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EXPERT TEACHER CONTRIBUTIONS TO ARGUMENTATION QUALITY

DURING INQUIRY DIALOGUE

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by

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DISSERTATION APPROVAL

We hereby approve the Dissertation

EXPERT TEACHER CONTRIBUTIONS TO ARGUMENTATION

QUALITY DURING INQUIRY DIALOGUE

of

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ABSTRACT

EXPERT TEACHER CONTRIBUTIONS TO ARGUMENTATION QUALITY

DURING INQUIRY DIALOGUE

by Joseph M Oyler

The purpose of this study was to examine how expert teachers facilitate *inquiry dialogue* to contribute to argumentation quality during group discussions in elementary school classrooms. "Argument Literacy," or the ability to comprehend and formulate arguments, is an important learning outcome identified by the recent Common Core State Standards. Given the value placed on argument skills, we need to know how teachers can support the development of argumentation in their students.

This study examined the facilitation of three expert teachers as it related to the quality of argumentation generated by fifth-grade students engaging in *inquiry dialogue*. To do this, I analyzed six discussion transcripts from three teachers and conducted follow-up interviews with each teacher. First, I used the transcripts to track the development of student-generated *argument threads*, or sequences of argument features evoked to respond to a contestable question. After isolating each thread, I developed a record of *teacher moves* during the same discussion. I analyzed the relationship between the *teacher moves* and *argument threads* to explore how *teacher moves* related to *argumentation quality*. Following the identification of *teacher moves*, I interviewed teachers to explore their underlying beliefs concerning facilitation and how those related to specific facilitative interventions.

The findings from the analysis of transcripts suggest that the use of *argument threads* can enhance existing frameworks for assessing *argumentation quality*. The use of *thread length* provided a more nuanced and contextually sensitive picture of quality and helped highlight *teacher moves* related to quality. The findings also revealed a set of seven commonly used *moves* that teachers use to support student argumentation. These *moves* generally focus on clarifying the process of the inquiry and the content of student statements.

Teacher interviews offered additional insights into the underlying beliefs and principles that guided the teacher's strategic use of *moves*. I identified three guiding principles, common among the teachers. These principles were shown to align with the more general teacher beliefs about *inquiry dialogue* and the role of argumentation. Finally, I explored the possible influences of the teachers' background knowledge on their facilitation and discussed implications for future research and teacher professional development.

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CHAPTER 1 - RATIONALE

For decades, educators have emphasized the importance of argumentation to help

students think through complex problems (Halpern, 1998; Kuhn & Crowell, 2011), to

facilitate conceptual change (Asterhan & Schwarz, 2007; Baker, 1999; Nussbaum &

Sinatra, 2003; Wiley & Voss, 1999) and to make sound judgments (Gregory, 2009;

Gregory & Laverty, 2009; Hadot, 2002; Sharp, 1987; Sternberg, 1999, 2003) "Argument

literacy," or the ability to comprehend and formulate arguments, is also an important

learning outcome identified by the recent Common Core State Standards. "Much

evidence supports the value of argument generally and its particular importance to

college and career readiness" (Common Core State Standards, 2010, p. 24). Given the

value placed on argument skills, we need to know how teachers can support the

development of argumentation in their students.

Contemporary theory and research suggest that classroom dialogue can be used to

help students develop the knowledge and skills of argumentation (Frijters, ten Dam, &

Rijlaarsdam, 2006; Murphy, Soter, Wilkinson, Hennessey, & Alexander, 2009;

Reznitskaya et al., 2009). In *The New Dialectic* (1998) Douglas Walton suggests that

dialogues can be distinguished by the purpose of the engagement. Walton identified

several dialogue types, including inquiry, negotiation, and persuasion. An *inquiry*

dialogue is a collaborative engagement of participants, aimed at determining the truth or

reasonability of a given proposition (Walton, 1989, 1998). It is, perhaps, best aligned

with the pedagogical goal of promoting argumentation.

Walton distinguishes *inquiry dialogue* from instances of negotiation or persuasion in ways that are directly relevant to the development of argumentation. Where inquiry aims at what is most reasonable to believe or do, negotiations are resolved when the desires of the participants are satisfied. Rather than depend on good reasoning, a negotiation could be resolved through brainstorming, simple agreement, or, in some cases, a lucky guess. Persuasion dialogue is equally antithetical to quality argumentation in that it is resistant to collaboration. In persuasion, the goal is to convince your opponent to agree with your position by any means necessary – reasonable or not. In extreme cases, appeals to force might be appropriate and effective during persuasion. Thus, *inquiry dialogue* represents the normative dialogue type for the purpose of supporting the development of students' reasoning, as it is most aligned with the norms and practices of rational argumentation.

In terms of learning theories, the use of *inquiry dialogue* is supported by social-constructivist perspectives on learning (Mead, 1962; Rogoff, 1990; Vygotsky, 1968). These theories point to social interaction as a mechanism for the internalization of new and more complex ways of thinking that are indicative of higher levels of cognitive development (Vygotsky, 1981). Specifically, they describe how the use of argumentation skills, such as giving reasons, providing evidence, generating examples and other "moves," become part of an abstract conception of argumentation that can be used in new contexts. The theory supporting the use of *inquiry dialogue* for argumentation development will be discussed in more depth in Chapter 2.

There is also a growing body of empirical research that demonstrates the pedagogical potential of classroom dialogue for increasing student's inferential comprehension of text, argumentative writing and reasoning across contexts (Dong, Anderson, Li, & Kim, 2008; Kuhn & Crowell, 2011; Mercer, Wegerif, & Dawes, 1999; Reznitskaya et al., 2001). For example, Kuhn and Crowell (2011) studied adolescent (or middle-school) students engaged in peer dialogues where they were asked to develop and evaluate reasons for a given position, and to anticipate reasons one might give against their position. Following the intervention, the students wrote argumentative essays that were longer, contained more arguments and had more dual-perspective arguments, compared to the essays of students who did not participate in dialogic activities.

Despite the benefits of classroom dialogue for the development of argumentation, the literature shows that the practice is still largely absent in American schools (Applebee, Langer, Nystrand, & Gamoran, 2003; Commeyras & DeGroff, 1998; Nystrand, 1997). In their observations of existing classrooms, researchers continue to find teachers doing most of the talking and students being routinely asked to "recall what someone else thought, rather than articulate, examine, elaborate, or revise what they themselves thought" (Nystrand, 1997, p. 3). The gap between the perceived value of *inquiry dialogue* and the continued use of more traditional instructional methods may in part be due to classroom dialogue representing a dramatic shift, not only in one's teaching practices but in teachers' conception of teaching and learning itself. Studies show that teachers struggle to make this shift and need support in doing so (Adler, Rougle, Kaiser & Caughlan, 2003; Alverman & Hayes, 1989; Juzwik, Sherry, Caughlan,

Heintz & Brosheim-Black, 2012). Further, the challenge of helping teachers to shift from

more traditional approaches to teaching through dialogue is exacerbated by a lack of

understanding around what teachers should do during an *inquiry dialogue*.

Theoretical accounts and studies over the past decade have identified several

features of dialogic interactions conducive to the development of argumentation

(Burbules, 1993; Lipman, 2003; Mercer & Littleton, 2007; Nystrand, et al., 2003; Scott,

Mortimer, & Aguiar, 2006; Wells, 2000; Soter, Wilkinson, Murphy, Rudge, Reninger &

Edwards, 2008). In a recent article, Reznitskaya (2013) summarized these features as

follows:

- First, in a dialogue we should see a more egalitarian participation structure

  and shared distribution of key responsibilities. For example, during dialogic

  discussions, students should be asking questions, making decisions about who

  gets to talk and when, evaluating procedural rules and norms, and generating

  content to be explored through the inquiry.

- Second, the dialogue should aim at addressing inherently contestable

  questions that are complex and cognitively challenging to answer. These are the

  kinds of questions that drive all disciplines and invite students to create and

  reconstruct knowledge rather than recite and retain the conclusions of others

  (Wells, 1999).

- Third, the dialogic engagement is a metacognitive one. During the dialogue,

  participants are charged with attending to the both process and the product of the

  inquiry (Flavell, 1985). In a dialogue we see students asking for clarification or

clarifying each other's comments and making explicit connections to the

comments of others (e.g. "I am going to build on what Liam said."). Connecting,

clarifying, restating and building are all evidence of meta-level understanding.

This metacognitive understanding, gives participants the opportunity to evaluate

and contribute to the success of the dialogue (Kuhn & Dean, 2004), (p116-117).

Although research reveals general features of *inquiry dialogue*, little is known

about how teachers can promote quality argumentation during discussions. One reason

for our lack of understanding may lie in the methodologies used to analyze the process of

argumentation. One commonly used approach to analyzing group discussions involves

the use of a framework developed by Stephen Toulmin (1958). A typical way of applying

the framework has been to identify and extrapolate "core argumentation features" that

arise in student discussion (e.g., Kelly, Druker & Chen, 1998; Jimenez-Aleixandre,

Rodriguez & Duschl, 2000; Driver, Newton & Osborne, 2000; Erduran, Simon, &

Osborne, 2004). Core features serve specific functions in the process of leading to a

conclusion. The presence and number of core features often serve as indicators of

argument *quality* within the literature.

Although common, researchers report that these approaches require a significant

amount of interpretation on the part of the analyst (Duschl, Ellenbogen & Erduran, 1999)

and involve challenges in applying these frameworks accurately and consistently (Kelly,

Druker & Chen, 1998). Further, even if analysts are accurate in their interpretation, the

question of the *acceptability* of a given reason or premise and the *validity* of the

inferences drawn are still open to question. A strong or *quality* argument depends upon

these variables as well. Analyzing discussions via core elements also distills and reduces the discussion down in such a way that it fails to capture how those features were generated. For example did the teacher prompt the generation of a given feature, or was it simply the result of a disagreement? My study seeks to address the question of "How?" by analyzing how experienced facilitators contribute to the quality of the group argument.

Researchers have tried to use alternative approaches and analytic frameworks to address the challenges of applying the Toulmin model. These approaches include variations on the Toulmin model and the use of other frameworks, such as the one proposed by Walton (1998). For example, Erduran et al. (2004) supplemented the Toulmin model with a coding scheme that distinguishes arguments according to level of complexity based upon the quantity and type of Toulmin's core elements within an argument (Nielsen, 2013). In other studies, researchers have developed argument diagramming techniques (Chinn & Anderson, 1998) that look at the causal relationships between participant moves within an *inquiry dialogue*. These causal networks take the form of macro-level representations of a dialogue and allow researchers to capture argument types, instances of co-construction and value judgments, amongst other features not readily reflected in a Toulmin analysis. Still, these approaches are descriptive in nature and simply represent the moves and structures of a given discussion. Unfortunately, they don't focus on facilitator moves and how they contribute to the development of the group argument.

In addition to research studies, there is pedagogical knowledge about the use of *inquiry dialogue* in the classroom, coming from established approaches that center

around dialogue. In a review of these approaches, three programs were identified by Soter et al. (2009) as taking a Critical Analytic stance which they define as giving "prominence to querying or interrogating the text in search of the underlying arguments, assumptions, worldviews, or beliefs that can be inferred from the text" (p. 374). Those programs are Collaborative Reasoning (Anderson, Chinn, Chang, Waggoner & Nguyen, 1998), Philosophy for Children (Lipman, Sharp & Oscanyan, 1980), and Paideia *Seminars* (Billings & Fitzgerald, 2002). Two of these programs, *Philosophy for Children* and *Collaborative Reasoning* were further distinguished as displaying "high incidences of questions that elicited high-level thinking (analysis, generalization, and speculation), and high incidences of elaborated explanations and/or exploratory talk" (Soter et al., 2009, p. 389) consistent with *inquiry dialogue*. These approaches and related research studies (Adler, 1982; Billings & Fitzgerald, 2002; Waggoner, Chinn, Yi & Anderson, 1995) offer insight into ways of initiating and facilitating *inquiry dialogue*.

