fail, this study's results still seems to provide evidence of the effects of audience on the quality of argumentative writing. At the same time, however, it should be noted that students who self-imagined an audience regardless of the writing instruction may also already have been skillful writers with strong audience awareness prior the experiment. Taking this view further, the study suggests that merely specifying an audience may not enough to improve student's argumentative writing because students may not know how to address an audience in their writing.

Similar view was shown in Feretti, Lewis, and Andrews-Weckerly's s series of studies about argumentative writing. For example, Feretti, Lewis, and Andrews-Weckerly (2009) asked 96 fourth- and sixth graders with and without learning disabilities to write an argumentative essay addressed to their teachers (teacher as the audience). The two

conditions compared were with and without guidance of how to address their audience. Some students received guidance to include the basic elements of argumentative writing: a claim, two or three reasons for the claim, examples or supporting evidence for each reason, two or three reasons to the opposing side, plus their rebuttals. They did not find differences in the amount of reasons students produced to support their standpoint between the two conditions (with and without guidance), but greater numbers of alternative standpoints and reasons to the alternative standpoints were produced in the condition with guidance.

Some research has even indicated that tying an audience to an argumentative writing task might produce negative effects on student's writing. Nussbaum and Kardash (2005) touched on the effects of audience through writing goal variation. They randomly assigned seventy-seven college students to a 2 (a persuasion goal vs. no goal) x 2 (the provision of a text vs. no text) experimental design. For persuasion versus no-persuasion goal, a more specific audience manipulation was added to the persuasion condition, in which students were asked to write a persuasive letter to their congressional representative, while in a no-persuasion condition, students simply wrote to express their opinions. In the text condition, the experimenters outlined both sides of arguments were outlined for the students, with the intent of bridging the possible knowledge gaps of the topic and to improving the quality of their arguments. The results showed that students having the goal of persuading an audience wrote fewer reasons and gave evidence for counterarguments. Overall writing quality was also lower, unless students were given the support of the outlining texts to compensate for the negative effects of the audience manipulation.

It should be noted, however, that these two studies only included the audience as part of the instructions for goal setting, and did not explicitly examine how audience specifications might affect the argumentative writing quality. They did show, however, that contrary to other genres of writing (e.g. narrative writing in aforementioned studies), merely assigning audience for argumentative writing may have no or even negative effects on writing quality. Based on their results, Nussbaum and Kardash (2005) indicated that teachers should be careful about including audience information intended to create authentic writing context and enhance argumentative essay persuasiveness, because this can actually hurt the quality of argumentation by decreasing the reasoning on the counter-side. They suggested that teachers should either give explicit instructions for students to balance the pro- and counterarguments without a specific persuasion audience or, if an audience to be persuaded is specified, to add guidance to prompt students to scrutinize both sides of their own arguments.

Studies of an Interactive Audience during Planning

Another instructional strategy related to audience is interaction with an actual audience such as peers. Researchers have shown that interactions with peers can be as effective as receiving direct instruction (e.g., Dyson, 1990; Preus, 1999). Therefore, the seeming insufficiency of imagined audience led to the first objective of the current study: the comparison of imagined audience and interactive audience. As for interactive audiences, previous studies have created conditions in which students and audiences interacted during either the planning or revising stages of writing. Therefore, the following literature review also includes studies involving interactive audience during planning and during revision, respectively.

In this proposed study, *interactive audience during planning* refers to college student writers' oral discussion with their audience—their peers—about ideas related to the writing topic. For argumentative writing, this discussion will involve some extent of oral argumentation with peers. Its difference from the imagined or non-interactive audience will lie in the fact that the audience not only will be real (as in Redd-Boyd et al's (date) study), but also interactive with the writers. From a sociocultural perspective, an added social dimension might be expected improve the communicative function of writing as well as increase motivation by giving a purpose to the writing.

As described in Chapter 1, the advantage of having an interactive audience *before* composing an argumentative text is that students no longer only anticipate but "learn" the audience's reactions by exchanging ideas with them. Santo and Santo (1999) discussed their series of studies designed to examine how audience characteristics affect people's writing. When Christian subjects in their studies knew their audiences were also Christian, they were able to predict their audience's reactions accurately based on their common beliefs, and included more counterarguments to address potential criticisms. Although the manipulations in these studies were not the same as actually interacting with the audience, the underlying assumption was the same—that when writers knew the audience's positions and thoughts, they would reflect more on their own writing and thus try to address and rebut potential criticisms of their arguments.

Another advantage of having an interactive audience may be that students not only learn about their audience, but also can practice argumentation during the interaction. One line of studies utilizing oral argumentation with peers to develop written argumentation skills has come from researchers who adopted the concept of collaborative

reasoning, which refers to oral argumentation with peers on the writing topic. Empirical evidence has shown that collaborative reasoning can facilitate the development of students' argumentative skills (Keefer, Zeitz, & Resnick, 2000), which can also be transferred into argumentative writing. The central premise of the argument for collaborative reasoning being beneficial is that, by providing students with the absent interlocutor, dialogic argumentation can serve as the precursor and developmental origin of the written argumentation (Graff, 2003). For example, Kroll (1984) examined the relationship between audience awareness in written argumentation and that in oral argumentation. Forty-nine 9-year-old elementary school students wrote persuasive letters to imagined audience and then engaged in oral argumentation with imagined listeners. The author then compared the audience adaption elements in their writing (content-related statements that would help an audience grasp the background and descriptive details of the issue, and persuasive appeals) and listener adaption elements in their messages sent to the listeners. Results showed these two were positively correlated, which showed the dialogic nature of argumentation and possible benefits of providing an interactive audience.

Auriac-Peyronnet (2001) also found a positive relationship between providing an opportunity for oral argumentation with peers and quality of argumentative essays among students aged 10 and 11 years old. Ninety students either engaged in oral argumentation with peers or not, and then wrote argumentative essays. Findings showed that 11-year-old students in the experimental group produced better argumentative texts (i.e., texts that were more balanced with counterarguments). Although 10-year-old students did not demonstrate such an association between oral and written argumentative skills, the author

speculated that,with further development, younger students would be likely to catch up later on the association of these two types of argumentative skills.

With older students, the ability to generalize argumentative skills and audience awareness learned from peer discussion to argumentative writing has been shown in some studies. Kuhn and her colleagues conducted a series of studies with sixth graders about the impact of arguing with peers on reasoning and writing. For instance, Kuhn and Crowell (2011) evaluated the effects of peer argumentation on students' argumentative writing with 91 sixth-grade students through a three-year longitudinal intervention study. Each student in the intervention group collaborated with a partner to discuss the topic with another pair of students (creating oral arguments). The discussions were guided by a worksheet that reminded students of their own arguments as well as of counterarguments and rebuttals that could be used to strengthen their arguments. Students in the control group, in contrast, engaged in teacher-led whole-class discussion on the same issue and were assigned practice essays to write. The results indicated that the intervention group wrote better quality arguments (in terms of the number of different categories of idea units, e.g. no argument, own-side argument, dual-perspective argument and integrative-perspective argument) than the control group despite the fact that the latter actually had more writing practices. A later analysis with the same dataset (Kuhn & Zillmer et al, 2013) revealed that during the discussions, students in the intervention group already included significantly more counterarguments addressed to their discussion partners than those in control group, indicating their heightened attention to the discussion partners and increased awareness of audience and audience reactions that were essential to argumentation.

Reznitskaya, et al. (2001) conducted a quasi-experimental intervention study over a five-week period exploring how interaction with peers affected students' argumentative writing. A total of 115 students in six classrooms from four schools participated in the study. Three of the six classrooms received the intervention. Students receiving the intervention participated in small group (6 to 8 people) discussion twice a week on controversial issues under teachers' guidance using a framework that is often seen in written argumentation: advance one's opinion, provide supporting reasons and evidence for their opinions, challenge other's viewpoints by offering counterarguments and rebuttals, and ask for explanations. Meanwhile, the intervention groups also engaged in online discussion with other participating intervention groups. Results showed that students in the intervention group produced a significantly greater number of arguments, counterarguments, rebuttals and argument strategies and also used them during group discussions and in their writing.

Because these studies were conducted over relatively long periods of time, students had time to fully incorporate the argumentative skills they learned from the discussion into their writing. So even though the audience of the students' writing (teachers) and of their discussion (peers) did not match, improvements in audience awareness and overall quality were still manifested in their writing. If their audience for discussion and writing were the same, the transfer of audience awareness and argumentative skills into the writing might be even more obvious.

An earlier study by Gallini and Helman (1995) in fact had shown the benefit of matching audience of discussion and writing. They investigated the effects of interacting with different audiences on fifth graders' writing of informative text. Forty-five

participants engaged in discussion questions and in exchanging ideas on student-posed questions and short writing practices of informative text with a group of students in another country. They then were randomly assigned to three audience conditions for the informative text: the teacher, a peer of their choice from the classroom, and distance peers with whom they had had discussions. With respect to the analytic and holistic scores of their writing, writers who were directed to the distant audiences showed more elaborations as well as better organization and cohesion. Students in this group also showed greater interest levels, whereas writing directed to classroom peers had the lowest scores. Results of this study indicate that even in a short experiment, students still can learn to attend to audience from pre-writing discussions with an audience, at least when the discussion and writing audiences were the same.

But Gallini and Helman's study focused on relatively simple narrative writing. But will interaction in a short experiment still be useful for improving students' writing in more complex writing genres such as argumentative writing? Higgins, Flower and Petraglia (1992) paired up 20 college freshmen enrolled in two composition courses in dyadic groups to plan their writing together. The purpose of the study was to train students to effectively use collaboration to benefit their own thinking and writing. During the collaborative planning, students were guided to think and discuss the topic-related ideas and three rhetorical aspects of the writing: purpose and key points, audience, and text conventions. The writing task was a problem-solving task (identify a problem, and provide solutions). With respect to the audience, they were only instructed to identify an audience that might be interested in their topic instead of being assigned an audience or treating their partner as the audience. Student's discussions then were audiotaped. The

results showed that students who engaged in reflective discussions with peers (used peers' suggestions to reflect on their own ideas, considered alternative plans, thought about rhetorical purpose of their writing with respect to their audience, etc.) wrote higher quality papers. Also, analyses of the discussion transcripts showed that a fair proportion of students' discussions (but still only half of that devoted to purpose and key point) were devoted to audience. However, their thinking and planning were mostly about the *identification* of an audience, instead of likely audience responses and strategies of how to adapt their writing to audience. Higgins et al. thus concluded that although these students were not novice writers, they placed little emphasis on audience in their planning, even though they were explicitly asked to think about it and had help from their peers.

Although students' collaborators were not the designated audience in Higgins et al.'s study, the study raises several interesting questions: For instance, even when students discussed and thought of audience during the interaction, did they think of audience in the way that would benefit their writing? Did they know how to adapt their writing according to the audience's needs? As mentioned in Chapter 1, the inherent nature of argumentative writing is dialogic. Giving students the opportunity to directly speak to their audience reflects this dialogic nature of argumentative writing in a seemingly monologic task context, which may result in better-written arguments. So far these studies assigned students to interact with audience before writing, but if students also receive audience feedback on the quality of their argumentative writing (e.g. during revision), the positive effect may be even greater than just discussion of the pre-writing plan.

As can be seen from the results of these studies, it is important to find out *when* to engage students in interactions with their audience so that these interactions will have the greatest chance or improving writing quality. Thus, the second objective of the present study was to directly compare effects of an interactive audience during planning to those generated by an interactive audience during revision. Although most past studies have not directly compared conditions of audience specification in a single study, studies of peers as audience and those examining effects of peer revision on writing nonetheless can inform the design of the current research. We now turn to such studies.

Studies of Audience during Revision

In the current study, having an interactive audience of peers during revision for writers is framed in two different ways: having peers as an audience (writing to peers) and receiving peer revisions (students writers in the same group serving as each other's audience to provide feedback on the writing products regarding the key elements of argumentative writing). Although a number of the studies following do not necessarily include both conditions, their procedures and results still shed light on the issue of how audience attention during revision can affect writing.