To conclude, there is a clear desire on the part of educators and policy makers to help students improve their argument skills (Common Core State Standards Initiative, 2010; Kuhn, 1992; Jonassen, 2007). Thankfully, research is beginning to make progress in identifying instructional practices that support the development of those skills (Kuhn, 1992; Kuhn & Udell, 2003; Reznitskaya, Anderson & Kuo, 2007; Soter et al., 2009). We are also learning about the process and structure of the arguments constructed by students participating in those practices (Chinn & Anderson, 1998; Chinn et al., 2001; Kelly et al., 1998; Jiminez-Aleixandre et al., 2000). Yet, given that these studies have focused largely on the process and products of student arguments, they cannot tell us much about how

and when teachers can support such outcomes, beyond providing opportunities to engage in argumentation. In this study, I examine how expert teachers facilitate *inquiry dialogue* to contribute to the quality of argumentation. To do this, I analyzed transcribed classroom discussions, collected as part of a previous research study on the use of *inquiry dialogue* in elementary school language arts classrooms (Reznitskaya et al., 2012). In the analysis, I tracked the development of student generated *argument threads* (sequences of *Core Argument Features* evoked to respond to a contestable issue or question) within a given *inquiry dialogue*. After isolating each thread, I applied a modified version of a framework for measuring argumentation quality (Erduran, Simon, & Osborne, 2004) to identify quality *argument threads*. I then developed a record of teacher "moves" during the same discussions. By analyzing the relationship between the teacher moves and the argument threads, I developed a picture for how those interventions contributed to argument quality.

Following the identification of moves, I interviewed the three expert teachers who participated in the original study. The interview involved two segments. The first segment explored the teacher's general pedagogical beliefs or principles, and how they believed their practice of dialogue facilitation corresponded to those beliefs. The second segment involved a shared review of video recordings of their classroom discussions. During the review, teacher's explained facilitation moves that they made and the features of the discussion they were responding to. They sometimes commented on whether or not their behaviors on these recordings corresponded to their ostensible pedagogical

principles. I analyzed transcripts of the interviews, to further explore key findings and principles that emerged during the analysis of the discussion transcripts.

Below is a preview of the chapters covered in the remainder of this paper:

- Chapter 2 – Review of Theory and Research.

    - *Inquiry dialogue* and Argumentation: In this section, I review theory and research on the use of *inquiry dialogue* for promoting argumentation, making a case that it has the potential to increase students' argument skills.

    - Approaches to Argument Analysis: In this section, I review the ways that researchers have analyzed classroom discourse.

    - Pedagogical Approaches Using *Inquiry dialogue*: In this section, I review literature on effective facilitation of *inquiry dialogue* and identify existing gaps in knowledge.

- Chapter 3 - Methodology: In this chapter, I describe the data and methodology used to analyze the data (discussion transcripts and facilitator interviews).

- Chapter 4 - Findings from the Analysis of Discussion Transcripts: In this chapter, I present findings from the analysis of discussion transcripts.

- Chapter 5 – Findings from the Analysis of Facilitator Interviews: In this chapter, I describe findings from the analysis of interview transcripts.

- Chapter 6 – Discussion: In this chapter, I discuss the relevance of findings to the field and identify implications.

CHAPTER 2 – THEORY AND RESEARCH ON INQUIRY DIALOGUE AND

ARGUMENTATION

Inquiry Dialogue

Inquiry dialogue is strongly rooted in social-constructivist perspectives on

learning (Piaget & Inhelder1969; Vygotsky, 1968) that view students as active

participants in the construction and evaluation of knowledge. Advocates of these

approaches argue that "through participation in activities that require cognitive and

communicative functions, children are drawn into the use of these functions in ways that

nurture and 'scaffold' them" (Tharp & Gallimore, 1988 p. 7). Learning occurs within

interactional contexts where individuals try on ways of talking and thinking as a means of

internalizing words and concepts (Wells, 1999). This, in turn, generates new ways of

thinking about, and interacting with the world.

Within social-constructivist perspectives, words and concepts are more than

language units; they are cultural tools (Vygotsky, 1981) with contextual value and

applicability. Within the community of argumentation, common terms and concepts are

the very tools of inquiry. Positions, reasons, evidence, examples and conclusions are all

general features of argumentation that serve particular functions and help achieve

different purposes. During argumentation, students practice taking a position and

supporting it with reasons and evidence, they test arguments by applying them to

examples or by seeking counter-examples to understand the limits of their conclusions.

Thus "learners incorporate ways of thinking and behaving that foster the knowledge,

skills, and dispositions needed to support transfer to other situations that require

independent problem solving" (Murphy, Wilkinson, Soter, Hennessey & Alexander, 2009 p. 741). How we incorporate the skills and understanding of argumentation is further informed by theories from cognitive psychology.

Cognitive psychologists have explored a theoretical construct called "schema" that describes how we organize and represent our learning and understanding within memory (Anderson & Pearson, 1984; Thorndyke, 1979; Reed, 1993). A schema is a general knowledge structure made up of common features representing a concept, object or situation that is filled in with particular details in a given moment. According to schema theory, when we experience a particular situation we activate the appropriate schema based on the recognition of key features of that schema. New experiences can also help us to revise the schema to improve its usefulness. In a classic paper, Schank and Abelson (1977) provide an example of a restaurant schema which is constructed from common aspects of visits to multiple restaurants over time. As such, the restaurant schema evolves to include features such as ordering and tipping. These abstracted features help learners to apply a restaurant schema to multiple and varied contexts, allowing them to effectively navigate their experience in a new restaurant. Schema theory can be applied to *inquiry dialogue* and can be used to explain how we acquire the skills of effective argumentation.

Argument Schema Theory (AST) (Reznitskaya & Anderson, 2002) "applies structuralist notions of knowledge organization and representation to the subject of learning argumentation" (Reznitskaya & Gregory, 2013 p. 118). AST points out how schema construction happens during *inquiry dialogue* and is applied and refined through

subsequent episodes of argumentation. As the schema develops, it can be used in a variety of other transfer tasks.

Empirical research is generally supportive of the value of dialogue and the possibility of transfer to new tasks (e.g. Frijters, te Dam & Rijlaarsdam, 2008; Langer, 2001; Wegerif, Mercer & Dawes, 1999). The use of dialogue has been linked to a variety of outcomes central to language arts instruction, including literal and inferential comprehension (Bitter, O'Day, Gubbins & Socias, 2009) and argumentative/persuasive writing (Applebee, Langer, Nystrand & Gamoran, 2003; Dong, Anderson, Kim & Li, 2008; Kim, 2001; Reznitskaya, Anderson & Kuo, 2007).

Research has also connected *inquiry dialogue* to conceptual change (Pontecorvo & Girardet, 1993), student motivation (Johnson & Johnson, 1988; Smith, Johnson & Johnson, 1981), subject area knowledge (Manson, 1998, 2001; Voss & Wiley, 1997; Zohar & Nemet, 2002), understanding of mathematical concepts (Lampert, Rittenhouse,& Crumbaugh, 1996; Schwarz, Neuman, & Biezuner, 2000), problem solving (Teasley, 1995; Littleton & Light, 1999) and general reasoning ability (Rojas-Drummon & Mercer, 2003; Mercer, Wegerif & Dawes, 1999; Wegerif, Mercer & Dawes, 1999). For example, Mercer, Wegerif and Dawes (1999) found that students who had engaged in a form of *inquiry dialogue* called "Exploratory Talk" were more effectively able to work together on problem-solving tasks and scored better on individual measures of reasoning as indicated by the Raven's matrices test.

There is also a growing body of empirical research supporting the value of dialogue for increasing argument skills and dispositions (Jimenez Aleixandre, Diaz de

Bustamante & Duschl, 1998; Kuhn, Shaw, & Felton, 1997; Patronis, Potari & Spiliotopolou, 1999; Perkins, Farady & Bushy, 1991; Voss & Means, 1991), an increase in the number of reasons given for a position (Reznitskaya, Anderson & Kuo, 2007), as well as increases in metacognitive understanding (Kuhn, Shaw & Felton, 1997). For example, Felton found that students who engage in *inquiry dialogue* developed their awareness for the need to include and address counter-positions when constructing arguments (2004). The ability to develop counter-positions, alternative perspectives and challenges has also been linked to prior participation in *inquiry dialogue* (Kuhn, Shaw & Felton, 1997; Osborne, Erduran & Simon, 2004).

Despite the promising results related to the use of *inquiry dialogue* in a classroom, studies continue to document serious weaknesses in the quality of arguments developed by students engaged in such dialogues. For example, research shows that adolescents and young adults can construct arguments in support of their own positions, but are less likely to construct arguments from an opposing viewpoint or effectively identify evidence in support of their position (Brem & Rips, 2000; Kuhn, 1991, 2001; Kuhn, Shaw & Felton. 1997; Voss & Means, 1991). This may be a consequence of students spending little to no time engaged in *inquiry dialogue* in school (Applebee, Langer, Nystrand, & Gamoran, 2003; Smith, Hardman, Wall, & Mroz, 2004; Wells, 2007). It might also be a matter of our incomplete understanding of how teachers can best support the process of *inquiry dialogue* in classrooms. The hope is that new research can inform meaningful changes in typical classroom practices as a way of addressing these shortcomings (Reznitskaya et al.

2012). How we understand and analyze the arguments and argumentation practices within classrooms can support those changes as well.

<div align="center">**Approaches to Argument Analysis**</div>

Two approaches to argument analysis dominate the literature. These approaches apply different analytic frameworks drawn from alternative theories of argumentation. One approach distinguishes the various components that make up an argument while the other categorizes arguments based on the argumentative strategy that is utilized. Both approaches inform the present study.

Core Elements

In past decades, researchers interested in the use of argumentation in classrooms developed a number of analytic approaches to examine student arguments (Chinn & Anderson, 1998; Erduran, 2008; Grennan, 1997; Kienpointer, 1992; Nussbaum, 2011; Walton, 2007). One widely used model in analyzing arguments was developed by Stephen Toulmin (e.g. Bell & Linn, 2000; Chambliss & Murphy, 2002; Erduran, Simon, & Osborne, 2004; Kelly, Drunker & Chen, 1998; McNeil & Krajcik, 2009; Toth, Suthers & Lesgold, 2002; Weinberger, Stegmann & Fischer, 2005). In fact, it has been suggested that most systems of diagramming argument structure are based directly or indirectly on Toulmin's model. In the *Uses of Argument* (1958), Toulmin identifies six essential components of an argument. *Claims* are the concluding statements that arguments are built to support. *Data* are facts and reasons given in support of claims. *Warrants* represent descriptions or principles that define a connection between *data* and *claims*. *Backing for warrants* support the proposed connection of the warrant. *Rebuttals* identify

exceptions to warrants and aim at refuting the *claim*. Finally, *qualifiers* specify limitations to a *warrant* or *backing*. The presence of qualifiers is a unique contribution by Toulmin that he hoped would capture the reality that arguments constructed in live situations (dialogue) are open to exceptions and tend to only produce tentative conclusions. This is in direct contrast to formal logical models, which are only concerned with deductive certainty.

The intended sensitivity to real arguments makes the Toulmin model useful for understanding arguments made during group discussions, yet researchers report that the model itself does not help analysts to distinguish essential elements of an argument within a discussion (e.g. Duschl 2007; Erduran, 2008; Erduran, Simon & Osborne, 2004; Jiménez-Aleixandre et al., 2000). Van Eemeren et al. (1987) pointed out that when applying Toulmin's model what might be interpreted as one core feature of an argument could easily be interpreted as a different feature in another case. Similarly, Kelly et al. (1998) identify one case where "the speaker may be affirming the previous claim…or offering an alternative interpretation" (p. 866).