Peer revision studies. The research literature has provided considerable evidence of the beneficial effects of peer revision, especially on younger students' writing. For example, MacArthur, Schwartz and Graham (1991) examined how peer revision impacted revision behaviors and the quality of narrative writing among fourth, fifth, and sixth grade students. Twenty-nine students were randomly assigned to either peer revision condition or individual control condition. In the peer revision condition, students worked in pairs to revise and then discuss each other's papers. The results showed that those

students who interacted with peers made more revisions and produced papers of higher quality than those in a control condition. Other research has involved a peer revision component via the study of collaborative writing. For example, Hidi, Berndoff and Ainley (2002) had 180 sixth graders work in small groups of five to write argumentative essays, but instead of writing for teachers, some of them had the opportunity to exchange writing, provide feedback, make suggestions and request clarification with students at another school and revise their writing based on what they learned from these interactions. The results showed that only boys in the larger-audience condition showed significant improvement in their writing and student self-efficacy was significantly higher after the intervention.

Peer revision also seems to have the potential to create equal or greater effects than teacher instructions. Wong, Butler, Ficzere, Kuperis, Corden and Zelmer (1994), for instance, examined the effects of varying audience interaction during revision on students' writing performance of narrative essays and their self-efficacy of writing. A small sample of 31 eighth and ninth graders (including students with learning disabilities and English language learners) was assigned to one of three conditions to revise their essays: control group with no audience, interactive audience with teachers as the audience, and interactive audience with peers as the audience. In the peers as audience group, students in each dyad took turns serving as the audience to provide comments on their partner's essays, whereas teachers in the teachers as audience group commented on students' writing and gave direct instructions. Writing performance was assessed based on writing clarity and thematic saliency. The results indicated that both interactive groups were equally effective in terms of improving students' writing compared to the control

group. However, students in the teacher as audience group had higher self-efficacy after intervention compared to the control group, but did not in the peer as audience condition. Boscolo and Ascorti (2004), however, found that peer revision could be even more effective than teacher revision. A total of 122 students from fourth, sixth, and eighth grades were randomly assigned to a peer revision or teacher revision condition. Students in the peer revision group showed significant improvement in their awareness of audience as indicated by fewer clarity and inconsistency problems in their writing. In a related vein, Olson (1990) examined the additive effect of direct instruction on top of peer revision. He assigned 93 sixth graders to four conditions to write an autobiography: a control condition, a direct revision instruction condition (the instruction included audience awareness), a peer revision condition, and a peer revision plus direct instruction condition. The results showed that the two peer revision groups both showed improvement in their first and final draft after revision, but that direct instruction did not contribute much to the improvement when compared to only peer interaction and feedback.

As MacArthur (2007) has stated, peer revision can be a good way to raise audience awareness. Although studies on peer revision may not have explicitly examined its effect from the perspective of audience awareness, they generally have shown its effectiveness in improving writing. Nevertheless, in these studies peer revision or feedback was more effective in improving writing when compared to teacher or self revision. But is peer revision or feedback still more effective when compared to peer as imagined audience during revision (i.e. when there are varied levels of interaction with an audience instead of a comparison to a different audience)?

Studies with varied levels of interaction with audience. Traxler and Gernsbacher (1992) compared the interactive and imagined audience during revision on helping college students form better representations of how their texts conveyed ideas to the audience. In the first experiment, 32 freshmen and sophomores were randomly assigned to be either the writers or the readers/audience. Each writer was told to write a descriptive text about a set of geometric figures for two readers. After they finished this initial writing, their readers performed the figure selection tasks based on the written texts provided by the writers. Then all writers had the opportunity to revise their writing. Half of the writers actually received the readers' performance as feedback on their descriptive writing, but half did not. After the revision, the readers had another chance to perform the selection task based on the revised texts. Results showed that writers in the audience feedback condition produced significantly more improvement in terms of the readers' performance than those in the imagined audience condition. In a second experiment, Traxler and Gernsbacher extended their study to examine potential transfer effects of audience feedback on writers' mental representations of the audience's perspective. The procedure was the same as the first experiment, except that after half of the writers had received feedback from their audience, they were asked to write a new descriptive text. Based on the same outcome measures (the readers' performance), the results showed transfer effects on writing quality of interacting with audience during revision.

Sato and Matsushima (2006) used a similar type of writing task in three experiments to explore the impact of imagined audience versus no-audience on writing, then imagined versus interactive audience. In the first of two experiments, they looked at both immediate and transfer effects of how an imagined audience on writing might affect

planning and quality of the texts. Forty-five undergraduate students were assigned into two conditions to write a text that described a geometrical figure. In a high audience-awareness condition, students were asked to write to describe a geometrical figure so the other undergraduates (as audience) could accurately draw it out, while in a low audience-awareness condition, they were asked only to describe the figure as accurately as possible. In addition, a "naturally occurring" medium audience-awareness group was also identified, based on the fact that some students in the low audience-awareness condition imagined an audience on their own without the instruction prompts. All students were allowed to write a draft first and then a revised copy. Results showed that the high audience-awareness group spent more time planning and writing the first draft, and that both the high and medium group spent more time on the whole writing process (including revision). In addition, the high audience-awareness group wrote longer and more elaborated texts than the low audience-awareness group.

In the second experiment, the effects of audience awareness on quality of the texts were examined from the audience's perspective. Fifty-eight undergraduate participants read the prototype texts from high, medium or low audience-awareness group in Experiment 1, with results showing that students who read texts from the high audience-awareness condition drew more accurate figures than those who read texts from the other conditions.

Sato and Matsushima's third experiment was targeted at secondary school students and further compared imagined audience and interactive audience during revision. Fifty-six ninth graders served as the writers, while 56 seventh graders served as their audience. During the writing stage, the writers again were assigned to high and low

audience-awareness and feedback conditions, with instructions for high and low groups the same as in the first experiment. However, writers in the feedback condition actually received feedback from their readers after the first draft, but the other two conditions did not. To test for transfer effects, all students then were asked to write another descriptive text. This experiment showed that compared to older students in previous studies that produced better writing by attending to audience, for younger students, just being told to attend to audience (as in high audience-awareness condition in the first experiment) did not improve the quality of writing, but actual feedback from the audience did. Moreover, this enhanced audience awareness transferred to the new writing for students in the interactive audience group.

Although both studies involved an interactive audience during revision, it is useful to note that the interactions were not reciprocal, that is to say, the writers themselves did not give feedback. In the current study, however, interactions with audience during revision were designed to engage students in reciprocal peer revision. As stated earlier in Chapter 1, in comparison to non-reciprocal peer revision, reciprocal peer revision appears to have an additional benefit that students can acquire greater audience awareness by also serving as a feedback-giving audience.

Holliway and McCutchen (2004) have in fact provided evidence for this assumption, using a similar descriptive writing task (describing a figure) with fifth- and ninth-grade students. In all, 78 fifth-graders and 76 ninth-graders participated as the writers with another 52 ninth-graders serving as an audience. All writers first wrote descriptions of figures, and then were randomly assigned to one of three conditions to revise their writing: 1) an audience-feedback-only condition, in which writers were

notified whether their audience had successfully drawn the figures based on their description; 2) an audience-feedback-rating condition, in which writers not only knew whether their own description was successful or not, but also read and rated texts from other students (both received and gave feedback); and 3) an audience-feedback-drawing condition, in which writers performed the same tasks as those in the second condition, but also actually drew the figures based on the texts they read. After the revision activities, all writers again wrote a new descriptive piece. With the audience's performance (accurately drawing out all figures) as the outcome measure, the results showed that only audience-feedback-drawing condition had significant improvement in their revised writing and better performance by their audience based on the new descriptive piece. Meanwhile, writers' self-reflection also showed that most students expressed positive attitudes toward the experiment, except those in the audience-feedback-only condition. In general, it would appear that Holliway and McCutchen's study shows that when students interact with the audience to both receive and give feedback (i.e. reciprocal revision), the benefits can be even larger than when they only interacted to receive feedback, presumably because students are also put into "audience's shoes" when engaged in such activity.

In another test of the benefits of giving feedback as audience for enhancing audience awareness, Moore and MacArthur (2012) also conducted a mixed-method study to explore this issue with 87 fifth graders. They asked the students to write two persuasive letters to teachers or principals and then engaged in revision activities in one of three conditions: 1) an audience condition, in which students joined in groups to read and discuss persuasive letters written by their peers (who did not participate in the study),

2) an observer condition, in which students observed the students in the reader condition and took notes, and then held their own discussion to generate criteria for how to make their letters persuasive, and 3) a practice-writing/control group, in which students just moved into revision directly. All groups then had the chance to write a second draft. Qualitative data of students' thinking during revision and group discussion were collected via think-aloud and semi-structured follow-up interviews.

The results showed that, when compared to a control group, participants in the audience condition made significantly more revisions and included more elements related to audience awareness, such as alternative views. Their second drafts also were of better quality than those of control group, while the observer group did not differ from either group on these criteria. The audience group also demonstrated more evidence of audience awareness than the control group in terms of making statements that appealed to the audience (i.e. how their own propositions might also benefit the audience), using tone appropriate to the audience, and generating more counterarguments and rebuttals.

Raised audience awareness was verified by interviews with students in the audience group, where students expressed more interest in and higher perceived task values of the activities. Also, while the observer group showed the same interest in their observing activities, they judged the activities performed by the audience group to be even more interesting. The control group, however, seemed to perceive their activities as irrelevant for learning writing. Compared to the observer group, the audience group received training of audience awareness through giving feedback and included more audience-oriented statements indicating that giving feedback was effective in raising audience awareness. Thus, *receiving* feedback from audience may help improve writing

quality from an audience's perspective, but *giving* feedback seems to actually put students in audience's perspective, making their assuming that perspective more likely to transfer into their future writing.

Studies with varied timing of attention to audience. Overall, the three studies just described compared different levels of interaction with audience during revision, showing that an imagined audience tends to be superior to no audience, and that an interactive audience is superior to an imagined audience. As for the timing of audience specification, another focal point of the present research, Roen and Willey (1988) conducted a study specifically examining how the timing of attention to audience affected students' quality of writing. Sixty freshmen were asked to write a paper of their own choice (both topic and genre) and then randomly assigned to three conditions under which to produce this paper: no audience, attending to peer audience during planning, and attending to peer audience during revising. All students received instructions on drafting and revising their essays, but no actual interaction with audience was provided. Instead, an audience-related prompt provided them with reminding questions during planning or revision that directed them to consider the audience's knowledge of the topic. Therefore, this study purely looked at the timing of attending to audience, without interaction. Holistic scores using a six-point scale on both original and revised copies were used to assess writing performance. On the original draft, those students asked to address audience's needs during planning did not produce significantly better essays than those in the no-audience condition. On the revised essays, however, both audience conditions (during planning and during revising) showed significantly better quality than those in no-audience condition. These results seemed to indicate that students more likely

to attend to audience during revision instead of drafting since they chose to better address audience on revised essays instead of original drafts.

Although the studies related to audience awareness discussed to this point have not been primarily focused on argumentative writing, some have examined audience awareness in a context of argumentative writing. For instance, Midgette, Haria and MacArthur (2008) compared no-audience versus imagined audience during revision through goal setting. The writing task design was adapted from Nussbaum et al.'s (2005, 2007) studies. In contrast to earlier studies, however, all manipulations were provided during the revision stage. One hundred eighty-one 5th and 8th graders received the same writing prompts to write a draft and then were randomly assigned to three conditions to revise it. In a general goal condition (GG), students received general instruction to make any change they thought would improve their essays;, while in a content goal (CG) condition, students received guidelines to make revisions specifically related to improving the effectiveness of their argumentation. The guidelines were similar to Nussbaum et al.'s requirements for more balanced argumentative writing. In the content goal plus audience awareness condition (AG), students were given the same guidelines as those in CG condition, but further instructed to think about readers and how they might respond to their writing.