Another criticism of the use of the Toulmin model in educational research is that the framework is too general to capture the nuance of the contributions offered in an actual discussion (Anderson et al., 1997; Chinn & Anderson, 1998; Nielsen, 2011; Nussbaum, 2011). For example, Chinn and Anderson (1998) found that in addition to constructing arguments made up of various core features, students generated alternative resolutions to the issue at hand. These alternatives extended the narrative of the story being discussed as a way of responding to it.

Different strategies have been adopted to address this weakness. In some cases, researchers have expanded the list of elements and refined Toulmin's core features to achieve more precision (Jiménez-Aleixandre et al., 2000; Kelly, Druker & Chen, 1998). For example, in a study of student discussions surrounding an electricity-based performance assessment, Kelly et al. (1998) added a new core element of "*challenge*" and divided Toulmin's *data* into subcategories in attempt to capture some of the more subtle, context-dependent influences on student arguments.

Other researchers have responded to the challenges presented in applying the Toulmin model by assuming that some unidentified features of the argument are present but implied within the dialogue (Anderson, Chinn, Chang, Waggoner & Yi, 1997; Resnick, Salmon, Zeitz, Wathen & Holowchak, 1993). For example in a study of students' collaborative problem solving and discussions around particular social issues, Reznick, et al. (1993) included implied statements in their maps of discussions. Making such assumptions and attributions still leaves the implicit statements unexamined during the discussion. It is possible that in some cases the explication of *warrants* by the facilitator can make a significant contribution to the quality of a group argument. Mocagno and Konstantinidou suggest as much in theorizing that *warrants* might reveal background beliefs that "are fundamental for the process of learning" (2012 p 226). If we are to employ argumentation as an educational tool, it is imperative to understand how explicit *argument features* should be made.

Missed or misinterpreted *Argument Features* are not the only challenges researchers face when using the Toulmin model. They also argue that the model itself

fails to guide researchers toward key interpretive decisions (Reed & Rowe, 2006) and that these decisions often require an understanding of the *context* of the argument's construction that the model does not capture (Driver et al., 2000; Kelly et al., 1998). How a discussion progresses depends on a number of variables, including the question being answered, the teacher's facilitation style, unique student constituency and participation, and rules of engagement. This is why the present study will focus on facilitator moves as they relate to the group argument. My hope is that a finer-grained analysis will inform our understanding of how these important but difficult facilitation decisions and interpretations can effectively be made.

Possibly the most pressing concern with the Toulmin model for the purpose of this study has to do with how arguments are reproduced through this form of analysis. When one applies the model to an actual *inquiry dialogue*, the result is often a set of grounds, warrants and backings in support of a claim that are decontextualized and organized to make the argument clear. This product of analysis is monologic, even when one's desire is to investigate the dialogic nature of argumentation:

> If one is interested in the dialectical features of dialogic argumentation one has to attend to argument sequences for there is no (or at least not sufficient) information about these features stored in extrapolated core elements. The force of extrapolating cores is that it allows the analyst to abstract noise, reconstruct sentences, and freely re-arrange talk units as standing in (informal) logical relations with each other — such as the relation between claim, data, warrants etc. (Andrews, 2005). But there is a tradeoff between

> (informal) logical relations and sequential situation. The extrapolation of
>
> core elements carves each reconstructed talk unit out if its sequential context
>
> (Nielsen, 2013, p. 375).

Removing core elements from their sequential context makes it difficult, if not

impossible, to understand how facilitation influenced the generation of those elements.

Yet, this understanding is essential if we want to know what teachers can do to contribute

to the group's argument. This has lead researchers to look for alternative models that can

detect more contextual features of argumentation.

Argument Strategies

One alternative approach to argument analysis advocated for by researchers

(Duschl, 2008; Nussbaum, 2011) is Douglas Walton's Dialogue Theory (1998, 2008).

"Dialogue theory views argumentation as a pragmatic, goal-directed activity that involves

(a) a type of argumentation dialogue, (b) argumentation schemes, and (c) critical

questions" (Nussbaum & Edwards, 2011, p. 450). Walton's dialogue theory helps us to

see the purposeful, strategic and dialogic nature of argumentation. Dialogue types

distinguish dialogic engagements according to the purpose of the dialogue (e.g. to

persuade, negotiate, find the truth…). Argumentation schemes on the other hand "are

abstract patterns of reasoning outlining the semantic and logical structure of the premises

and the conclusion of the most common types of argument" (Macagno & Konstantinidou,

2012 p. 226). Two common examples of argumentation schemes are the use of expert

opinion to support one's claim and arguing from analogy, amongst others.

Mocagno and Konstantinidou (2012) used argumentation schemes as an analytic framework to help reconstruct and expose the implicit premises of student arguments. By reconstructing the arguments via the appropriate argumentation schemes, the researchers were able to identify "implicit premises" that, in turn, served as clues to student's background beliefs. In particular, the authors focused on beliefs that would necessarily have to be present to justify the conclusion the students were making. The researchers concluded that making these beliefs and premises explicit allowed students and teachers to evaluate, and further improve, their reasoning. Thus, schemes served as a valuable pedagogical tool in such cases. They also represented another way of determining argument quality that can be used in the present study. If an argument containing explicit premises is better than the one based on implicit assumptions then teacher moves that increase explicitness should be part of quality argumentation.

Not only does the Walton model allow researchers to identify contextual features such as implicit premises and background beliefs, it also helps to evaluate their plausibility through the application of critical questions. Walton's critical questions are a form of challenge that target a specific argumentation scheme and help represent the back and forth nature of argument construction and evaluation. For example, when a person uses the scheme of Expert Opinion, Walton suggests a critical question along the following lines "Is the expert's area of expertise relevant here?" (2008). Because dialogue theory and argumentation schemes seek to represent the purposeful and strategic nature of argumentation, they are more applicable to how students argue versus what the students' abstracted arguments look like.

Researchers have analyzed student discussions for the use of argumentation schemes (Duschl, Ellenbogen & Erduran, 1999; Duschl, 2008; Nussbaum, 2008) and critical questions (Jiménez-Aleixandre & Pereiro-Munoz 2002). Duschl (2008) applied nine schemes to student discussions around how to improve a science fair project and reported that the Walton framework "more adequately fit the discourse structures (e.g., dialectical and rhetorical) and reasoning sequences of the group interview" (p. 169), while the Toulmin model proved too general and "awkward" (p. 168) to apply to the student dialogues. Although the Walton model is better at capturing the more dialogic aspects of group argumentation, there are not a sufficient number of studies using the framework to know if it fully escapes the interpretation challenges associated with the Toulmin model (Nielsen, 2011). On a theoretical level, the presence of critical questions within a given *inquiry dialogue* may serve as a mark of increasing argument quality.

I did not apply the Walton model to this study for two reasons. First, evaluating the plausibility of the individual arguments was not necessary to locate quality argumentation or related teacher interventions. Second, teacher questions did not consistently reflect the critical questions introduced by Walton. Teacher questions in this study more consistently aimed at clarification.

There are a number of additional analytic approaches that seek to represent group argumentation as a whole through different mapping techniques. Researchers represent student contributions chronologically (Resnick et al., 1993), link statements based on their semantic relationships (Cavalli-Sforza, Lesgold & Weiner, 1992), and construct networks of premises and conclusions (Chinn & Anderson, 1998) to capture the

interactive nature of *inquiry dialogue*. In a discussion of elementary school students, Chinn and Anderson use an Argument Network diagram to show that a number of arguments were introduced and subsequently left undeveloped by the group. This is made clear via arrows (or in this case a lack thereof) linking statements to initial positions offered by students. One of the values of diagrams relevant to the present study is that they help the analyst to see how and when teachers respond to specific parts of the group argument. In my study, therefore, I used a form of argument mapping to allow me to link teacher moves to instances of quality argumentation, as explained in Chapter 3.

Argumentation Quality

The analytic approaches discussed thus far are primarily used to represent the features of student arguments. In other studies researchers make the quality of argument or argumentation their explicit focus (Erduran et al., 2004; Jimenez-Aleixandre, Rodriguez & Duschl, 1999; Kuhn, 1991; Means & Voss, 1996; Sadler & Fowler, 2006; Yu & Yore, 2013; Zohar & Nemet 2001). These studies are particularly important because of the emphasis on argument quality in my own study. I conducted the following review in order to help me to identify effective ways of framing episodes of argument quality that could be further analyzed for connections to teacher facilitation.

The ways which researchers understand and analyze argument quality is grounded in argument theory (Toulmin, 1958; van Eemeran, 2002; Walton, 1998), empirical research, and field dependent conceptions of good practice (Erduran & Villamanan, 2009; Pontecorvo & Girardet, 1993). Good arguments in science, for example, may draw from the Toulmin model, but further emphasize the role of evidence

in making predictions. Despite these field-dependent variables, studies still reflect clear agreement about the general content and structure of good arguments, making the research from various fields relevant to the present study.

Some researchers see quality as an extension of the complexity (more and different argumentative moves) of the arguments constructed. For example, Erduran et al. (2004) generated a scheme to supplement the Toulmin model (1958) that would allow it to be used as a "quantitative as well as a qualitative indicator of the teaching and learning occurring in classrooms" (p. 916). The scheme, represented in Table 1 below, focused on rebuttals and categorized them into levels of complexity. The scheme retains a focus on core elements, but ranks oppositions, or challenges, according to levels of strength.

Table 1. Analytical framework used for assessing the quality of argumentation

Level 1	Level 1 argumentation consists of arguments that are a simple claim versus a counter-claim or a claim versus a claim.
Level 2	Level 2 argumentation has arguments consisting of a claim versus a claim with either data, warrants, or backings but do not contain any rebuttals.
Level 3	Level 3 argumentation has arguments with a series of claims or counter-claims with either data, warrants, or backings with the occasional weak rebuttal.
Level 4	Level 4 argumentation shows arguments with a claim with a clearly identifiable rebuttal. Such an argument may have several claims and counter-claims.
Level 5	Level 5 argumentation displays an extended argument with more than one rebuttal.

(Erduran, Simon & Osborne, 2004, p. 928)

The scheme has been used in multiple studies (Aufschnaiter, Erduran, Osborne & Simon, 2008; Osborne, 2005; Simon, 2008; Zeidler, Osborne, Erduran, Simon & Monk,

2006). Some researchers have adjusted the framework to better fit their research needs

(Chin & Osborne, 2010; Clark & Sampson, 2008). For example Clark and Sampson

(2008) added a second category of rebuttals focusing on challenges to the "validity of a

thesis" to better represent the kinds of argumentation that aim at socio-scientific issues.

Quality can also be understood as a matter of resistance to refutation. Theorists in

the field of argumentation point out that informal arguments, rather than being

inductively or deductively valid or invalid, can also be understood as defeasible

(Toulmin, 1958; Walton, Reed & Mocagno, 2008). A defeasible argument may not be

logically sound on its own, but may function as presumptively acceptable in order to

move forward with an inquiry even in the face of uncertainty. "A defeasible argument is

one in which the conclusion can be accepted tentatively in relation to the evidence known

so far in a case, but may need to be retracted as new evidence comes in" (Walton, Reed &

Macagno, 2008, p. 2). Challenging a defeasible argument involves direct challenges to

specific core features of the argument (warrants and premises) or arguments in favor of

an alternative conclusion. An argument that can withstand such challenges and

competitors is stronger. Thus, a process of argumentation that involves challenges and

counter-arguments should produce better arguments and should be seen as a higher

quality process.

Multiple researchers have looked at how participants respond to the arguments of

others, through direct challenges and or counter-arguments, as a mark of argument

quality (Clark & Sampson, 2008; Erduran et al., 2004; Keefer, Zeitz & Resnick, 2000;

Means & Voss, 1996; Osborne, Erduran & Simon, 2004; Sadler & Fowler, 2006; Zohar

& Nemet, 2002). For example, Zohar and Nemet "analyzed students' ability to formulate arguments, alternative arguments, and rebuttals and to justify them" (2002, p. 43) in written posttests following classroom dialogue concerning issues in bioethics and on transfer tasks. A scheme, such as the one developed by Erduran to address issues of complexity (counter-arguments and rebuttals) proved beneficial for my own study, as explained in Chapter 3.