Results showed that audience awareness did in fact result in inclusion of more arguments on opposing side. Compared to the other two conditions, students in the AG condition wrote better argumentative essays in terms of more functional elements of argumentative writing including addressing opposing reasons and rebuttals, whereas students in CG condition did not generate more elements of argumentation than students

in general condition. In terms of overall persuasiveness, students in both AG and CG conditions wrote better argumentation than those in the general condition, but no difference was noted between AG and CG conditions. When the researchers examined the tone and direct address of readers in students' final writing as indicators of enhanced audience awareness, however, they did not find any differences between conditions. Their explanation was that students likely lacked knowledge of tone and direct engagement of readers.

Given the results from Midgette et al.'s study and Nussbaum et al' s study that audience specification during planning resulted in less persuasive argumentative writing, one might speculate that if the audience awareness is brought up during revision, its effects on argumentative writing become positive. This seems to concur with Elbow's (1987) observation that consideration of audience is not always present throughout the entire writing process. The theoretical explanation behind this is that there often are too many constraints students have to deal with during drafting such as idea generation, organization, and so on (e.g., Cherry & Witte, 1998) and therefore the issue of audience tends to be ignored during these early stages. But when writers get to a revision stage, they are likely now to have enough cognitive resources to attend to other constraints such as audience. The lesson learned from these two studies perhaps is that *when* prompts about attending to audience are given to students may be critical for the effectiveness of audience specification.

But are these theoretical explanations accurate? The studies just cited do not provide enough information to answer this question definitely, but Rafoth (1985) has provided some perspectives on this issue. In his work, he explored when and how

audience might affect student writing by asking college students to make audience-related decisions during either planning and revising stage of writing. He selected 60 good and below-average college freshmen (based on their overall writing ability and performance on a persuasive writing sample) and asked them to write a persuasive letter to an audience who would really read their letters. The audience's name, picture, background and positions on the topic were also given to the students. All students had the opportunity to write a first draft and revise it. Before the writing, students were asked to make a decision on what additional information they wanted to know (a news article written by this audience on the topic, a few general ideas on the topic, or nothing). After the first draft, students then provided the rationales for their choices, with a few of them given the opportunity to elaborate on their rationales in a follow-up interview. Students' drafts then were returned and they revised them to finalize their writing. Before the revision, however, students again were asked to make a choice from the same three options as they had before the first draft and to provide rationales. Refoth then compared the choices of the good and below-average students as well as their rationales to their choices.

Results showed that audience-related information was not the priority for both groups of students during composing, given that the general ideas on the topic instead of the audience's opinions on the topic were chosen by both groups for composing the first draft. However, more students in both groups chose audience-related information for revising the final draft, and more good students made the audience-related choice for both first and final drafts than the below-average students. In stating their rationales for their choices, those who chose general ideas on the topic during drafting generally indicated

that their primary concern was to generate ideas. Some of them even thought that audience information might inhibit their own thinking, whereas in revising their final drafts, they started to consider whether their ideas were related to their audience.

In Rafoth's study, students revealed how they used audience in their argumentative writing through their self-reports about making audience-related choices. In the current study, however, the goal was to further explore issues related to audience effects on writing by experimentally manipulating the audience choices students had, thus providing more direct evidence on how different audience choices might influence actual argumentative writing. A more general purpose, of course, was to provide information about which conditions for building audience awareness during writing best facilitate students' argumentative writing. As noted, however, most audience-related writing studies have focused on writing quality, with only a very few considering enhanced motivation—specifically improved self-efficacy as a key outcomes of raised audience awareness. Given its importance to success in any domain, self-efficacy for writing was judged to be an important focal point of the present study.

Self-efficacy and Writing

In the studies reviewed thus far, motivational variables such as self-efficacy for writing have received scant attention. But more generally—independent of the topic of audience awareness—self-efficacy has been shown to be a significant predictor and outcome indicator of improved writing skills (Bruning et al, 2013; Klassen, 2002; Pajares, 2003; Hidi et al, 2002). Given the crucial role audience awareness has been shown to play in producing higher quality argumentative writing, it may be that increases in audience awareness may also be tied to increases in self-efficacy for including

audience awareness and audience-related components (e.g. counterarguments, and opposing opinions) in argumentative writing instruction, and should further help their future writing. Therefore, beyond examining effects of varying audience specification on writing quality, the proposed study also will focus on potential changes in writing self-efficacy as a function of varied audience specification.

Self-efficacy is defined as individuals' judgments of their capabilities to execute courses of actions to reach a designated level of performance in prospective situations (Bandura, 1982). Self-efficacy influences students' efforts and persistence through expectations of eventual success. The more self-efficacious students are in any domain—the stronger beliefs they have for their success—the more willing they will be to put in effort and persevere in the face of obstacles and aversive situations. Writing is such a complex process that it requires self-regulation and allocation among a lot of mental resources. Investment of efforts and perseverance—and self-efficacy for successful performance—thus become critical for writing and learning to write. Empirical evidence has shown that writing self-efficacy is related to students' writing performance at various grade levels, even after accounting for previous performance or writing aptitude (Klassen, 2002; Pajares, 2003; Pajares & Johnson, 1994, 1996; Pajares & Valiante, 1997; Shell, Colvin & Bruning, 1995), and that it directly and indirectly affects writing performance through self-regulatory strategies such as goal setting and personal standards (Zimmerman & Bandura, 1994). In the current study, a primary goal was to investigate how the different audience specifications might change self-efficacy for argumentative writing.

As for studies that varied audience specification and writing, to this writer's knowledge, only Wong et al. (1994) has examined self-efficacy of writing as an outcome measure. They found no difference between the group with assigned audience and the group without audience. Other studies that were more remotely related to audience and writing, however, such as de Bernardi and Antoneli's (2007) collaborative writing study, have examined self-efficacy as an outcome of a writing intervention. In their study, students discussed the topic and the characteristics of argumentative writing, worked in groups to practice on drafting, and eventually were tested on individual writing. The results showed both writing self-efficacy and performance were significantly improved after the intervention; however, there was no between-group manipulation related to audience in the study. A study by Hidi, Berndoff and Ainley (2002), which included both audience manipulation and measurement of general writing self-efficacy, did not examine between-group difference in self-efficacy or try to associate self-efficacy with writing quality.

On the other hand, the present author's pilot study (Wang, 2014) showed that for students with initial low self-efficacy, self-efficacy did not change after the planning activity in the imagined audience condition, but did increase in an interactive audience condition, with the largest changes occurring in the self-regulation dimension of writing self-efficacy. However, this difference of change pattern did not appear among students with medium and high initial self-efficacy. Moreover, as a domain-specific measure, self-efficacy for writing needs to be relevant and specific to the writing genre. Although Bruning et al (2013) have designed a self-efficacy scale focused on three major aspects of writing—conventions, ideation, and self-regulation—even this measure of writing self-

efficacy still is quite general with respect to specific writing genres. The predictive power of self-efficacy is the strongest when it is closely aligned with the outcomes assessment (Pajares & Valiante, 2006). Therefore, a more domain-specific measure of writing self-efficacy was judged necessary for assessing self-efficacy related outcomes for the major independent variable of present study—the role of audience awareness in argumentative writing.

Because no prior studies have provided a measure of self-efficacy for argumentative writing, the present author (Wang, 2014) created a new five-item measure, one that is specific to only the argumentative writing task in the current study, and designed to be utilized in addition to Bruning et al.'s writing self-efficacy scale to assess the self-efficacy for argumentation. Its five items are based on the requirements of good arguments (e.g., Nussbaum & Schraw, 2007) provided to students, namely measuring their self-efficacy for (1) taking clear positions, (2) providing convincing reasons and evidence, (3) elaborating to justify the positions, (4) addressing opposing positions, and (5) providing rebuttal to the opposing positions. Results of Wang's pilot research showed that self-efficacy for argumentation was in fact related to students' inclusion of opposing sides of arguments (e.g. opposing views, reasons that support opposing views, counterarguments, and rebuttals), but not to their "own side" of arguments among students with lower self-efficacy of argumentative writing. Also, this association between self-efficacy of argumentation and opposing side of arguments was the largest in the group with an interactive audience. Thus, not only addressing opposing opinions and making rebuttals were related to audience awareness in argumentative writing, but also explicit measures of self-efficacy for addressing audience seem highly promising as

markers of important outcomes. In sum, with respect to self-efficacy, the current study was designed to implement the third objective mentioned in Chapter 1, namely that a domain-specific measure of self-efficacy for argumentative writing could be expected to show sensitivity to the experimental manipulation and associations with writing quality.

Hypotheses of the Proposed Study

The first objective of the proposed study was to compare the effects of imagined and interactive audiences on the quality of argumentative writing. To date, research has provided mixed evidence on the effects of presenting imagined audiences to students during drafting/planning stage of writing. Particularly, studies such as those by Nussbaum et al (2009) have shown that imagined audience may not have the expected positive effect on college students' argumentative writing performance. In contrast, however, research with interactive audiences has shown that such interactions can have positive effects on writing quality, especially for argumentative writing (e.g. Kuhn & Crowell, 2011). Therefore, the initial hypothesis was that students assigned to an interactive audience condition (either during planning or revision) would produce better argumentative writing than those writing under imagined audience conditions. In terms of the timing effect of the interaction, researchers and theorists (e.g., Cherry & Witte, 1998; Elbow, 1987) previously have speculated that writers are more likely to pay attention to audience during revision, where cognitive load presumably is less than that during drafting. This speculation is partly bolstered by Roen and Willey's study (1988) that college student writers did in fact choose to attend to audience during revision instead of during planning/drafting. Therefore, students assigned to an interactive audience condition

during revising could be expected to produce better essays than those assigned to both the interactive audience condition during planning and the imagined audience condition.

The second objective for the current study was to examine effects of different audience specifications on self-efficacy for writing argumentative essays. Because students with an interactive audience at planning would exchange ideas and arguments with their audience, these activities theoretically should make the writing task easier. Thus, in the proposed study, self-efficacy for writing measured after the planning activity was hypothesized to be higher for this group than the other two groups. Nevertheless, both theory (Bandura, 1997) and empirical studies (e.g. Schunk & Swartz, 1993) lead to predictions that feedback on the writing products will result in a change of self-efficacy, but how it changes may depend on the nature of feedback they receive. Therefore, it was possible that students with an interactive audience during revision would have different self-efficacy levels after the revision, but how it they would compare to the other two conditions was uncertain.

Chapter 3 Method

Participants

A total of 138 undergraduate students enrolled in four undergraduate child and adolescent psychology courses at a major American university voluntarily participated in this study. Students in these four courses mostly were enrolled in elementary and secondary teacher education programs. Participating students from the two child psychology courses received extra points up to 2% of their total grades, while those from the other adolescent psychology courses received two research credits that could be applied toward fulfilling a requirement of three research credits. The study was approved under UNL IRB# 20141114718 EX.

The participating students (age M = 21.0, SD= 3.4) included 75.9% female, 24.1% male; 87.7% White, 5.1% Hispanic, 2.9% Asian, 1.4% African and 2.9% other. Class status of the students included 7.2% freshmen, 26.1% sophomore, 34.8% junior, 30.4% senior, and 1.4% graduate students. Students further were asked to report their general grade of college writing assignments. 52.9% reported mostly were A+ or A, 44.9% were B+ or B, 2.2% were C+ or C, and no one reported below C. Of the total group of 138 participants, nine (6.5%) reported that English was not their native language.

Measures

Self-efficacy for writing. Self-efficacy in the current study was measured at three different time points during the experiment: (1) after the instruction but before the planning (different from the pilot study which given before the instruction, time 1), (2) after the planning activity but before the actual essay writing (time 2), and (3) after the revision (time 3). It should be noted that the self-efficacy items rated by the students were

the same at all three time points, but that the focus of the measure differing across the three point. That is, the measures taken at time 1 served as the baseline measure of writers' self-efficacy while those at time 2 focused on the specific writing task in this dissertation study and aimed at examining effects of planning activity on self-efficacy. The self-efficacy ratings at time 3 pertained to a future similar writing task, and were gathered with the goal of examining the effects of the interventions on student self-efficacy for argumentative writing more generally.

The self-efficacy instrument consisted of 22 items measuring three aspects of self-efficacy relevant to this study (see Table 1 below): argumentation (measuring the elements that were used in the rubric to score students' writing quality), audience awareness, and self-regulation. Each item was rated on a 100-point scale. The six items of self-regulation self-efficacy (e.g. "I can think of my writing goals before I write") was derived from Bruning et al' s (2013) writing self-efficacy scale (SEWS) and had been tested in a pilot study (Wang, 2014) showing reliabilities of $\alpha = .81$ at the beginning, $\alpha = .89$ after the pre-writing activity and $\alpha = .90$ after the writing task. Argumentation and audience awareness self-efficacy items were developed specifically for this dissertation study. In the pilot study (Wang, 2014), self-efficacy of argumentation was measured by five items (e.g. "I can provide convincing reasons to my propositions."). Reliabilities were $\alpha= .89$, $\alpha = .93$, $\alpha =. 92$, respectively at three time points in the pilot study. Based on the pilot results, five additional items each measuring one of the elements were added to strengthen the self-efficacy instrument, resulting in ten items assessing self-efficacy of argumentation. The six items that explicitly measured writers' self-efficacy of addressing audience (e.g. "Adapt my arguments to my audience") were newly created for the

dissertation study. *The validity and reliability indices of this instrument were reported in Chapter 4.*

Table 1.
Self-efficacy of five-element argumentation and audience awareness

For this writing task, I believe I can,
Argumentation
Make a clear standpoint(s).
State my opinion/position clearly.
Provide convincing reason(s) for my standpoint(s).
Provide convincing reason(s) for my position.
Think of counterarguments.
Think of how my arguments might be attacked.
Think of the possible opposing opinion(s).
Think of other positions different from my own.
Provide appropriate rebuttal(s) to the opposing opinion(s).
Defend my position against other positions/attacks.
Audience awareness
Adapt my arguments to my audience.
Keep my audience in mind.
Orient my arguments toward my audience.
Select the words that suit my audience.
Anticipate and answer my audience's questions.
Self-regulation
Focus on my writing for at least one hour.
Avoid distractions while I write.
Start the writing task quickly.
Control my frustration when I write.
Think of my writing goals before I write.

Audience awareness. The question "When did you think about your audience during this writing task?" (a. not at all; b. during planning; c. during drafting; d. during revising;) were posed to students at end of the experiment. This aligned with the timing issue of attention to audience that the author aimed to explore in the current study. If their answers were one of the options *b*-*e*, they also received two follow-up questions to describe: 1) who their audience was, and 2) what strategies they used to address their audience. If they chose answer *a*, however, they were asked to explain why they did not think about audience for their writing (See Appendix A). These questions were designed to provide extra evidence to the mechanism of audience awareness in writing from writers' perspective.

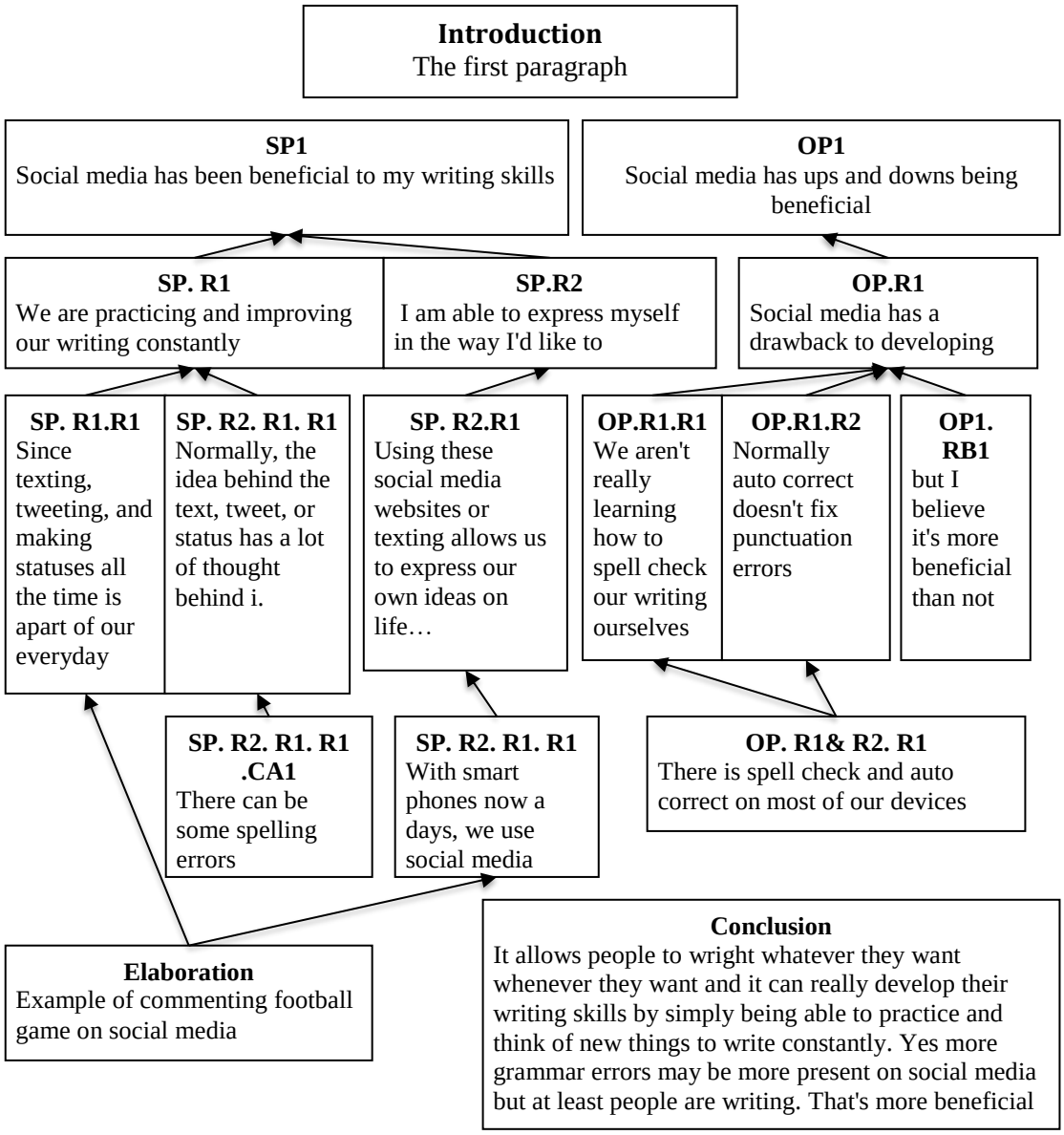
Cognitive load measure. To test the theoretical assumption that attending to audience without interaction may increase students' cognitive load compared to interactive audience, participants were asked to rate their cognitive load (their mental effort) with respect to three dimensions of the writing task at the point of their finishing it (e.g., after revision). These dimensions were: 1) thinking of addressing audience, 2) thinking of just addressing your own opinions on the topic, and 3) thinking of just addressing opposing-side opinions (i.e. opposing opinions, counterarguments, rebuttals). The measure was previously used by Deleeuw and Mayer (2008) as well as by Kalyuga, Chandler and Sweller (1999) to provide indices of the cognitive load of specific tasks. Ratings on this measures range from 1 (extremely low mental effort) to 9 (extremely high mental effort); students rated each of these three aspects with respect to their presence during planning, drafting, and revision stages, respectively. Assuming the same intrinsic cognitive load across three conditions (due to the same task demand) but different writing

activities during the three different stages of writing task, these measures were seen as reflecting writers' germane cognitive load (i.e. cognitive resources allocated to essential parts of the writing) during different stages of the writing task. Thus, using this measure was judged to provide information about how students allocated their cognitive resources in different stages of writing while receiving different instructional activities, thus offering empirical evidence for the theoretical assumption about the role of audience in writing and how writers approach it during different stages of writing.

Rating of Prior experience. Students were asked to rate their prior experience with argumentative writing (similar to the writing task in this study) on a 0-4 scale ranging from "None" to "A lot". The average experience was 3.3 (*SD*= 1), indicating that this group of participants had a moderate amount of prior experience in argumentative writing.

Scoring system for argumentation quality. The final revised version of each student's writing sample was scored for argumentation quality. The rubric for scoring the argumentative structure was based on the scoring system utilized by Fretti et al. (2000, 2009), which was developed based on features of van Eemeren et al.'s (2002) pragma-dialectical theory of argumentation. This scoring system was designed to help raters identify the functional elements of an argument as well as the relationships among these elements (i.e. the structure of these elements) and to allow a better assessment of the strength of the argumentations in students' writing (Chase, 2006). Figure 1 provides an example of an argumentation diagram, which is seen as useful for showing relationships among elements of argumentative structure (van Eemeren, Grootendorst & Henkemans, 2002).

Figure 1. Scoring a sample argumentative piece
SP: standpoint; R: reason, OP: opposing point; RB: rebuttal



Among its functional elements, the scoring system not only identifies the standpoints and the reasons that support the standpoints, but also distinguishes among the reasons that directly provide support to the main standpoints (superordinate elements) and the reasons (subordinate elements) providing support to their upper level reasons. As mentioned in the literature review, this approach allows the resulting scores to show the

quality of the totality of students' argumentation (van Eemeren, Grootendorst, & Henkemans, 1996).

As in the aforementioned studies, each writing sample was broken into idea units and then coded into different categories based on their functions in the argumentation. The steps were as follows: 1) identify the standpoint or the opinion about the topic; 2) identify the reasons that support the standpoint. Among these reasons, distinguish between a) the Level 1 reasons that directly support the standpoint, and b) the subordinate reasons that provide support to Level 1 reasons; 3) identify opposing view(s) (other opinions that the writer disagrees with); 4) identify the reasons behind the opposing view(s). Similarly, the reasons for the opposing view were also further divided into a) Level 1 reasons as direct support of the opposing view and b) subordinate reasons to the Level 1 reasons; 5) counterarguments (i.e., potential criticism to the standpoint or reasons supporting the standpoint) ; 6) rebuttals of the opposing view including the reasons for the rebuttals, if there was any; 7) elaboration; 8) functional repetition as repeated previous statements but necessary for the argumentation; and 9) the nonfunctional elements irrelevant to the topic. In addition, an introduction giving a background description of the issue and briefly introducing the argument that followed and a conclusion summarizing the student's main points were also included but not used in further analysis (see Appendix B for a detailed description of these elements). The counts of these elements (see Figure 1) then were used as outcome measures of the quality of students' argumentative writing.

The author and another graduate student serving as a second rater independently coded 54 out of 138 writing samples (about 39% of the samples) to determine inter-rater

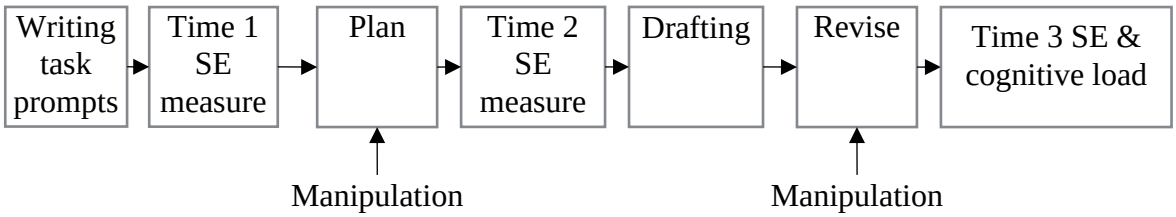
reliability/agreement. Before scoring, the second rater received training by first reading the scoring guide (Appendix B) and then practicing by scoring three essays. The two raters then discussed their scoring and differences in the practice essays. After training, the two raters each completed their scoring of the 54 samples independently. Inter-rater agreement was calculated based on Song and Ferretti (2013)'s formula: 1) differences within 1 count was considered as agreement, and 2) inter-rater agreement = agreement/agreement + disagreement. The resulting levels of agreement were: Standpoints (SP) = 98%; Level 1 reasons to SP = 83%; Below level 1 reasons to SP= 70%; Opposing points (OP) = 98%; Level 1 reasons to OP = 91%; Below level 1 reasons to OP = 93%; Counterargument = 96%; Rebuttals = 89%; Elaboration = 69%; Functional repetition = 91%; and Nonfunctional elements = 87%. As seen, the inter-rater agreement for Elaboration and Below level 1 reasons to SP was relatively low, which was probably due to that it was relatively difficult to separate it from supporting reasons. Then the two raters discussed and resolved the scoring differences.