To this point, I have looked at the theory and research on the use of *inquiry dialogue* in educational settings and described various ways researchers have analyzed argumentation. This review helped me to identify a number of approaches that I used to represent and analyze arguments generated by students as they discuss assigned readings in Language Arts classrooms. By analyzing core features and applying schemes of argument complexity, I was able to recognize episodes of quality group argumentation that could further be analyzed for teacher contributions.

Pedagogical Approaches Using Inquiry Dialogue

In this chapter, I look at the literature on *inquiry dialogue* to better understand what is currently known about successful facilitation. I seek to identify ways to analyze teacher interventions that can inform our understanding of how they contribute to argument quality. I place a particular focus on three specific pedagogical approaches that prove consistent with the concept of *inquiry dialogue* presented in this paper. I first look at the recommendations made within the theoretical and pedagogical literature and then review what empirical research has to say about these recommendations. I close the

chapter with a look at select, targeted studies that further inform our understanding of effective facilitation.

As previously mentioned, there are a number of established approaches to classroom discussion identified in the literature. The approaches were informatively compiled and analyzed in a comprehensive study by Soter et al. (2009). In total, nine approaches were identified. They include: Grand Conversations, Book Club, Literature Circles, Instructional Conversations, Questioning the Author, Junior Great Books, Collaborative Reasoning, Philosophy for Children, and Paideia Seminar. Soter et al. further grouped these approaches according to their "stance toward text":

> An expressive stance (Jakobson, 1987) gives prominence to the reader's affective response to the text that is to the reader's own spontaneous, emotive connection to all aspects of the textual experience. An efferent stance (Rosenblatt, 1978) gives prominence to acquiring information from the text. A critical-analytic stance (Chinn & Anderson, 1998; Wade, Thompson, & Watkins, 1994), gives prominence to querying or interrogating the text in search of the underlying arguments, assumptions, worldviews, or beliefs that can be inferred from the text. (p. 374)

Most relevant to the conception of *inquiry dialogue* used within this study are the three approaches representing a critical-analytic stance toward text, namely Paideia Seminar (PS), Philosophy for Children (P4C), and Collaborative Reasoning (CR). Numerous theoretical, empirical and pedagogical publications exist describing these three approaches (Adler, 1982; Billings & Fitzgerald, 2002; Collaborative Reasoning, 2011;

Lipman, Sharp & Oscanyan, 1980; Gregory, 2008; Splitter & Sharp, 1995; Waggoner, Chinn, Yi & Anderson, 1995). Each one is an established program with its own history and methodology. The three approaches are by no means the only approaches to facilitating *inquiry dialogue*. However, given their expressed focus on arguments, I have chosen to examine them more closely for possible insights into effective facilitation.

Paideia Seminar

Conceptualized by Mortimer Adler (1982), the Paideia Seminar is an approach that seeks to help students participate in "a collaborative, intellectual dialogue facilitated with open-ended questions about a text" (Adler, 1982, p. 29). Paideia researchers provide a set of facilitator recommendations (Adler, 1982; Billings & Fitzgerald, 2002; Billings & Roberts, 2006), as illustrated bellow:

> …the teacher's role is to be a dialogue facilitator. Her practices should include asking only a few planned and discussion-prompted, open-ended questions designed to promote students' thinking and critique rather than to see if students grasp the teacher's point; refraining from making statements and evaluating student comments; avoiding fixed eye contact with any speaker; mapping discussion to keep track of student participation; and generally encouraging students to create an intellectual and civil discussion (Billings & Fitzgerald, 2002, p. 910-911).

The recommendations here take a very common form found in the Paideia literature (Adler, 1982; Billings & Roberts, 2006; Holden & Bunte, 1995). They identify general rules and guidelines for approaching the engagement and, for the most part, cohere with

the general features of dialogue identified in Chapter 1. Unfortunately, they lack specific

direction for what counts as a quality facilitative move in a given discussion. There is

also no attention paid to how those moves can contribute to the quality of the group

argument.

There have been a number of empirical studies focusing on the use of the Paideia

Seminar with students (Billings, 1999; Billings & Fitzgerald, 2002; Davies & Sinclair,

2013, 2014; Mangrum, 2010; Billings & Roberts, 2006), with only few focusing directly

on teacher practice. For example, Billings and Fitzgerald (2002) sought to examine the

practice of one teacher "highly committed to conducting Paideia Seminars" (p. 916) in

her attempts to apply the Paideia approach. The authors chose to focus on the general

features and kinds of talk the teacher and her students used (2002). The researchers were

able to make claims as to whether the teacher was engaging with Paideia principles.

However, they did not analyze what strategies worked better and when. Further, this and

other studies (Billings & Roberts, 2006; Holden & Bunte, 1995) did not examine the

impact of teacher facilitation on argument quality.

Philosophy for Children

Another approach to discussion focused on the development of arguments is

Philosophy for Children (P4C) (Lipman, 1981, 2003; Lipman & Sharp, 1978). P4C

advocates for the development of a Community of Inquiry (CI/CoI). Communities of

Inquiry are intentional communities, often consisting of the students within a classroom,

who regularly engage in *inquiry dialogue*. In P4C the dialogues are about philosophical

questions or concepts. Additionally the CI regularly reflects, as a group, on the forms and

rules of their engagement and revises them to meet its goals - where the goal is for "participants to arrive at one or more *reasonable*, *philosophical judgments* regarding the questions or issues that occasioned the dialogue" (Gregory, 2007, p. 161). The idea of a CI is widely attributed to Charles Sanders Peirce (1877) and was conceptualized as a pedagogical approach by Matthew Lipman as part of the P4C program in 1968 (Lipman, 2008). The CI reflects a constructivist epistemology to frame the ways which a group engages in *inquiry dialogue* (Gregory, 2002). The constructivist nature of the engagement prioritizes the inclusion of varied and unique perspectives to reach a reasonable conclusion. Pedagogical literature on P4C practice identifies lists of moves, general principles, instructional sequences and practical recommendations (Gregory, 2007; Kennedy, 2013; Lipman, Sharp & Oscanyan, 1980; Splitter & Sharp, 1995). For example in her *Letter to a Novice Teacher: Teaching Harry Stottlemeier's Discovery* (the earliest P4C curriculum novel), Sharp (1992) offers lists of questions that facilitators should ask themselves in order to assess their practice. A few examples are:

- Are students giving good reasons for their views?

- Who is doing the talking?

- Do the students listen to one another and build upon each other's ideas?

- Are students becoming more tentative in their knowledge claims? (p. 168-169).

Sharp also provides a description of the facilitator as someone who "doesn't think she knows it all, really loves ideas, respects students as persons, takes what they have to say seriously and demands logical rigor of them" (p. 169). Sharp and Splitter (1995)

discuss the value of shared responsibility, the necessity of "substantive" open questions and the encouragement of student-to-student interaction as a means to, "provide a doorway for children to enter into the realms of an inquiry which is, to a large extent, in their own hands" (p. 141). Such principles, moves and normative attitudes can be informative and inspiring for novice facilitators. Yet, they remain too general to guide specific interventions within a discussion in a way that makes teacher contributions clear. There is also no expressed connection between these recommendations and argument quality, which is the focus of my study.

There is a considerable amount of pedagogical and philosophical material published on Philosophy for Children (e.g., Fisher, 2001; Gregory, 2003, 2007; Jenkins, 1986; Kyle, 1983; Lipman, Sharp & Oscanyan, 1980; Splitter & Sharp, 1996). These materials offer intelligent and instructive ways to understand the practice of P4C as a systematic approach to classroom inquiry (Gregory, 2007), discuss the dispositions and attitudes of the facilitator in a CI (Kennedy, 2004), and make practical recommendations for addressing various aspects of the practice (Lipman, Sharp & Oscanyan, 1980; Splitter & Sharp, 1996). These materials can be invaluable to the development of a facilitator.

There are also a significant amount of empirical research studies on the P4C approach (e.g. Fields, 1995; Green, Condy & Chigona, 2012; Kyle, 1983, 1987; Lipman & Bierman, 1970; Niklasson, Ohlsson, & Ringborg, 1996; Sprod, 1998: Terry, 1988; Williams, 1993; Yeazell, 1981), although this research has been met with some criticism (for review and critique, see García-Moriyón, Rebollo & Colom, 2004; Trickey & Topping, 2004; Reznitskaya, 2004). For example, Reznitskaya (2004) points out that:

Many empirical investigations of P4C present largely unsystematic reflections on the goals and practices of the practice, typically supported with exemplary excerpts from discussions and quotes from students and teachers (e.g., Berrian, 1984; Fisher, 2001; Gordon, 1983; Jenkins, 1986; Kyle, 1983; Leeuw & Mostert, 1987). While interesting and thought-provoking, these studies are essentially anecdotal accounts, as they do not follow and/or report a thorough, planned, methodical process of data collection, analysis, and interpretation. (p. 4).

In one of the studies reviewed by Reznitskaya (2004), Niklasson, Ohlsson & Ringborg (1996), used teacher notes on their own philosophy session to draw conclusions about learning outcomes (e.g. a firm understanding of justice) and skill development (e.g. weakness and strength of intuition, more of a feel for philosophy) that were difficult to measure. No clear theory or method was articulated for how the researchers made such assessments. The authors also failed to describe a systematic approach to how the notes were taken or analyzed.

There are several studies of P4C that have looked systematically at the role of the facilitator as part of the analysis (Gillies, Nichols, Burgh & Haynes, 2012; Kovalainen & Kumpulainen, 2005; Kovalainen, Kumpulainen & Vasama, 2001; Reznitskaya, Glina, Carolan, Michaud, Rogers & Sequeira, 2012). Reznitskaya et al. (2012) found that facilitators of *inquiry dialogue* speak less and ask questions that "serve multiple functions: to clarify student thinking (e.g., *So, we choose the age to be fair, then?*), to introduce new perspectives (e.g., . . .*and isn't the alternative true?*), and to position the ideas of group members in relation to each other (e.g., *So, you're agreeing with Ann?*) (p.

299). In another study of teacher facilitation during P4C sessions, Kovalainen, Kumpulainen, & Vasama (2001) were able to identify four modes of discourse engaged in by the facilitator, namely evocative (e.g. getting students to contribute and take positions), facilitative (e.g. restating student offerings and helping them to connect to others), collective (e.g. reminding of the norms of participation, getting students to take responsibility for the process) and appreciative (e.g., valuing contributions, taking care of the needs of individual participants). Examples of teacher statements are presented for each mode. Unfortunately, neither study seeks to establish the impact of teacher's practices or modes of practice on argument quality. In other words, although researchers looked for the frequency of certain moves, they didn't examine connections between the use of the moves and the rigor of group argumentation that results. In my study, I examined the modes and relevant questioning strategies in connection to argumentation quality.

Collaborative Reasoning

Yet another approach focused on supporting student argumentation is Collaborative Reasoning. Developed by researchers at the Center for the Study of Reading at the University of Illinois at Urbana-Champaign (Anderson, Chinn, & Chang, 1997; Anderson, Chinn, Waggoner & Nguyen, 1998), CR, "is an open-format, peer-led approach to discussion intended to improve the quality of classroom talk, to stimulate critical reading and thinking, and to be personally engaging" (Lin et al., 2012, p. 1430). As is the case with the P4C and Paideia literature, guidance for the actual facilitation of CR discussions remains general. For example Waggoner, Chinn, Yi & Anderson (1995)

identify seven instructional strategies or moves that teachers can utilize during CR sessions:

- Prompting: Ask students for a position, a reason, evidence, or evaluation.