Procedure

The present experiment was conducted in a computer lab and all materials including the writing task and measures were distributed online using *Qualtrics*. Multiple lab sessions were set up and students chose to participate in one of these sessions during recruitment. After student sign up, the researcher decided which session would be assigned to one of the three conditions: imagined audience, interactive audience during planning, and interactive audience during revision, to make sure the three conditions had approximately equal number of participants. Because interactive-audience-during-planning and interactive-audience-during-revision conditions both involved pair-up

activities (each participant discussed the writing with her/his partner), to make sure there were enough participants for these two conditions, those sessions with more students signing up were assigned to one of these conditions. For interactive-audience-during-planning and interactive-audience-during-revision conditions, when participants arrived at the lab, each randomly picked an index card with a number on it. The two participants with the same index card number were paired up to do the discussion activity. Finally, the sample sizes were 44 for imagined-audience condition, 46 for planning and 48 for revision condition. Figure 2 outlines the overall procedure and activities at each phase of the procedure.

Figure 2. Sequence of activities in the experiment



Before the intervention began, the researcher explained the experimental procedure to all participants. During the intervention, students first read the writing task instruction that asked students to write an argumentative essay on the topic of "the influences of social media on students' writing". The author chose this topic to reduce the influence of topic knowledge on the quality of students' writing (Benton, Corkill, Sharp, Downey & Khramtsova, 1995) and because it was very likely that all students were familiar with social media. The topic for the writing was introduced for all participants by the following paragraph.

> *Social media (e.g. Facebook, Twitter, texting, etc.) have become an integral part of our life today. They have changed our way of communication, and affected the*

> *way we write. Some people believe that social media have had positive influences on writing, whereas others think that they have negatively affected writing.*

This introduction was followed by the prompts for the writing task itself, which varied by condition. For the *imagined audience condition,* the prompt was*:*

> *What do you think? Do social media have a good, bad, or no impact on students' writing? Please write an argumentative essay to state your opinion on this issue and your audience are* ***your peers who are participating in this study****.*

For *the two interactive conditions*, the prompt was:

> *What do you think? Do social media have good, bad, or no impact on students' writing? Please write an argumentative essay to state your opinion on this issue and your audience is* ***your partner.***

Finally, students were presented with a general guideline for their argumentative writing that followed scoring system to be used for scoring the students' final writing. It read as follows:

> *Your writing will NOT be graded based on grammar and spelling (please do pay attention to them, however!), but will be graded on the basic elements of a good argumentative paper:*
>
> - *Taking a clear standpoint (your opinion/position on the topic)*
> - *Stating multiple reasons to support the standpoint*
> - *Making counterarguments (potential criticism/flaws of your standpoints or to the reasons of your standpoint)*
> - *Addressing the opposing opinions (other opinion(s) different from yours)*
> - *Providing Rebuttals to the opposing opinions or counterarguments (defending your position against other different positions or criticism of your position).*

Participants next were asked to rate their self-efficacy for the writing task. After the rating, all students were instructed to engage in planning and notetaking for 10 minutes. To help students focus on the essential components of argumentative writing, each student had a guidance sheet describing the important elements of argumentative writing (as described above). Students in interactive-audience-during- planning condition

took turns discussing each other's writing ideas, while students in the other two conditions planned on their own.

After the planning activity, students were asked to rate their self-efficacy for the writing task again. Then, they proceeded to write their essays. All students had 30 minutes to write the essay, followed by a 15-minute period in which they could revise their draft. The argumentation guidance sheet, the same used during planning, provided again to help them focus their revision on the five essential components of argumentation instead of on issues such as grammar or spellings. During this period, students in the Students in interactive-audience-during- revision condition reviewed their partner's essays and gave them feedback, while students in the other two conditions revised on their own.

Finally, students were asked to rate their self-efficacy for a future similar writing task. They then were asked a series of questions relating to audience: 1) when they had the audience in mind during the three stages of writing; (2) who their audience was; and (3) how, if at all, they adapted their writing to the audience. They then responded to the set of questions about cognition load, described earlier. Finally, participants were asked to provide demographic information including gender, age and native language status, their prior experience of argumentative, and grades received on prior writing assignments (see Table 2 below for a summary of key features in three conditions across three stages).

Table 2.
Key features of three conditions across three stages

	Imagined Audience (A-Img)	Interactive Audience during planning (A-P)	Interactive Audience during revision (A-R):
Intro	• Writing prompts • Self-efficacy measure of **the specific writing task**	• Writing prompts • Self-efficacy measure of **the specific writing task**	• Writing prompts • Self-efficacy measure of **the specific writing task**
Planning stage	• Plan individually (10 min)	• Plan and discuss in pairs (serve as each other's audience) (10 min)	• Plan individually (10 min)
	• Self-efficacy measure of **the specific writing task** again	• Self-efficacy measure of **the specific writing task** again	• Self-efficacy measure of **the specific writing task** again
Writing stage	• Writing on their own (30 min)	• Writing on their own (30 min)	• Writing on their own (30 min)
Revising stage	• Revise their own writing (15 min)	• Revise their own writing (15 min)	• Provide feedback for partner's writing (as each other's audience), then revise their own writing (15 min)
	• Self-efficacy measure of **a similar writing task in the future** and cognitive load rating	• Self-efficacy measure of **a similar writing task in the future** and cognitive load rating	• Self-efficacy measure of **a similar writing task in the future** and cognitive load rating

Chapter 4 Results

Evaluation of the Self-Efficacy Measure

Although the primary focus of this dissertation study was to examine the effects of the three experimental conditions, validity (factor analysis) and reliability (Cronbach's α) analyses of the self-efficacy measure are reported first since the scales comprising the self-efficacy measure were adapted and/or created specifically for the present study. These analyses began with the performing of exploratory factor analyses on the self-efficacy measure at each of the three time points. Although these 22 items were judged likely to load on three conceptually distinct factors *argumentation*, *audience awareness*, and *self-regulation*, the factors analyses at both time 1 (before planning) and time 2 (after planning & before writing) revealed only a single factor with loadings ranging from .62 to .85. At time 2, the same overall one-factor structure again appeared but the items that measured self-efficacy of self-regulation now had small to moderate loadings on their theoretical factor, although they still had high loadings for the rest of the items. At time 3 (after revision), however, these items showed higher loadings on their conceptual factor self-regulation efficacy, which seemed to indicate that participants in the present study could not distinguish the three aspects of self-efficacy at the beginning but after the experiment had started to separate self-regulation efficacy from the other two aspects.

Although the exploratory factor analysis suggested one single factor, the three separate theoretical factors still were used in the following analysis because the experimental manipulations was expected to have effects on different aspects of self-efficacy. Cronbach's α reliabilities for self-efficacy of argumentation, audience awareness and self-regulation were .94, .91 and .89 at time 1, .95, .94 and .92 at time 2, and .96, .96

and .92 at time 3. Mean scores then were computed to represent the three aspects of self-efficacy in the following analysis.

Tests of Hypotheses

Writing Performance as a Function of Audience Condition

The first hypothesis was that students who interacted with an actual audience (whether during planning or during revision) would have better performance of argumentative writing (more balanced arguments) than those with an imagined audience, and the writing performance of those who interacted with audience during revision would be better than those who interacted during planning.

Prior to the test of the hypothesis, a preliminary descriptive analysis of the writing scores on the final draft (after revision) was conducted to inform the correct choice of statistical method. Table 3 shows the means and standard deviations of argumentative writing performance indicators. On average students provided 1.05 standpoints (*SD*= 0.3) with 2.49 level 1 supporting reasons (*SD*= 1.15) and 4.08 below level 1 reasons (*SD*= 3.15), fewer opposing views (*M*=0.68, *SD*= 0.55) and corresponding supporting reasons (*M*= 0.95, *SD*= 1.02). Less counterarguments (*M*= 0.49, *SD*= 0.79) were produced by this group of participants, but with higher numbers of rebuttal (*M*= 1.78, *SD*= 1.86); in addition, argumentative components that served "both sides" included elaboration (*M*= 3.25, *SD*= 2.11), functional repetition (*M*= 1.86, *SD*= 1.64) and nonfunctional elements (*M*= 0.95, *SD*= 1.43). Overall, students provided more argumentative elements for their own viewpoints.

Table 3
Descriptive statistics of argumentative elements

			K-S test statistic	
			Null hypothesis	
	Mean	*SD*	Normal	Poisson
SP	1.05	.30	.51**	3.94**
SP level 1 reason	2.49	1.15	.21**	1.45*
SP below level 1 reason	4.08	3.15	.12**	1.42*
OP	.68	.55	.36**	1.69**
OP level 1 reason	.95	1.02	.27**	.69
OP below level 1 reason	.28	.66	.47**	.59
Counterargument	.49	.79	.39**	.48
Rebuttal	1.78	1.86	.20**	1.68**
Elaboration	3.25	2.11	.16**	.59
Functional repetition	1.86	1.64	.19**	1.15
Nonfunctional	.95	1.43	.32**	2.18**

Note: **significant different from the null hypothesis that the variable followed either a normal or Poisson distribution. SP: standpoint; OP: opposing point.

With the counts of these argumentative elements as outcome variables, linear regression was judged likely not to be appropriate in this situation. As can be inferred from Table 3, the distributions of argument elements were skewed because some elements had many zero counts, e.g. opposing-side arguments (OP, supporting reasons for OP and counterargument). Such count data is said to usually follow a Poisson distribution. Poisson regression uses a natural log link to transform the outcome variable Y (follows a Poisson distribution) into a linear system (Bilder & Loughin, 2015):

$$\log(Y) = \beta_0 + \beta_1 x \text{ or } Y = e^{(\beta 0 + \beta 1 x)}$$

This transformation guarantees that Y is always greater than 0 since Y is a count response. For example, in Nussbaum and Schraw (2007)'s experimental study of improving argumentative writing performance, counts of different elements were indicators of writing performance (outcomes) and Poisson regression analyses were used to examine the experimental effects on writing performance.

Before the regression analysis, Kolmogorov-Smirnov tests on all the scoring elements were run to examine whether these elements actually follow Poisson distribution (Table 3). The results showed that the distributions of argument elements all did in fact differ significantly from the normal distribution. For some of the argumentative elements, their observed distributions did not differ from the Poisson distribution, that is to say, they follow Poisson distribution. Their means and corresponding variance were also close, which is a feature of Poisson distribution. Therefore, a Poisson distribution were performed to examine experimental effects on *SP level 1 reasons, OP level 1 reasons, OP below level 1 reasons, and Counterarguments*. While for *SP below level 1 reasons* and *rebuttals*, Negative binomial regressions were used to deal with the over-dispersion issue (a dispersion parameter was added to adjust this issue), i.e. where variances were larger than means (Bilder & Loughin, 2015).

Also, not all argumentative elements were included in the analysis. First, since the current study only assumed the experiment had effects on essential parts of the argumentative structure (SP, OP and their reasons as well as counterarguments and rebuttals), other elements (elaboration, functional repetition and nonfunctional element) were excluded from the regression analysis. Also, writer's standpoint (SP) and opposing views (OP) had very small variations due to that the majority of students provided one standpoints (92.8%), and either have none (36.2%) or at least one opposing views (59.4%), SP and OP were also excluded.