- Modeling: Demonstrate the reasoning process by thinking out loud in front of the students.

- Asking for clarification: Ask students to clarify what they mean.

- Challenging: Challenge the students with ideas they haven't thought of yet.

- Encouraging: Encourage the students by acknowledging and praising progress in thinking.

- Summing up: Periodically sum up what students have said.

- Fostering independence: A major long-term goal is to get students to take as much of the responsibility as possible for carrying out the discussions (pp. 584-585).

The Collaborative Reasoning Handbook (2011) does provide specific advice by suggesting when to make a particular move. One example of a suggested time to intervene is: "When students are making unwarranted inferences" (p 23). Additional information on the ways in which to determine when an unwarranted inference is being made and how to address it would be helpful. As Anderson et al. (1997) has shown us, within a given argument, some unwarranted inferences may be benign or irrelevant to the development of the central argument, while other moves might be more important to the quality of the argument. To become effective facilitators of dialogue, teachers need more than general principles and lists of moves. They need a clear understanding of how those

moves contribute to the development of an argument, under what contexts they do so and why. Unfortunately, there is little empirically supported knowledge about the contributions of facilitators that can help to inform future practitioners.

The research on Collaborative Reasoning is extensive, in large part due to the efforts of The Center for the Study of Reading. Researchers have studied CR to examine transfer of knowledge from dialogic discussions to individual tasks and new contexts (Dong, Anderson, Kim, & Li, 2008; Kim, 2001; Reznitskaya, Anderson & Kuo, 2007; Reznitskaya et al., 2001), to represent patterns of student reasoning and participation (Anderson et al., 1998; Anderson, Nguyen-Jahiel, McNurlen, Archodidou, Kim, Reznitskaya, Tillmanns & Gilbert, 2001; Li, Anderson, Nguyen-Jahiel, Dong, Archodidou, Kim, et al., 2007) and to analyze for indicators of argument quality (Anderson, Chinn, Chang, Waggoner & Yi, 1997; Kuo, Reznitskaya, Anderson, Kim, Nguyen, Clark, et al., 2007). Few studies have also focused on teacher facilitation (Jadallah, Anderson, Nguyen-Jahiel, Miller, Kim, Kuo, Dong & Wu, 2010; Nguyen-Jahiel, Anderson, Waggoner & Rowel, 2007). For example, in their study, Jadallah et al. (2010) applied microgentic methods to analyze 30 discussions conducted in one fourth-grade classroom. Each teacher intervention was coded and categorized according to moves recommended in a CR training program she attended (e.g., prompting for the use of evidence, prompts for clarification and challenges). After the teacher moves were coded, the researcher coded student moves that resulted in response to specific teacher moves, thus establishing a connection between student and teacher moves. The researchers then applied statistical models to establish the frequency at which the teacher

moves encouraged student responses. The analysis conducted by Jadallah et al. (2010) allowed the researchers to conclude that specific teacher moves illicit long sequences of corresponding kinds of children's talk. Although student and teacher talk in this study was not compared to the quality of the produced arguments, the analytical methods used by Jadallah et al. (2010) could easily be adopted for such a comparison. For example, prompts for key *Argument Features* could be connected with children's' use of those features. This type of analysis proved to be useful in the current study.

The numerous studies from the three approaches explored so far provide a wealth of knowledge concerning the features, principles and outcomes of *inquiry dialogue*. Unfortunately, few of the studies cited to this point present an analysis of how or if the teacher contributed to the development of the arguments constructed by participants. Some studies tend to represent reflections from skilled practitioners or generalizations drawn from anecdotal evidence rather than a methodological, systematic examination of student discussions or teacher facilitation (e.g., Haynes & Murris, 2011; Kyle, 1983; Lim, 1993). Further, in instances where teacher facilitation is being studied methodically, there is little information that a teacher can use to inform her decisions concerning *when* to make suggested interventions and how they relate to the quality of student arguments. This represents a significant weakness in the research if we are to improve teacher ability to support quality argumentation during *inquiry dialogue*.

Accountable Talk

In their review of dialogue-intensive pedagogies, Soter et al., (2008) excluded a more general framework that is conceptually aligned with *inquiry dialogue*, called

Accountable Talk (AT) (Michaels, O'Connor & Resnick, 2008; Michaels, O'Connor, Hall & Resnick, 2002). In a body of work conducted across two decades, researchers have sought to understand how the norms and practices of AT can be established in classrooms (O'Connor & Michaels, 1993,1996; Resnick, Michaels & O'Connor, 2010). According to Michaels, O'Connor & Resnick (2010), AT is evaluated according to 3 dimensions:

- Accountability to the community, where the focus is on listening to an building upon each other's views

- Accountability to knowledge, where the concern is that views are established with support from existing facts and accessible information and texts

- Accountability to accepted standards of reasoning, where the focus is on the logical structure and elements of the views being established (2008).

Within the AT literature, teacher facilitation has been analyzed according to "moves" used by teachers and students that are understood as serving different functions within a given *inquiry dialogue* (Resnick, Michaels & O'Connor, 2010; Michaels and O'Connor, in press). Michaels & O'Connor (in press) were able to identify a set of recurring moves that "seemed to take the conversation from recitation to reasoning, opening up the conversation, helping students listen carefully to one another, and supporting them as they built on and critiqued the ideas and arguments of their peers" (p 3). Similar to the approaches reviewed earlier, typical moves in AT are often compiled and categorized as lists of things teachers and students can or should say (Wolf, Crosson & Resnick, 2006). In some cases, the moves are also categorized according to the three

central AT criteria of accountability (Michaels, O'Connor & Resnick, 2007). As in other approaches, connections between the use of moves and the quality of student arguments are not discussed.

In a number of studies, researchers within AT focused explicitly on teacher interventions as part of their analysis (O'Connor & Michaels, 1993; O'Connor, 2001; Talk Science, 2011; Wolf, Crosson & Resnick, 2006) For example, Wolf, Crosson and Resnick, (2006) focused on the quality of teacher and student talk in a study involving 21 teachers across grades 1 through 8. In their study the researchers sought to "distill the characteristics of the teacher's talk moves that facilitate a rigorous discussion which reinforces students' understanding of a challenging text or concept and critical thinking" (p. 3-4). Results show a significant relationship between AT moves and lesson rigor. The researchers also looked at specific instances of the different types of talk moves to evaluate them for quality. Moves were examined and labeled "weak" or "strong" based upon how effectively the move accomplished its goal (e.g., getting students to build on each other's ideas, using evidence to support their claims, drawing logical inferences). Unfortunately, these moves were analyzed independently of the context of a given argument, leaving their contribution to the quality of the constructed arguments unclear.

The analytic approach used by Wolf, Crosson & Resnick (2006) does provide helpful strategies for my own study. Michaels and O'Connor (in press) presented a compelling argument for the use of individual moves (teacher and student) as a unit of analysis:

We focus on the utterance for both theoretical and pragmatic reasons. Along with many others, we assume that utterance types have interactional, identity-related, and cognitive or intellectual consequences (Sfard, 2008; Ford & Forman, 2006; Wells, 2007; Haroutunian-Gordon, 2009; Mayer, 2012). Thus when we look at utterances in classrooms, those of teachers or students, we note:

- An utterance has a particular interactional function, both local and global, in terms of its positioning of the previous and the next speaker, and in terms of the structure of the conversation overall.

- An utterance may have a particular socializing or intellectual function, such as helping students to externalize their thinking, listen to others, dig deeper into their reasoning with evidence, or reason with the ideas of others.

- An utterance positions specific academic content, and makes certain reasoning experiences available.

- An utterance has a particular linguistic form, which may have major consequences for the functions listed above.

Because of the semiotic potential of the utterance, it makes sense to attend to it (in press).

As this quote suggests, utterances can be understood as instances of more general talk moves that serve certain *functions* within a dialogue. Other researchers have also categorized teacher interventions according to the intended and/or resulting function of the intervention (e.g., Alvermann & Hayes, 1989; Alvermann, O'Brien & Dillon, 1990; Jadallah et al., 2010). For example, in the study cited earlier by Jadallah et al. (2010),

teacher prompts and student responses were coded according to specific dialogic functions (e.g., prompting for evidence and use of evidence) and then analyzed statistically for correlation. In my study, teacher utterances were categorized in terms of the function they serve in the development of the group argument. I then looked for such utterances in connection with instances of quality arguments present in the data.

To conclude, theory and research point to the potential of *inquiry dialogue* for educating a new generation of citizens and thinkers (e.g., Hadot, 2002; Gregory & Laverty, 2009; Kuhn & Crowell, 2011; Mercer, Wegerif & Dawes, 1999; Sternberg, 1999, 2003). There also exists a number of established pedagogical approaches and frameworks that operationalize the principles and norms of *inquiry dialogue* (Adler, 1982; Anderson, Chinn & Chang, 1997; Lipman, Sharp & Oscanyan, 1980; Michaels, O'Connor, Hall & Resnick, 2002). These approaches identify typical teacher moves, categorized according to the aspects of *inquiry dialogue* they support. The literature provides evidence of the value of these moves for shaping and nurturing *inquiry dialogue* in classrooms (e.g., Billings & Fitzgerald, 2002; Reznitskaya et al., 2012; Wolf, Crosson & Resnick, 2006). The literature also discusses theoretically grounded and widely used analytic frameworks (Toulmin, 1958; Walton, 1998, 2008) helpful for understanding the argumentation features and products of *inquiry dialogue* (e.g., Chambliss & Murphy, 2002; Duschl, 2008; Ebenezer & Puvirajah, 2005; Erduran, Simon, & Osborne, 2004; Jiménez-Aleixandre et al., 2000).

Despite the strong theoretical support for the use of *inquiry dialogue* to improve students' argument skills, there is a lack of studies connecting teacher moves to argument

quality. Thus, while the literature on facilitating *inquiry dialogue* provides an informed

starting point, more research focused on the content and quality of student arguments is

needed. Given the effective use of teacher moves across multiple pedagogical approaches

and analytic frameworks, it seems reasonable to utilize moves as a unit of analysis in the

present study. Through a close analysis of specific teacher moves during instances of

quality argumentation, a clearer picture of how those moves contributed to the quality

should emerge. This will go a long way in helping us to better understand and evaluate

existing approaches to facilitation as it relates to quality argumentation.

CHAPTER 3 - METHODOLOGY

In this chapter, I first describe the data sources that were used during analysis. I then present the phases I used during the Analysis of Discussion Transcripts and the Analysis of Interview Transcripts. Decisions made during analysis are described and examples are included to illustrate those decisions.

Data Sources

The data for this study comes from two sources:

1. Video-recorded and transcribed classroom discussions, collected as part of a previous research study on the use of *inquiry dialogue* in elementary school language arts classrooms. The study was conducted by Reznitskaya et al., (2012) and will be described below.

2. Interviews from three experienced facilitators who participated in Reznitskaya et al. (2012) study. The facilitators were interviewed in the summer of 2014.

Previously Collected Data

Reznitskaya et al. (2012) conducted a quasi-experimental study that used Philosophy for Children to examine its impact on argumentation development of elementary school children. In the study 12, fifth grade classrooms were randomly assigned to one of two treatment conditions:

1. "Philosophy for children (P4C). This was an experimental condition, where literature discussions were conducted by visiting teachers, experienced in P4C pedagogy. The regular teacher remained in the classroom, but was not involved in P4C discussions.

2. Regular Instruction (REG). In this comparison condition, literature discussions were conducted by regular classroom teachers using their typical teaching materials and methods" (Reznitskaya et al., 2012, p. 292).

Participants. In Reznitskaya et al. (2012) study participants were teachers and students from two public school districts in northern New Jersey. The school districts represent a predominately white population with median household earnings above the national average. Individual class sizes ranged from 17 to 28 students with an average of 22 children in each.

The six teachers in the control condition were regular classroom teachers using methods and materials consistent with their everyday practices. Teachers in the treatment condition included three P4C practitioners with extensive experience conducting P4C sessions with primary school children:

All P4C teachers were European–Americans. Two were advanced doctoral students, working towards their Ed.D.s in Pedagogy and Philosophy. Both had more than 5 years of P4C teaching experience. The third P4C facilitator was a full professor of education with 18 years of practice with P4C pedagogy. All P4C teachers were judged by their peers to be skilled at implementing P4C pedagogy (Reznitskaya et al., 2012, p. 292).

Design. The original study was conducted in three phases. In phase one, the researchers obtained demographic data and administered pretests, including measures of reading comprehension and written argumentation.

During phase two, teachers and students in both treatment conditions (fifth grade ELA classrooms) met once a week for 12 weeks to participate in a 40-minute discussion of the assigned readings. In the six REG classrooms, teachers conducted whole-class discussions using a variety of instructional techniques that they typically use during language arts instruction. In six P4C classrooms, three experienced facilitators engaged students in *inquiry dialogue* using strategies consistent with P4C pedagogy as outlined in the published literature (Lipman, Sharp & Oscanyan, 1980; Splitter & Sharp, 1995). Philosophical questions in P4C meet the criteria of being contestable and cognitively challenging, identified as a central component to classroom dialogue in Chapter 1. For purposes of this paper, I will refer to these questions as Big Questions.

The procedures for engaging in *inquiry dialogue* within the P4C approach are aimed at helping children to develop the capacity to come to a reasonable judgment or "to think for themselves" (Lipman, Sharp & Oscanyan, 1980). The students discuss a big question, often while sitting in a circle, with the goal of deciding what is most reasonable to believe or do in response to the question. The teacher's role is to support the intellectual work of the students by helping them to structure and clarify their efforts. According to Lipman and colleagues, supporting a philosophical dialogue involves a set of behaviors on the part of the facilitator. These include: eliciting views or opinions; helping students express themselves through clarification and restatement, explication of students views; interpretation; seeking consistency; requesting definitions; searching for assumptions; indicating fallacies; requesting reasons; asking students to say how they know; eliciting and examining alternatives (Lipman, Sharp & Oscanyan, 1980).

In the final phase of the original study, students from both treatment conditions performed three post-intervention tasks. These tasks measured students' argument skills when speaking, reading, and writing.

Analysis. Reznitskaya et al. (2012) selected and transcribed segments from the fifth, seventh and ninth, discussions in each classroom to get a comprehensive sample across different stages of development. The authors "chose to examine the middle 20 min because [they] wanted to capture more typical and substantive features of classroom talk" (Reznitskaya et al., 2012, p. 293). A total of thirty-six, 20-min discussion transcripts (three per classroom, 18 per treatment condition) were selected and teacher and student talk during class discussions was coded "in order to generate several numeric summaries of process variables" (Reznitskaya et al., 2012, p. 294).

Present Study

Discussion videos and related transcripts. The qualitative nature of this study lead me to use purposeful sampling (Merriam, 2009). In contrast to probability sampling that focuses on being able to generalize from the sample, purposeful sampling is based on the "assumption that the investigator wants to discover, understand and gain insight and therefore must select a sample from which the most can be learned" (Merriam, 2009, p. 77).

I drew my sample from the 18 treatment condition transcripts (described above) collected by Reznitskaya et al. (2012). These discussions represent 'information-rich' (Patton, 2002) cases that are relevant to the proposed research question based on the following reasons:

1. The discussions feature the essential elements of a dialogue-intensive engagement around text identified by prior research (Applebee et al., 2003; Nystrand, 1997; Soter et al., 2008).

2. The treatment condition of the study (Philosophy for Children) has been identified as having a critical analytic stance (Soter et al., 2008) that focuses on argument recognition and development.

3. The study enlisted three experienced facilitators who have extensive experience in P4C approach, including graduate study, publication of original theory or research, professional development work with other practitioners and multiple years of facilitation experience with a wide variety of students in diverse contexts (Reznitskaya et al., 2012).

Because only three experienced facilitators were involved in the study, I used the entire population. I analyzed discussion transcripts from each of the facilitators starting with the two highest-rated transcripts for each, as indicated by a measure of dialogic quality called Dialogic Inquiry Tool. The DIT is an observational rating scale designed to evaluate the quality of teacher facilitation during an *inquiry dialogue*. Using the DIT, a teacher or researcher is able to assess facilitation and student participation in relation to essential features of *inquiry dialogue* across a 6-point scale from monologic, to highly dialogic. Although the DIT does not directly measure argument quality, it is the best available tool for assessing the quality of classroom dialogue and effectively meets the purposes of this study. The DIT has been validated and has evidence to support its validity and reliability (Reznitskaya, et al., 2012; Reznitskaya, Oyler & Glina, under

review). I identified all *argument threads* within each transcript, resulting in at least three for each facilitator. *Argument threads* were then coded for *core argument features* and facilitator moves. Facilitator moves related to each argument thread were further analyzed via facilitator interviews.

Interviews. The interview protocol was specifically designed to explore findings from the Analysis of Discussion Transcripts. The questions also aimed at further examining the underlying beliefs and commitments that influenced facilitator decisions. Previous research suggests that "identifying the guiding principles that teachers articulate in relation to their classroom work can complement observational studies by enabling research to go beyond description towards the understanding and explanation of teacher action" (Breen, et al, 2011, p.471). The literature also offers a number of methodological approaches to examine teacher beliefs, including questionnaires to identify beliefs (Isikoglu, Basturk, and Karaca, 2009; Macugay and Bernardo, 2013) and teacher interviews (Peterson, 1992; Breen et al., 2001; Yue'e & Yunzhang, 2011).

The interviews used in this study were semi-structured (Merriam, 2009), but followed a general protocol, generated during the analysis of the transcripts (see appendix A). The interview protocol had two sections. The first section, called "General Beliefs and Practices," included general questions aimed at exploring the facilitator's beliefs concerning *inquiry dialogue*, the practice of facilitation, and the use of argumentation in facilitation. In addition to these general features, questions were designed to explore each of the findings and interpretations, discussed in Chapter 4.

The second section of the interview involved a shared review of the videos and transcripts. I termed this section "Review of Facilitation." The facilitators were provided a transcript from each of the discussions, covering the segments reviewed. During this stage of the interview, the facilitators were asked to comment on what they heard and were responding to during the discussions. They were also asked to explain specific *facilitator moves* they made.

Interviews ranged from 55 minutes, to 2 hours and 16 minutes. I conducted two of the interviews. As one of the facilitators, I used a second interviewer, Dr. Alina Reznitskaya, who has a background in studying student argumentation, for my own interview. The second interviewer conducted the initial study, discussed in the section on Previously Collected Data, and was therefore familiar with the data. The second interviewer also served as an advisor on this study and was aware of the findings and interpretations generated during the analysis of transcripts. All interviews were transcribed and imported into Nvivo for further analysis.

Researcher Perspective

My own views on dialogic inquiry are largely a result of my background, training and commitment to both P4C and Philosophy. I was one of the facilitators (I will use facilitator in place of teacher moving forward) in the original study and was trained in part by one of the other participating facilitators. As a P4C advocate, I view dialogic inquiry as inherently philosophical and am committed to it as a practice for helping participants make reasoned, collaborative judgments about issues that are central to their lived experience. I did my undergraduate work in Philosophy, in a program that was

primarily analytic in focus. I, therefore, bring a strong commitment to the use of formal and informal logic as a tool for understanding group argumentation. Although I recognize this background can serve as a limitation to my analysis, I also believe that my familiarity with philosophy, and experience in conducting P4C sessions contribute to my ability to see aspects of the practice that others may miss.

Overview of Analysis

The analysis of data progressed from the Analysis of the Discussion Transcripts, to the development of the Facilitator Interview Protocol and culminated in the Analysis of Interview Transcripts. This process is outlined in Figure 1 below.

Analyzing Discussion Transcripts
- Tracking argument threads,
- Identifying core argument features,
- Evaluating argumentation quality within each thread,
- Coding facilitator moves relevant to the instances of quality

Establishing Facilitator Interview Protocol
- Desiging questions to explore findings from the Analysis of Discussion Transcripts,
- Designing questions to probe further into interpretations from the Analysis of Discussion Transcripts, associated with facilitator beliefs and practices

Analyzing Interview Transcripts
- Conducting focused coding of the entire data set to identify responses relevant to the key findings and principles,
- Conducting open coding of the entire data set to identify recurring themes that align with or contradict, the key principles and findings used in step one.

Figure 1. Outline of the analysis process.

Analysis of Discussion Transcripts

The Analysis of Discussion Transcripts occurred in four distinct phases:

Phase 1: Tracking argument threads,

Phase 2: Identifying core argument features,

Phase 3: Evaluating argumentation quality within each thread,

Phase 4: Coding facilitator moves relevant to the instances of quality.

I conducted the analysis using Nvivo software (QSR, 2013) designed for use with transcripts and non-numeric data (http://www.qsrinternational.com/products_nvivo.aspx). The coding followed a Quantitative Content Analysis (QCA) approach to analysis (Roberts, 2000) that involves segmenting and coding content into categories. I used the categories (e.g., *argument threads, core argument features, facilitator moves*) to make comparisons and identify areas to be explored further in facilitator interviews.

Analysis of Discussion Transcripts Phase 1: Tracking Argument Threads

In this section, I will explain why and how I analyzed sequences of talk turns into *argument threads.* After discussing the value of *argument threads* for distinguishing *core argument features*, I describe how I distinguished a*rgument threads* and then provide a few examples. I indicate my role as facilitator with the title "Author" instead of "Facilitator."

The literature on argument analysis points to difficulties in interpreting core argument features, such as distinguishing warrants from claims (see reviews by Nielsen, 2011 and Nussbaum, 2011 for a thorough analysis). For example Kelly, Drucker and Chen (1998) characterize identifying argument elements, such as Data, Claim and Warrant, as a "subtle affair" (p. 856). In response to the subtleties of making these

distinctions, Kelly et al. (1998) chose to look at the specific argument that a student was making within the broader context of the conversation. Kelly et al. (1998) looked forward and backward in the discussion to contextualize the claims being made by the students. Their focus was on clarifying the particular point being made and how it relates to other statements in the discussion.

Similar to Kelly et al. (1998), I looked at individual student turns as they related to the more general dialogic context. I tried to capture this context by organizing the dialogues into *arguments threads*. As stated in Chapter 1, an *argument thread* is a sequence of *core argument features* evoked to respond to a contestable issue or question. I used a modified version of the standard Toulmin model applied in previous research (e.g., Chambliss & Murphy, 1995; Erduran, Simon & Osborne, 2004) to code for threads and thread components.

Argument threads can be understood as constellations of arguments and sub-arguments, in support of claims, aimed at a common question. I came up with the concept of "argument thread" as a way of capturing the various strands of argumentation that often emerge during an *inquiry dialogue*. I identified a*rgument threads* by evaluating turns and sequences of turns for relevance to the *big question*. I asked a common set of questions during analysis to determine threads: *Can what is being said serve as a response to the big question? Does the turn support a claim evoked in response to the big question? Is the group working toward an answer to the same big question? Are they doing so over multiple turns?* These questions helped me to identify *argument threads* and notice when there was a shift in the thread. Staying on a given *argument thread* for

extended periods of time emerged as an important theme in my analysis and will be discussed later. Below is an example of a lengthy argument thread representing only 23 turns in an argument thread that extended across 119 turns, without a shift in the thread. The example is from an *inquiry dialogue* on the question, *What is intelligence?* Pseudonyms are used throughout this paper:

Miles: I think intelligence is like, being only smart, smart as Kelly said, but smart enough to solve problems. Like, you could be a scientist who needs to solve problems, with like… Let's say you need the formula for something and you have to solve the problem making that. Or you're a kid on the blacktop and there's a fight going on or something in the street and you might want to try to make a solution to figure that out. OK, Mason.