The descriptive analyses shown in Table 4 seem to indicate that students in interactive-audience-during-revision condition produced more *SP level 1 reasons, OP level 1 reasons* and *OP below level 1 reasons*, while the interactive-audience-during-

planning condition produced more *SP level 1 reasons* and *counterarguments* and the imagined-audience condition had the most *rebuttal* and statistical analyses were conducted to examine the significance of these differences.

Table 4
Means and SDs of the number of argumentative elements by condition

	A-Img		A-P		A-R	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
SP level 1 reason	2.36	.89	2.50	1.26	2.58	1.27
SP below level 1 reason	3.97	2.65	4.28	3.59	3.98	3.18
OP level 1 reason	.95	.96	.80	.96	1.08	1.13
OP below level 1 reason	.18	.54	.20	.58	.46	.80
Counterargument	.50	.67	.52	.94	.46	.74
Rebuttal	2.11	2.13	1.50	1.66	1.75	1.78

Poisson regressions first were conducted on each of the argument elements with students' prior experience and time 2 self-efficacy as the covariates (control variables). Table 5 shows that after controlling for prior argumentative writing experience and time 2 self-efficacy, those students interacting with audience during planning (A-P condition, β= -.84, *p*= .03) and writing for an imagined-audience (A-img condition, β= -.96, *p*= .02) had a significantly lower percentage of *below level 1 reasons of opposing views* than those who interacted with audience during revision (A-R condition). Altogether, students in the A-R condition produced 56.8% more of *below level 1 reasons of opposing views* compared to those in A-P condition, and 61.7% more compared to those in A-Img condition. On the other hand, neither students' prior experience nor time 2 self-efficacy seemed to predict their writing performance, except that self-efficacy for argumentation negatively predicted the number of counterarguments (β= -.05, *p*= .02), with a 5% decrease in the number of counterarguments occurring even as self-efficacy of argumentation increased one point.

Table 5
Poisson regression parameters (β)

	Condition term			Control variables			
	A-Img	A-P	A-R (intercept)	Prior exp	T2 SE for arguments	T2 SE for audience	T2 SE for SR
SP L1 R	-.11	-.05	.96**	.07	-.01	.01	.00
SP below L1 R	.00	.10	1.44**	.05	-.01	.00	.01
OP L1 R	-.11	-.36	-.37	.04	.02	.00	-.02
OP below L1 R	-.96*	-.84*	.37	-.08	-.01	.01	-.01
CA	.01	.16	-.00	-.21	-.05*	.02	.03*
Rebuttal	.22	-.18	-.16	-.06	.02	.00	.00

Note: The interpretation of parameter is percentage change= $100(e^{(\beta_1 x)} -1)$%; L1 R: level 1 reason, CA: counterargument

Writing Self-efficacy as a Function of Audience Condition

The second objective related to the experimental effects of interactive audience on students' self-efficacy for argumentation, audience awareness and self-regulation. Table 6 presents a descriptive analysis of student self-efficacy at the three stages of the writing task. There was a general increase in self-efficacy in all three conditions as the writing task proceeded. Because there were experimental manipulations at both planning and revision stage, the analyses of experimental effects on self-efficacy were performed for after-planning and after-revision self-efficacy separately.

Table 6
Means and standard deviations of student self-efficacy at different stages of the writing task.

	Before planning	After planning	After revision
	M (SD)	M (SD)	M (SD)
Making arguments	71.5 (14.9)	76.0 (14.4)	80.8 (14.4)
Audience awareness	70.5 (15.1)	75.1 (16.0)	79.5 (16.0)
Self-regulation	69.7 (17.2)	75.5 (17.4)	81.1 (17.2)

To rule out interactions between prior self-efficacy and experimental condition, two steps of ANCOVA tests were performed on each of the three self-efficacy aspects. Step 1 analyses included the interaction terms. Due to nonsignificance, the interaction

terms were excluded in step 2. Both Table 7 and Table 8 therefore show only the step 2 results without interaction terms.

Table 7.
Experimental effects on self-efficacy after planning.

	MSQ	*df*	*F*	*p.*	Partial η^2
DV: after-planning SE for audience awareness					
Intercept	712.90	1	8.89	.00	.06
Condition	107.05	2	1.34	.27	.02
Time 1 SE for audience awareness	20809.71	1	259.46	.00**	.66
priorExp	99.80	1	1.24	.27	.01
Error	80.20	133			.06
DV: after-planning for making arguments					
Intercept	1148.23	1	20	.00	.13
Condition	65.73	2	1	.33	.02
Time 1 SE for making arguments	17997.93	1	308	.00**	.70
priorExp	153.14	1	3	.11	.02
Error	58.46	133			
DV: after-planning for self-regulation					
Intercept	924.47	1	11.36	.00	.08
Condition	18.05	2	0.22	.80	.00
Time 1 SE for self-regulation	26872.52	1	330.20	.00**	.71
priorExp	176.65	1	2.17	.14	.02
Error	81.38	133			

As Table 7 shows, when prior argumentative writing experience and before-planning self-efficacy are controlled, there are no significant differences after the planning activity among the three conditions in any of the three self-efficacy dimensions. That is to say, after the planning activity, students who interacted with their audience (A-P condition) did not differ from students in other two conditions (who did the planning activity alone) with respect to their self-efficacy.

Table 8.
Experimental effects on self-efficacy after revision.

	MSQ	*df*	*F*	*p.*	Partial η^2
DV: after-revision SE for audience awareness					
Intercept	926.86	1	11.72	.00	.08
condition	489.23	2	6.18	.00*	.09
Time 1 SE for audience awareness	45.18	1	.57	.45	.00
Time 2 SE for audience awareness	7049.66	1	89.12	.00**	.40
priorExp	944.64	1	11.94	.00**	.08
Error	79.11	132			
DV: after-revision for making arguments					
Intercept	968.60	1	14.04	.00	.10
condition	171.79	2	2.49	.09	.04
Time 1 SE for making arguments	154.74	1	2.24	.14	.02
Time 2 SE for making arguments	5632.76	1	81.64	.00**	.38
priorExp	1209.75	1	17.53	.00**	.12
Error	68.99	132			
DV: after-revision for self-regulation					
Intercept	912.26	1	12.33	.00	.09
condition	27.65	2	.37	.69	.01
Time 1 SE for self-regulation	22.93	1	.31	.58	.00
Time 2 SE for self-regulation	7913.22	1	106.93	.00**	.45
priorExp	554.54	1	7.49	.01**	.05
Error	74.00	132			

As shown in Table 8, after revision and controlling for prior argumentative writing experience and after-planning self-efficacy, there were significant differences in self-efficacy of audience awareness among the three conditions (F= 6.18, $p < .01$, η^2= .09). Post-hoc difference tests with Bonferroni adjustment showed that students in interactive-audience-during-revision (A-R condition) had significantly higher self-efficacy of audience awareness (M= 83.06, SE= 1.29) than those in interactive-audience-during-planning (A-P, M= 78.44, SE= 1.32) and imagined-audience (A-Img) condition (M= 76.78, SE= 1.35). Although students in A-P condition had higher self-efficacy of audience awareness than those in the A-Img condition, the difference was not significant.

In addition, no significant differences were found among these three conditions for self-efficacy of making arguments and self-regulation. In addition, overall time 1 self-efficacy predicted time 2 after planning self-efficacy; Time 2 self-efficacy predicted time 3 after revision self-efficacy, but time 1 self-efficacy did not.

Cognitive Load at Different Stages

Because researchers speculated that addressing audience may add cognitive load to already cognitive demanding writing (Cheery & Witte, 1998; Elbow, 1987), interacting with audience may have the benefit of interacting with audience was that it may lower the cognitive load of thinking about specific argumentative elements for students. As a consequence, more cognitive resources can be assigned to thinking about audience-related strategies and subsequently produce better writing performance. Students' self-ratings of mental effort after the experiment did not support this assumption, however. The only significant difference of the amount of mental effort spent on audience appeared during planning (F= 3.76, p= .03), but not during the other two stages of the writing task (see Table 9). During planning, the results indicated that students interacting with audience (A-P condition) reported giving significantly more mental effort to audience (M= 6.30, SD= 1.90) than those in interactive-audience-during-revision (A-R condition, M= 5.26, SD= 1.87), but not than those in imagined-audience (A-Img, M= 5.53, SD= 1.96) condition. Participants in all conditions reported putting more mental effort to the goal addressing audience than during planning, but there were no significant differences among the three conditions. During revision, those students who interacted with their audience (A-R) reported giving more, but not significantly more, mental effort to thinking about their audience than those in the other two conditions.

Table 9.
Means and standard deviations of mental effort during planning, drafting and revision

			Audience		"My-side" opinion		Opposing-side opinion	
	Condition	N	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
During planning	A-Img	40	5.53[a,b]	1.96	6.84	1.58	5.65	2.12
	A-P	46	6.30[b]	1.90	7.17	1.39	6.16	1.69
	A-R	47	5.26[a]	1.87	6.79	1.43	6.25	1.53
During drafting	A-Img	41	6.24	2.06	7.07	1.42	5.89[a]	1.97
	A-P	46	6.78	1.70	7.67	1.19	6.97[b]	1.31
	A-R	47	6.64	1.61	7.27	1.22	6.68[a,b]	1.47
During revision	A-Img	41	5.63	2.38	6.55[a,b]	1.81	5.70	2.20
	A-P	46	5.98	2.34	7.26[b]	1.36	6.78	1.68
	A-R	47	6.13	2.02	6.19[a]	1.83	6.30	1.76

Note: letter superscriptions were only provided for means with significant differences, indicated by different superscriptions.

Table 10.
ANOVA analysis of mental effort during planning, drafting and revision

			MSQ	*df*	*F*	*p.*
Audience	During planning	Between	13.66	2	3.76	.03*
		Within	3.64	130		
	During drafting	Between	3.33	2	1.04	.36
		Within	3.19	131		
	During revision	Between	2.76	2	.55	.58
		Within	5.05	131		
"My-side" opinion	During planning	Between	2.00	2	.93	.40
		Within	2.15	135		
	During drafting	Between	4.30	2	2.64	.08
		Within	1.63	135		
	During revision	Between	13.95	2	4.94	.01**
		Within	2.82	135		
Opposing -side opinion	During planning	Between	3.91	2	1.21	.30
		Within	3.23	106		
	During drafting	Between	10.97	2	4.19	.02*
		Within	2.62	106		
	During revision	Between	10.10	2	2.81	.06
		Within	3.60	106		

In terms of mental effort given to "My-side" opinions, there was a significant difference during revision (F= 4.94, p= .01, see Table 10) in that students in A-P

condition (*M*= 7.26, *SD*= 1.36) invested significantly more mental effort than those in A-R condition (*M*= 6.19, *SD*= 1.83) but not those in A-Img condition (*M*= 6.55, *SD*= 1.81). With respect to opposing-side opinions, a significant difference (*F*= 4.19, *p*= .02) appeared during the drafting stage between those in A-P condition (*M*= 6.97, *SD*= 1.31) and those in A-Img condition (*M*= 5.89, *SD*= 1.97).

Strategies of Addressing Audience

Participants' responses to the open-ended question about what strategies the participants used to address audience were coded to provide additional evidence with respect to how they adapted their writing to the designated audience. Nine people did not report their strategies and one explicitly stated s/he did not pay attention to audience. Among those who provided response to this question, the most frequently used strategy was *using personal experience or relatable examples* (*N*= 51), followed by *providing arguments for both/different sides and/or rebuttals* (*N*=34) and *adjusting their language/tone/style* (*N*= 30). Other less frequent strategies included *considering audience's prior knowledge and adjusting the details* (*N*= 10), *focusing on building their own viewpoints* (*N*=5) and *imagining audience as someone similar* (*N*=4). Also, three participants (all from interactive audience-planning condition) mentioned they did not need to adapt their writing to audience because their audience had the same viewpoints they on the topic.

The second most used audience strategy was one of the outcome variables of the current study, *providing arguments for both/different sides and/or rebuttals*. The frequency by condition analysis showed that it was used mostly among those in A-P condition (*N*=23), followed by those in A-R (*N*= 8) and A-Img condition (*N*=5). On the

other hand, the Poisson regression analyses did not show those in A-P produced significantly more balanced arguments whereas those interacted during revision did, in terms of more reasons to opposing viewpoints. This seemed to suggest that for those in A-P condition their awareness of producing balanced arguments did not translate into the better quality of their writing.

In sum, the results showed that students interacting with audience during revision produced significantly better argumentative essays in terms of one aspect (providing more *below level 1 reasons of the opposing views*) and had significantly *higher self-efficacy for addressing their audience* than students in the other two conditions. Further, students who interacted with audience during revision reported significantly lower cognitive load tied to *audience during planning* as well as *to "My-side" opinions during drafting*, but higher but nonsignificant cognitive load tied to *audience during revision*. As for students' strategies of addressing audience, the targeted outcome *providing arguments for both/different sides and/or rebuttals* was the second most frequently used strategy. It would seem that investigation of participants' cognitive load during different stages of writing and strategies of addressing audience could possibly aide in understanding of the effects of interacting with audience, which is discussed in the final chapter.

Chapter 5 Discussion

Discussion of the Objectives

The general issue addressed in this research is that college students often have difficulties in producing well-rounded argumentative writing (Perskey, Daane, & Jin, 2003). The overall purpose of the current study was to examine the effects of different audience strategies on improving this group of college students' argumentative writing performance via raising their audience awareness. The theory behind the approach of the current study is that argumentative writing is the discussion between the writer and the audience therefore audience awareness is essential in improving quality of argumentative writing (Johnson, 2002; van Eemeren et al., 2002). Based on this theoretical understanding of argumentative writing, the paucity of opposing-side argumentative elements may be indicative of lack of audience awareness (Felton & Kuhn, 2001; Feretti, Lewis, Andrews-Weckerly, 2009) because of failing to take in audience's perspectives (Traxler & Gernsbacher, 1993; Sato & Matsushima, 2006). Therefore, the criteria used to assess argumentative writing performance in the current study gave equal emphasis on both "My-side" and opposing-side viewpoints. To achieve this purpose, the experiment prompted students to attend to audience in three different ways: 1) assigning audience in the writing instruction (A-Img condition); 2) assigning audience and provide the opportunity to interact with audience during planning activity (A-P condition); and 3) assigning audience and provide the opportunity to interact with audience during revision (A-R condition). The intension of this design was to examine two aspects of audience-related interventions: the effects of interacting with audience and the timing of this interaction on raising audience awareness and thus writing performance.

Two main research questions were examined in this dissertation. The first question was whether students who interacted with audience, during planning or revision, would produce the better argumentative writing than those in imagined-audience (A-Img) condition, and those interacted with audience during revision (A-R) condition would write better than those interacted with audience during planning (A-P). The result was consistent with this hypothesis on one dimension of the writing performance, in that students in A-R condition produced more of *below level 1 reasons of the opposing views* than those in the other two conditions. To some extent consistent with previous studies (Holliway & McCutchen, 2004; Roen and Willey, 1988; Sato & Matsushima, 2006; Traxler & Gernsbacher, 1992), interacting with audience overall improved the quality of argumentative writing although the effect was small in the sense that it only had statistically significant impact on one dimension of the writing performance.

One of the assumptions of the study design was that argumentative writing performance might be improved by raising audience awareness, thus their connections were further examined to help explain the small effects of the experiment. Students' reports on their strategies to address audience showed that taking in consideration of opposing viewpoints was not the most frequently used strategies, suggesting that students may not have the concept of argumentative writing as a discussion or dialogue between two parities that aimed at resolving a difference of opinions (Nussbaum, 2008; van Eemeren, et al, 2002). Even the writing instruction explicitly prompted students to produce balanced arguments, they may still consider opposing-side viewpoints as detrimental to the credibility of their own viewpoints, as some literature has suggested (Feretti, Lewis, & Andrews-Weckerly, 2009). The result that students' self-efficacy of

making arguments had negative association with the number of produced counterarguments may be supportive of this explanation. Instead, other strategies such as *using relatable examples* were used more to address audience. Another explanation was that audience's position might also influence the writer's strategy use especially for those who actually had discussions with their audiences. As some students indicated, their audience had the same viewpoints as they did; therefore, they didn't need to use audience-adaptive strategies. In the future studies, it will be valuable to explicitly explore the influence of audience's position on writers' use of strategies and producing more balanced arguments. To do this, group members' opinions on the writing topic need to be taken into consideration in the analysis of impact on writing performance.

The second question pertained to potential self-efficacy differences after experimental manipulations among the three conditions. Students in A-P and A-R conditions interacted with their audiences during planning and revision, respectively, and self-efficacy differences were therefore expected at these two stages. Consistent with the initial hypothesis, the results showed significantly higher self-efficacy of audience awareness for students in the A-R condition after revision, suggesting that interacting with audience after revision was effective on students' self-efficacy of addressing audience. On the other hand, when measured after the planning activity, those interacting with audience during planning did not show a significant difference from those in either of the other two conditions on any of the three self-efficacy dimensions, suggesting that interacting with audience during planning did not positively affect students' self-efficacy. Hence, the examination of experimental effect on self-efficacy revealed that interacting with audience during revision was better than during planning in terms of raising

audience awareness. This was consistent with previous studies (Holliway and McCutchen, 2004; Moore & MacArthur, 2012) that practicing as audience to give feedback, as what students did in A-R condition, was more effective in raising students' audience awareness in argumentative writing that likely to transfer into their future writing. Moreover, this enhanced audience awareness was associated with these students producing slightly better argumentative writing as shown by the evidence of the first research question, which was consistent with previous studies that students with high audience awareness provided more argumentative elements that addressed opposing-side viewpoints (e.g. Midgette, Haria & MacArthur, 2008).

In addition to student's self-report audience strategies, the investigation of how students distributed their cognitive resources to different aspects during writing also suggests how audience awareness might affect different writing subprocesses. Previously, researchers have speculated that audience prompts had no effect on argumentative writing performance because the limited cognitive resources distributed to audience during drafting (Cherry & Witte, 1998; Elbow, 1987). The results did not support this speculation. Comparing across writing stages (planning, drafting and revising) within condition, there was a general trend that all three conditions invested more cognitive resources on audience during drafting than during the other two subprocesses, which was also contradictive to Roen and Willey's study (1988) that college student writers chose to attend to audience during revision instead of during planning and drafting. Looking at planning and revision stages and comparing differences across three conditions, the conditions where students interacted with their audience, A-P and A-R, respectively, assigned more cognitive resources to audience than the A-Img condition that did not have

the opportunity to interact with audience (for those in A-P condition, it was significantly more). The problem hence may not be that students did not attend to audience but lacked of strategies to address audience properly or used strategies that did not result in balanced arguments. As mentioned, students' strategy use indicated that most students did not connect between addressing audience and arguing with different viewpoints.

With respect to students' cognitive resources distributed to "my-side" and opposing-side opinions, the results showed that students in A-P condition invested significantly more cognitive resources on both "my-side" (during revision) and opposing-side opinions (during drafting) than the other two conditions. However, this did not show in their actual writing performance. It was those students in A-R condition that produced slightly but statistically better performance than the other two conditions (at least on one dimension). Looking at their cognitive resources across three dimensions (audience, "my-side" opinion and opposing-side opinion) within each condition at different writing subprocesses may provide some explanations. A general trend although not statistically tested showed: students in both A-Img and A-P conditions assigned more cognitive resources on "my-side" opinion than those in A-R condition during the whole writing task, whereas students in A-R condition adjusted more cognitive resources to opposing-side opinion during revision, resulting in better writing performance than both of the other two conditions. In conclusion, these results may indicate that students in A-R condition lowered cognitive load in some aspects (e.g. significantly lower on audience during planning), or more accurately put, lowered cognitive load on aspects of writing that they may not need to focus on at that stage of writing. That is to say, it probably made students distribute their cognitive resources smarter such as focusing more on

audience and opposing-side opinions instead of on “my-side” opinions (as those in A-P condition) during revision when they actually received audience’s feedback on their strength of their arguments. This, along with raised audience awareness, may be the reason that interacting with audience during revision improved the quality of argumentative writing to some extent.

Summary and Limitations

Results of the present study suggest that interacting with audience can raise audience awareness and thus writing performance, but that timing of interaction may be crucial. Students may benefit most from the interaction during revision stage when they receive feedback from their audience while practice as audience to give feedback, comparing to no interacting or interacting during planning. The reason is probably that these students distributed their cognitive resources more reasonably across the whole writing process (during revision they distributed most resources on building opposing-side opinion) and had higher self-efficacy of addressing audience/ audience awareness. However, they may not explicitly connect addressing audience with the inclusion of well-supported opposing viewpoints even though they received the instruction to do so in the writing task instruction. Interacting with audience may have some effects on making the connections, but it may depend on both the timing of interaction and their audience’s standpoints on the topic that students may not include more viewpoints if their audiences are on the same side of the topic as them. The latter issue may confound the effects on writing performance and make those effects small or statistically unnoticeable.

Empirically, although the effects were small and limited to one dimension of writing performance, the current study nonetheless demonstrates that interaction with

audience on revising writing could be effective for college students' argumentative writing, even during a single short session of such writing tasks. If this kind of interaction were to be implemented in a real-world classroom over a period, it presumably would produce even greater impact on students' writing that could transfer to their future writing.

The current study, however, has several limitations that should be addressed in future research. For instance, the current study did not factor in students' standpoints on the topic during the group activities, which could be one of the possible reasons that confound the effects on writing performance. In addition, students' first draft of writing was not scored in this dissertation study. Comparing their first and final drafts may present a mapping between actual writing product and cognitive and motivational indicators such as cognitive load and self-efficacy, and provide a process of change in writing over the different stages. Most importantly, as past literature indicated (Felton & Kuhn, 2001; Feretti, Lewis, Andrews-Weckerly, 2009) balanced arguments may be cognitively challenging for college students even with interaction with audience to help them think of more argumentative elements, since most students did not connect audience strategies to inclusion of more opposing side of argumentative elements. This suggests future studies are needed to explore the possibility that interaction accompanied with strategy instructions may be even more effective on writing performance even for students in A-R condition. Previous studies (Song & Ferreti, 2013) showed that strategy instruction was effective in increasing the number of certain argumentative elements among college students. Whereas the current study suggests that by making the connection between audience awareness and strategies, it could not only improve their

writing quality but deep their understanding of the nature of argumentative writing as a dialogic discussion between writers and audience.

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Appendix A

Survey Questions

Self-efficacy (100-point scale, the order of items was randomized by Qualtrics)

Self-efficacy statement stem

(Time 1 & Time 2) For this argumentative writing, I believe I can,

(Time 3) For a similar argumentative writing in the future, I believe I can,

(Self-regulation)

6. Focus on my writing for at least one hour.

7. Avoid distractions while I write.

8. Start the writing task quickly.

9. Control my frustration when I write.

10. Think of my writing goals before I write.

11. Keep writing even when it's difficult.

(Argumentation)

12. Make a clear standpoint(s).

13. State my position clearly.

14. Provide convincing reason(s) for my standpoint(s).

15. Provide adequate evidence for my position.

16. Think of counterarguments.

17. Think of how my arguments might be attacked.

18. Think of the possible opposing opinion(s).

19. Think of other positions different from my own.

20. Provide appropriate rebuttal(s) to the opposing opinion(s).

21. Defend my position against other positions/attacks.

(Audience awareness)

22. Adapt my arguments to my audience.

23. Keep my audience in mind.

24. Orient my arguments toward my audience.

25. Select the words that suit my audience.

26. Anticipate my audience's questions.

27. Respond to my audience's questions.

Audience questions

1. Have you thought about your audience during this writing task? (a.not at all; b. only during planning; c. during planning and drafting; d. only during revising; e. during planning, drafting and revising)

If the answer is in b-e, then the two following questions were asked:

2. Who was your audience?

3. Please describe how did you adapt your writing to audience (i.e. your strategies).

If the answer is a, then the following question were asked:

5. The instruction explicitly instructed you to think about "your peers" as your audience.

Could you explain why you did not think about your audience during writing?