Mason: I agree with both Kelly and Miles. And, I also think intelligence is, um, a well-educated person.

Facilitator 2, Discussion 1: How does that connect with Kelly's and Miles'?

Mason: By being smart. I agree and disagree.

Facilitator 2, D1:   But you said "well educated" first. I'm not quite sure what you meant.

Facilitator 2, D1:   Could you clarify what you mean by "well educated" Mason?

Amy: Um, I think he meant that he agreed with Miles and Kelly, and then he said a few things also.

Facilitator 2, D1:   Right, but I'm just wondering how what he thinks connects with-

Amy: It doesn't. He just said something different [rest inaudible]

Kelly: He said his definition of it...

Mason: I agree and I disagree so. (students talking)

Facilitator 2, D1: OK. So you're saying that a person cannot be intelligent unless they are educated.

Mason: Yes. Yes.

Facilitator 2, D1: Not just educated. A person- no one is intelligent who is not well educated.

Mason: Yes.

Kelly: OK.

Mason: Um, do I have to pick? Kelly

Students: Yes. Uh-huh. Yes. Over here.

Kelly: I disagree with Miles. I don't think intelligence is how you can solve problems, I think that's logic. Because logic is like, the way you- like logical reasoning in math, we have, um the way you can figure something out, out. I don't think that has to do with intelligence. And I agree with Mason that, um, being well educated has to do with intelligence, too, because I don't think- like, you can be smart without being well educated, but I don't think you can be intelligent.

Facilitator 2, D1: OK, so you're making a distinction between smart and intelligent. You're saying that they're different.

Kelly: Right.

Kelly: Yeah...Morgan

Morgan: Uh, I agree with Kelly but I disagree with Miles. If you're on a blacktop and you have a problem, it's just problem, it's just problem solving. It's not intelligence. You don't have to be intelligent to really to solve a problem. (Discussion 2007)

In the episode above we see students maintaining focus on the big question across multiple turns. They build upon each other's responses to the big question (e.g., *I agree with both Kelly and Miles. And I also think Intelligence is, um, a well-educated person).* They address each other's claims and offer alternatives without straying from the task at hand, which is to define the concept of intelligence (e.g., *I disagree with Miles. I don't think intelligence is how you can solve problems, I think that's logic*). The facilitator helps the students to maintain focus on the big question and to relate to each other's statements (e.g., *How does that connect with Kelly's and Miles'? OK, so you're making a distinction between smart and intelligent. You're saying that they're different*).

Maintaining this focus is an essential part of facilitation and will be discussed in Chapter 4. Of course, there is always a chance that the group could shift its focus to explore another question or one of the more specific statements generated in the inquiry. If the group takes up the new question or issue, then a new *argument thread* begins.

Argument threads function as an interpretive context for identifying argumentation structure and evaluating its quality. A shift in an argument thread, then, serves as a kind of reset of that context. The reset is necessary because the argument features coded one way in a given argument thread may be coded differently in a different thread. This is especially true for claims, which are then used to identify data and warrants (explained further in a later section). Thus, capturing a *shift in the argument thread* became an important task.

To identify *argument thread shifts* I asked two questions: *Does this statement aim at a big question that is different from the one that started the discussion? Has the focus of the discussion shifted to a different question for three or more turns?* Identifying when a shift actually occurred was also aided by some clear indicators, including shifts initiated and explicated by the facilitator. Here is an example of a shift initiated by the facilitator:

> Facilitator2, D2: …Actually, what I'd like to do- I'm going to step in here and ask that we actually start with a definition of privacy. Because we're all also assuming that what you mean by privacy, is the same as what I mean by privacy, so were that somebody from Indonesia, what they mean by privacy means the same thing as somebody from Brazil or somebody from the States, etc. (Discussion 2007)

In this instance of a shift, the facilitator calls for it and explains his motivation. Explicit calls like this made identifying shifts a simple task, but there were other indications of a shift in the argument thread. At times the facilitator identified an emerging shift and reinforced it:

> Gina: First of all, everyone votes. We just voted now. So why does it have to be on something big? And second of all, who says that 18 you're an adult. Why can't you be an adult when you're 12? Like, who made up this rule that when you're 18, you're an adult. I mean at restaurants, the kid's menu is 12 and under, usually, not 18 and younger.
>
> Facilitator 1 (Author), D2: Right, it's, so we're asking a question about when you become an adult or what makes an adult.
>
> Gina: Yeah.
>
> Facilitator 1 (Author), D2: So, what's an adult and when do you become one? [pause x 13s] So, what do we think? (Discussion 2007)

Here, I notice that a new question is emerging. I embrace the possible shift by restating it and soliciting thoughts about it. I commit to the request and provide sufficient "think-time" for students to respond before repeating the request. This continued attention helped to identify the shift.

At the beginning of my analysis, I anticipated that *argument thread shifts* would occur along with a change in the general topic of the discussion, but I found that *argument threads* could shift without a shift in the general topic. I therefore concluded that the *big question* was a better reference point for *argument threads* and *argument thread shifts*. The excerpt below represents a thread shift that is not a topical shift:

> Facilitator 3, D1: What if none of those reasons apply? What if we just want to put animals in the zoo for, just because we want to put animals to the zoo? Is it a good reason to just- why do we even have zoos? Like, I

don't know. Do we have zoos to protect animals or if we have zoos for

other reasons? Faye? (Discussion 2007)

Here the facilitator shifts the focus of the inquiry from a question of whether to put

animals in a zoo or leave them in the wild, to a question more specifically focusing on

why we have zoos. The general topic is still the same here, but the arguments constructed

after this shift will focus more narrowly on one aspect of the previous *argument thread*.

The shift in the argument thread makes arguments for leaving animals in the wild

irrelevant as it would not necessarily help answer the question, "Why have Zoos?" In my

subsequent analysis of the interviews with facilitators, they suggested they identify and

initiate *argument thread shifts* for specific pedagogical reasons. These will be discussed

in my Post-interview Interpretations.

The shift indicators and analysis questions identified in this section helped me to

maintain a sense of the context of the inquiry and, by extension, determine the arguments

being constructed. This in turn allowed for a more accurate identification of core

argument features.

Analysis of Discussion Transcripts Phase 2: Analysis of Core Argument Features

The use of argument threads contributed to my ability to code for other argument

features. In this section I will explain how the use of argument threads helped me to code

for core argument features and illustrate the different strategies I used to identify each

one. I coded for the following argument features in this study:

Table 2: Core argument features

Feature	Description	Example

Claim	A concluding statement in response to the big question. They answer the big question, rather than a question exploring a sub-topic.	"I think you should be 18 to vote." "I think intelligence is doing something, and how good that you can do it."
Warrant	Warrants are links between data and conclusions. They make data relevant to a claim or conclusion. For example: • All men are mortal (warrant) • Socrates is a man (data) • Socrates is mortal (conclusion)	"If you aren't mature then you shouldn't be able to vote." [Connects Maturity to Voting] "When you put them back in the wild they won't be able to survive." [Connects Returning to the wild to Survival)
Data	A statement that functions as a reason. They are about a single unit of consideration. Data, in conjunction with warrants, lead to a conclusion. For example: • All men are mortal (warrant) • Socrates is a man (data) • Socrates is mortal (conclusion) Data can be factual or non-factual, hypothetical or value based. It is their function that distinguishes them.	"The police lie so they can search you." "It would be hard to exclude them."
Challenge	An attempt to refute the acceptability of a data or a warrant.	[Initial Statement] "It hurts the animals" [Challenge] "You don't know that the animal is hurt by that." [Initial Statement] "If you're the police then you can barge in." [Challenge] "But even the police need permission."
Response to	Responses to challenge occur when a person directly addresses a challenge	"Well it's alive but it's not living in the same way as an animal because animals

challenge	to something they or another participant stated previously. The response is often a revision of the previous statement or provides additional information.	breathe."

In particular, *argument threads* were helpful in identifying *claims*. Within the

Toulmin (1958) model, claims are statements supported by reasons. In this study, I only

counted conclusions drawn in response to the *big question* as *claims*. *Claims* can be

difficult to distinguish from *data* (Erduran, Simon & Osborne., 2004; Kelly Drucker &

Chen, 1998). For example, in their study on student's construction of arguments that

oppose each other, Erduran, and colleagues (2004) present the following student

statement as a claim "Animals in zoos might be scared." (p. 928). In my analysis, this

statement would likely get coded as a *data* in service of a *claim* "We should not have

zoos". In a similar discussion from my study, I coded the following statement as a *data*

"In a zoo they just sit there." This is not surprising because *claims* and *data* are

interchangeable depending on how they are used in a specific argument.

In propositional logic, which serves as a foundation for argumentation, the

distinction between *claims* and *data* is one of function (Ehlers, 1976). Statements are

seen to have a possible truth value of either being true or false. This is the case with

claims, *data* and *warrants*. Both *claims* about zoos in the previous paragraph can either

be true or false. As such each can be the conclusion of an argument (a *claim*) or function

as support for a conclusion (*data*) in another argument. Said another way, any *claim* as a

statement of truth, can also serve as a *data* in a separate argument. Below are two

arguments where the bolded statement serves the separate functions:

Argument 1

>Warrant: If you aren't familiar with an environment then you might be
>
>>scared of it.
>
>Data: Animals aren't familiar with zoo environments
>
>Claim: Animals in zoos might be scared.

Argument 2

>Warrant: If an animal is scared of a place it is a bad place for it to be.
>
>Data: Animals in zoos might be scared.
>
>Claim: The zoo might be a bad place for animals to be.

Conway and Munson (2000) term the first bolded statement an "intermediate conclusion" which is used in a chain of argument to ultimately support a "final conclusion." The distinction between a *data* and a *claim* is therefore predicated by the context in which it is generated. This is one value of the *argument thread*. By framing the context as an *argument thread*, it becomes possible to determine whether the statement is functioning as a *claim* or is being used in support of one (*data*).

Argument threads contain multiple claims. For example, in an *inquiry dialogue* addressing the question "At what age should we be able to vote?" a number of *claims* were generated in response to the question:

Jamie: **(Claim 1) I think we should be able to vote at 18 cuz** *when you're 18 you are considered an adult… (data)*

Karl: **(Claim 2)** I don't think it should be at a certain age. **It should be**

when you know about politics and *you can be 10 years old and*

mature (data serving as a challenge).

Kim: **(Claim 3)** I think that you should be able to vote uh **like Jamie said,**

even may be a little younger. Because like, stuff like the president

everything. Everyone should have a say in that 'cause it's almost like,

it's everyone's country (data). And especially stuff for school.

Identifying *claims* in turn helped me to identify *data* as shown in the previous paragraph.

Claims are also essential for uncovering *warrants*.

　　　　Warrants, function in unison with *data* to help justify a conclusion or a *claim*.

Both *data* and *warrants* serve as premises in an argument that is constructed during a

discussion. Like *claims* and *data*, *warrants* have a possible truth value, but what

distinguishes *warrants* from *data* and *claims* is how they function within an argument.

The role of a *warrant* is to make the *data* relevant to the *claim* (or intermediate

conclusion).

　　　　Warrants can be tricky to classify (Kelly, Drucker & Chen, 1998), but are more

easily identified in reference to a *claim* because of their role in making the *data* relevant

to a *claim*/intermediate conclusion. Another way of saying this is that a *warrant* identifies

a connection between *data* and *claims* (or intermediate conclusions). The logical

relationship between *claims*, *warrants* and *data* had implications for how to analyze

them. By using *claims* as a reference point, which is similar to the use of *argument*

threads, a sequence of analysis emerged. Osbourne et al., (2004) came to similar

conclusions in their study of argumentation in school science. When analyzing

transcripts, the researchers first identified *claims* and then proceeded to identify,

> …what constitutes the data for the argument, which is often preceded by words
>
> such as 'because,' 'since,' or 'as.' The warrant, if present, was then the phrase or
>
> substance of the discourse that relates the data to the claim (p. 1006).