Cognitive load measure

Please rate your level of mental effort on this part of the writing task" ranging from 1(extremely low mental effort) to 9 (extremely high mental effort)

Guidance sheet

1. What's your standpoint?

2. What're your reasons to your standpoint?

3. What're the potential criticism/flaws to your standpoints or the reasons to your standpoint? (i.e. counterarguments)

4. What're the points that you can think about to rebut the counterarguments?

5. What's (are) the possible opposing opinion(s) (other opinion(s) that you disagree with)

6. What're the points that you can think about to rebut the opposing opinions?

Appendix B

The Scoring Guide of Argumentative Structure (adapted from Ferretti, et al., 2000; Ferretti, et. al., 2009; Chase, 2006; Nussbaum & Schraw, 2007)

The general steps of scoring the writing sample are:

1) divide paragraphs/sentences into meaning units

2) identify the relationships of these meaning units according to the following guide:

Standpoint

A Standpoint is the writer's opinion on the central issue of the topic. In an argumentative text, it can be explicitly or implicitly stated. Explicitly stated standpoint is not necessary to make a clear standpoint as long as the arguments are well structured around the unsaid claim (van Eemeren, Grootendorst & Henkemans, 2002).

For scoring students' essays, a standpoint is usually presented in the introduction or beginning part of the essay, and denoted as SP. However, two issues should be noted:

First, if the writer states the opinion followed with some statements in a single long sentence, those statement should be distinguished between a) rhetorical repetition of the same opinion, which is accounted as one single standpoint unit, and b) elaboration on the main standpoint, which should be scored as reason(s). For example:

(Example 1) A single standpoint unit: "*I believe social media has been beneficial to my writing skills"* (SP1, standpoint 1).

(Example 2) Elaborated with reason2: "*In my opinion, social media is detrimental to the writing of students (SP1) because it not only provides a tempting*

distraction from the schoolwork that the student should be working on (SP1.R1, the reason 1 for standpoint 1) , but it also influences the spelling and grammar of the writer (SP1.R2, the reason 2 for standpoint 1)".

Second, multiple standpoints are possible. Multiple standpoints are present when the student makes two or more clear claims that *independent of each other*. For example,

(Example 3) "*Social media can be saw one of two ways, a hindrance to our generations grammar, spelling, and professional addressing (SP1). While on the other hand it can be seen as a motivation factor and a way to get all individuals involved with writng skills (SP2). I find both of these ways to be true. I cannot fight with one side or the other, but I would like to fight for both sides*."

As seen, the above example includes two separate opinions about social media, and the writer explicitly claims to believe in both opinions; while in the above "elaborated with reason" example, the"not only…but also" statement just provides further explanations to the "In my opinion" statement.

Reasons

A reason is the justification to the standpoint. In identifying the reasons to the standpoints, it is worth noting that the links between reasons and standpoints can be in progressive (forward reasoning) or retrogressive (backward reasoning) form. These two forms are the same in terms of scoring, but distinguishing them helps graders parse the relationships of elements in the argumentations. In progressive form, *the standpoint is presented first*, then are the reasons, e.g. *Example 1* above. Whereas in retrogressive form, *the reasons are provided first*, then are the standpoint. For example,

(Example 4) "*Students in today's society constantly indulge in the pleasure of social media in several ifferent forms - email, text message, Facebook, Twitter, Instagram. Their constant indulgence has many educators worried about the affect of their student's participation on these social media sites on their school writing assignments (SP1. R1). While social medi does have several benefits, improving writing skills is certainly not one of them. (SP1)"*

In scoring students' essays, the relationships among the reasons are also an important part of argumentative structure. For a standpoint, reasons that support it can connect with each other in three ways: subordinative, parallel/coordinative arguments. Reasons that form a superordinate and subordinate relationship to defend a standpoint represent a series of reasons that each layer of the reasoning network serves to defend the preceding reason. As their relationships with the standpoint, the flow of such argumentative structure among reasons can be either progressive or retrogressive, too. The key to score a series of reasons as subordinative arguments is their causal links to one another. Otherwise, if a series of reasons are independent of each other, that is to say, they can stand alone to defend the standpoint, then they should be scored as *parallel/multiple reasons*. For example, the Example 2 is a progressive parallel argument. In this example, "*because it not only provides a tempting distraction from the schoolwork that the student should be working on"* and *"but it also influences the spelling and grammar of the writer*" are two independent arguments/reasons that defend the standpoint "social media is detrimental to the writing of students". Therefore, they were scored as multiple reasons (two units).

The following statements shows an example of retrogressive superordinate/subordinate argument:

(Example 5) "…*Because there are many more interesting things to look at on a social media site (*SP1. R1. R1. R1, the reason to the following sentence*)*, my motivation to work on my writing assignment is very often quickly dindling (SP1. R1. R1)."

In this example, "Because" (or other words that suggest causal link, e.g. Therefore) is hint to causal link between the two sentences and clearly indicates that the subordinate reason becomes before the superordinate reason, thus they are structured as retrogressive argument.

In Chase's scoring guide, another argumentative structure similar to multiple/parallel argument is mentioned: coordinative arguments, which is scored as **a single unit**. Coordinative arguments are present when two statements/reasons are too weak to defend the standpoint alone, and when any part of the two statements are undermined, the whole defend is weakened. However, it is difficult to distinguish coordinative and multiple arguments, and it depends on the graders' judgment to tell the differences. However, in ambiguous situation that the grader cannot determine whether a series of arguments should be coordinative or multiple, it is recommended to categorize as multiple arguments to make sure all the statements receive merits. This is called maximally argumentative analysis (van Eemeren, Grootendorst & Henkemans, 2002).

Elaboration

The elaborations of the reasons are detailed explanations that support and elaborate these reasons, which can involve examples, comparisons, statistics, or other techniques. For example,

(Example 6) "*…am able to express myself in the way I'd like to (SP. R2)… Using these social media websites or texting allows us to express our own ideas on life whether that be different political issues or things that our simply going on in our town or at home (SP. R2. R1).* ***For example, this past weeken, if you're a Nebraska fan, you would have noticed all the comments about the game in Wisconsin, Wisconsin vs. Nebraska…Many fans were commenting on the game on socal media. They were either saying what the felt about the players, coaching staff, being loyal husker fans, or simply just bashing on Wisconsin to make them selves feel better. All these comments were peoples individuals ways of expressing themselves and hey were writing about it***." (Elaboration)

Opposing view

An opposing view or alternative standpoint is the position that are directly opposed to the writer's standpoint. The same as the writer's standpoint, opposing view or alternative standpoint can also be explicitly or implicitly stated. For example:

(Example 7) " *Social media is, most often, a debilitaing influence on students' writing* (SP1)…*For those who says that socal media is a motivator, there is no real argument against students finding motivation within the social media realm…* "(OP1, opposing view 1)

Reasons of opposing view

The reason of opposing view is the justification to the alternative/opposing standpoint, and they can organized as subordinative or parallel arguments to support the opposing/alternative standpoint in a progressive or retrogressive format. For example:

(Example 8) "*One argument against social media is misuse of grammar and to excessive use of acronyms and abbreviations*." (OP1. R1)

Counterargument

A counterargument is the potential criticism to the writer's standpoint or the reasons of the standpoint. For example,

(Example 9) "*For me, I get to express my personality through my tweets.* ***Although my writing style may not be formal or whats considered appropriate writing*** *(SP1.R1.CA, counterargument to the reason 1 of standpoint 1), I feel as though my tweets express who I am as a writer…. Social media helps me express my writing in different ways that make me unique as a writer and helps me express who I am" (SP1.R1)*

Comparing example 7 and example 9, the difference between counterargument and reasons of opposing/alternative standpoint is that counterarguments are the direct attacks on the standpoint or its reasons, whereas reasons of opposing/alternative standpoint are the direct support of the alternative standpoint. The counterargument usually follows the standpoint or its reasons, and the reasons of opposing standpoint usually follows the opposing standpoint to explain its validity. The presence of counterargument does not necessarily mean the introduction of alternative standpoint. Sometimes, the writer just acknowledges the potential objection of the argument, and then refutes it to strengthen the standpoint. In this case, the counterargument does not closely relate to the writer's direct standpoint. In practice, it depends on the grader to

determine whether the counterarguments are used as introduction of the alternative standpoint or as the minor criticism of an argument. It is possible that the writer uses a series of counterarguments against each reason of the standpoint to implicitly address the opposing view.

Rebuttals

Rebuttals are the statements that either attack the alternative standpoint, counterarguments or the reasons of opposing/alternative standpoint. Therefore, the rebuttals can have two forms: a) the attacks on an explicit opposing/alternative standpoint and its associated reasons; and b) the attacks on an explicit counterargument. ***Restatement of a reason to the main standpoint is not counted as a rebuttal*** (Nussbaum & Schraw, 2007).

(Example 10) "*Social media has made students porer writers which is evident in students using poor grammar and spelling (SP1)…While the opposing side may say that students are more motivated to write (SP1.CA1), I would argue that they are only more mtivated to talk to one another, not enact these same skills in a classroom setting*." (SP1.CA1.RB1, the rebuttal 1 to the counterargument 1 of the standpoint)

Introduction

An introduction usually provides a background description of the issue and briefly introduces the arguments that follow. Sometimes it contains the writer's standpoint or even reasons, which will be used later to develop the argumentation. For example,

(Example 11) "*Social media has became a big part of our every day lives. Social media has changed our way of communicating with each other and even changed the way we write. However, these changes haven't exactly been for the better. Social*

media has made students porer writers which is evident in students using poor grammar and spelling, students using a more conversational tone in form writing, and students becoming conditioned to writing less because of the nature of social media."

Conclusion

A conclusion is present when the writer summarizes the main points of the essay. Sometimes the conclusion contains new information that was not present previously, it should also be scored as a functional element (standpoint, reasons, or so on) according to its role plays in the argumentation. For example:

(Example12) "*In conclusion Social Media has very negative effects on you as a human being. Especially with today's generation the students are easily distracted and are wasting their ime. Not only is this a bad thing, but students are also now wanting to write their papers with the acronyms they use when texting. Which in the long run affects them in a very negative way because of the way they will start to communicate."*

Nonfunctional information

Nonfunctional information includes two type of information: a) irrelevant information, any information that does not serve as any of the functional elements above is considered as nonfunctional. Sometimes this type of information can appear as incoherent text difficult to tie to the rest of the argumentation; b) verbatim repetition, the repeated information that does not serve as either emphasis or functional elements.

(Example 13) *"Everything so far seems to be on the bad side of social media, but not only should we think of social media being a bad influence on writing, but w have to also look at how bad this is influencing our communication skills. If we stop and think how easy it is to create a profile and change your pictures and photo shop it so*

*that you look gorgeous, when you are behind a computer screen you would be abe to communicate perfectly fine. What if you were in front of people now? This would change the whole scenario of who you are and how you are communicating with others***.** (Nonfunctional, NF*)*

Large chunk of nonfunctional elements such as example 13 is relatively easy to detect because the writer did not talk about the influence of social media on "writing". **When scoring large chunks of nonfunctional elements, the large chunks should be divided and scored as multiple nonfunctional elements based on the number of meaning units in the chunks. That is to say, the counts/scores of the nonfunctional elements should be the number of the meaning units.** Sometimes the writer may include one sentence in the middle of a series of arguments that do not contribute to the flow of the argumentation, which should also be scored as nonfunctional element. For example,

(Example 14) "One thing that isn't an easy fix is the use of critical thinking and proper research. *When people write on social media they are usually writing about what iterests them and what they are passionate about. Whether it is sports, clothing, games or anything else they are writing and they are enjoying doing it.*" (NF)

In example 14, the italic part does not relate to "critical thinking and proper research" mentioned in the first sentence (the statement of the paragraph).