In addition to a sequence of steps similar to the one used by Osbourne et al. (2004), I

asked the following questions to help identify *warrants*: *Is the statement presented in, or*

can it be easily converted into, an "if…then…" format? Does this statement focus on how

some fact, value or information (data) is relevant to a claim (or intermediate

conclusion)? Does this statement justify an inferential move?

In contrast to what the literature says (Duschl, 2007; Erduran, et al. 2004;

Jiménez-Aleixandre et al. 2000; Kelly et al., 1998), *warrants* were not always difficult to

identify. In many cases they followed a standard "if…then…" structure, although "then"

was not always explicitly stated. There were numerous instances of this structure in the

data I explored, with a few examples below. The first example represents a warrant that

was also coded as a *challenge* to the claim: *You should be able to vote for things that*

impact you regardless of age- in school for example.

> Warrant: I disagree because **if** you're too young you might not be able to handle
>
> the pressure so…

Here the *warrant* identifies a link between age and dealing with pressure. In this case,

there is an additional and unstated *warrant* that completes the argument by linking

pressure to voting. By including the unstated *warrant*, the argument would go as follows.

Warrant (stated): If you're too young you might not be able to handle the pressure.

Warrant (unstated): If you can't handle the pressure you shouldn't be able to vote.

Intermediate conclusion (unstated): If you're too young you shouldn't be able to vote.

The unstated conclusion of this argument represents a clear *challenge* to the initial *claim* that all people should be able to vote regardless of age. Later in this same discussion the students identify 6 as the cut off age for voting (what counts as too young) and another *warrant* draws out the implications for pre-school children:

Warrant: So **if** they're in pre-school, they wouldn't be able to vote either because they'd be either, they'd be younger than six years old.

Here the student is constructing a *warrant* associated with the same *claim* as the excerpt above. He uses the statements from his peers to point out the implications for preschoolers.

Having a clear connection to a *claim* or intermediate conclusion was an essential indicator of a *warrant*. Here are a few warrants that represent a connection to a *claim* or intermediate conclusion but do not come in the "if…then…" form.

Claim (stated): Being **well educated** is part of being **intelligent**

Warrant (stated): …being well educated has to do with intelligence, too, like, you **can be smart without being well educated**, but **I don't think you can be intelligent**. (without being well educated)

The *warrant* is stated in negative terms where the absence of education entails an absence of intelligence. The link is made clearer when you add the unstated parts of the argument in the form of a syllogism:

Warrant (**stated**):   If you aren't well educated you can't be intelligent

Data (**unstated**):   You aren't well educated

Conclusion (**unstated**):   You aren't intelligent.

Here the stated *warrant* articulates how the *data* (well-educated) is relevant to intelligence. It sets the data up as a necessary condition for intelligence. The *warrant* allows one to draw a conclusion (or make a *claim*) about intelligence depending on the presence or lack of a good education. When a student or facilitator presents or explains the relationship between these features (*warrants*, *data* and *claims*/intermediate conclusions) it is easier to apply the code. When this is not explicitly done, I was left to look for other context cues within the thread to better ascertain how the *warrant* was being used.

Challenges are a key feature used to distinguish quality argumentation within the literature (Clark & Sampson, 2008; Erduran et al. 2004; Keefer, Zeitz & Resnick, 2000; Means & Voss 1996; Osborne, Erduran & Simon, 2004; Sadler & Fowler, 2006; Zohar & Nemet, 2002). As mentioned earlier, each of the features discussed so far has a possible truth value. *Claims*, *data* and *warrants* can therefore all be *challenged* for their truth or acceptability. I did not code counter-claims as *challenges*. Even though they stand in opposition to another claim, they are not aimed at refuting the truth or acceptability of a claim. Counter-claims were coded as a second (or third or fourth) claim. Initially

challenges to data and *challenges to warrants* were coded separately as they represent different kinds of *challenges*. A *challenge to a data* is a question about the truth of the statement it presents. A *challenge to a warrant* is a *challenge* to the inferential move the *warrant* justifies. In order to *challenge data* one must have some familiarity with the subject matter the inquiry is exploring, including relevant information and perspectives. To *challenge a warrant* on the other hand, one also needs to have a sense of what counts as a logical inference. One could argue that a challenge to a warrant is a higher quality move in terms of argumentation skill, but this has not been established through research and is not accounted for in the argument quality framework used in this study.

To identify challenges I asked the following questions: Is the student seeking to refute a previous statement? At which student statement is this challenge directed? Does this statement challenge a data or a warrant? Connecting the challenge to the related statement helped to distinguish whether the challenge referred to the data or the warrant. In many cases, students use terms or phrases from the statement they are targeting with their challenge. For example:

Johan: He's saying that if you're **intelligent at sports**- if you're good at
              baseball, you're intelligent in it? You're smart at it.

Gina: Uh, I don't think you can say **intelligent at sports**.

This helped me to see the connections between the statements more clearly and, by extension, facilitated the identification of the type of *challenge* used by participants, as illustrated below:

Miles: Well, like what Mason's saying, that you don't **need intelligence** to

solve problems, I think you really do 'cause if you don't have

intelligence to solve a problem on the blacktop, you'll wind up with a

black eye and a bloody nose. It's just, it's…- [*warrant* – If no

intelligence then black eye]

Kelly: But you **need** logic, **not intelligence**. [*challenge* to *warrant*]

The redundancy of language across statements was especially helpful when the *challenge*

and initial statement were separated by a significant amount of time. For example:

[12:59.40] Nate: I think we should be able to vote at 18 cuz when you're **18 you**

are considered an adult [*claim*, *warrant*]

[19:02.00] Gina: …who says that **18 you're an adult**. Why can't you be an adult

when you're 12? Like, who made up this rule that when you're 18,

you're an adult. I mean at restaurants, the kid's menu is 12 and under

usually, not 18 and younger. [*challenge* to *warrant*]

At times the facilitator appears to help initiate a *challenge* by highlighting specific

terms in a participant statement. I labeled this facilitation move *Distilling* (discussed later

in this chapter). The highlighted statement is then taken up within the *challenge*:

Aaron: Yeah, because it would be hard to like, exclude them from everybody

else and it wouldn't be **fair** to them. [*warrant* – If exclude then not

fair]

Facilitator 1 (Author), D2:   Hmm. Okay. So we, we choose an age just to be **fair**

then. [*distilling*]

> Gina: I don't think it's just to be **fair**. I mean I think that they expect people
>
>   to be mature, but really, there's kids at 18 who die from doing stupid
>
>   stuff. Like, how are they going to tell us what's good for the country
>
>   and stuff if they're doing stupid stuff? Like, you gotta be pretty dumb
>
>   to do some stuff that kids do. [*challenge* to *warrant*] (Discussion 2007)

In this data *distilling* was often executed by the facilitator. I further discuss the *distilling* move in Chapter 4.

The final argument feature of interest to this study is the *Response to Challenge*. This code is meant to capture instances of talk where a person directly addresses a c*hallenge* to something they or another participant stated previously. The response is often a revision of the previous statement or provides additional information. To identify *responses to challenge* I asked the following questions: *Is the student revising a previous statement? Has that statement been directly challenged? Is the statement directed toward the person who presented the challenge? Are there key terms that exist across the initial statement, challenge and response? Does the response address the issue identified in the challenge?*

A *response to challenge* was often a revision or addition to an initial statement. When a *challenge* identifies some problem in the initial statement, the responding participant revises the statement to address the problem. In the example below, we see a direct *challenge* to a definition. The key terms "solve problems" and "logic" help make the connection between the statements more clear:

Initial Statement (Marc): I think intelligence is like, being only smart, smart as

       Kelly said, but smart enough to **solve problems**. Like, like you could

       be a scientist who needs to **solve problems** in, with, with like, let's

       say…let's say like you need the formula for something and you have

       to **solve the problem** making that. Or you're a kid on the blacktop and

       do… and there's a fight going on or something in the street and you

       might want to try to make a solution to figure that out. OK, Mason.

Challenge (Mason): I disagree with Marc. I don't think intelligence is how you

       can **solve problems**, I think that's **logic**. Because logic is like, the way

       you- like logical reasoning in math, we have, um the way you can

       figure something out, out

Response to Challenge (Kelly): You need to be intelligent to use logic, though.

Here Mason challenges Marc by suggesting that logic and intelligence are distinct

capacities, with logic alone being associated with the initial definition of intelligence as

solving problems. Kelly's *response to the challenge* is to provide additional information

concerning the relationship between logic and intelligence. She suggests that even if logic

is about problem solving, logic depends on intelligence. This *response to challenge*

results in a more complex conception of intelligence that in turn is open to further

challenge.

    At times identifying a *response to challenge* involved looking to see if a

participant would provide the information or argumentation function that was called for

in the *challenge* itself:

Challenge (Facilitator 3): …Ok, I think that that's a pretty good challenge for the

group. Nate is saying, "look, other animals are killing other animals

what's the problem with people killing animals?" (Discussion 2007)

Here, the *challenge* is calling for a distinction. The *challenge* is suggesting that the two

cases are the same. A proper response would be to explain how the cases are different.

The subsequent response does just that:

Response to Challenge (James): I think it's kind of different when an animal kills

an animal because, um, it's their instinct if they are predator to kill

other animals, but when we kill other animals for sport or just for to

find food um, it does not seem right to me.

Identifying *responses to challenge* was also aided by the fact that the response

tended to occur immediately after or very soon after the challenge. Consider an example

from a thread where the discussion was focusing on cruelty to circus animals:

Challenge: But they're just trying to make the lions look pretty.

Response to Challenge: Yeah, but it's, but you don't know how the lion feels.

In the end, identifying *responses to challenges* was a natural extension of identifying

challenges. This is no surprise, given that one depends on the other. The fact that

identifying certain features depended on the identification of other features reinforces the

contextual nature of the argumentation mentioned in the literature (Chinn & Anderson,

1998; Kelly, 1998; Driver et al., 2000; Erduran et al., 2004; Osborne et al., 2004).

When I first began coding the transcripts for core features, I thought that the

coding process would simply serve as a means for identifying argument quality. Instead,

the task of accurately identifying core features highlighted the contextual nature of both

student argumentation and teacher facilitation. Although this is not a unique finding

(Chinn & Anderson, 1998; Kelly, 1998; Driver et al., 2000; Erduran et al., 2004; Osborne

et al., 2004), it does have implications for the current and future studies of argumentation.

If identifying features requires one to connect them to different statements and place

them with a contextual frame, like an *argument thread*, then analyzing the quality of

argumentation will necessarily involve these strategies as well. This means that

frameworks used to analyze argument quality that don't account for context have severe

limitations in what they can help researchers understand. It also means that there is more

to argument quality than the presence and frequency of argument elements identified by

Toulmin (1958). I will have more to say about this in the following section.

Analysis of Discussion Transcripts Phase 3: Argumentation Quality

In this section, I will explain how I analyzed argumentation quality. I will explain

why and how I incorporated argument threads, into the Erduran Framework for Quality

Argumentation (2004). I will further describe how I used argument thread length, as an

indicator of quality.

My analysis suggests that the length of argument threads should be included as an

additional criterion for assessing the quality of argumentation. This criterion was revealed

as I coded for argument threads. When argument threads did not shift and were easy to

identify, it became clear that the group was focused on addressing the big question. The

resulting arguments were focused as well, as represented by lengthy argument threads.

Although argument thread shifts do impact focus, they do not always hurt the quality of

argumentation. At times, shifts are necessary and allow the group to effectively deal with emergent issues and return to the initial argument threads. I will discuss this further in Chapter 4.

Argument thread length as a criterion for quality was not present in the framework proposed by Erduran (2004), which I initially chose to use to assess quality. Erduran and colleagues (2004) organized argument elements into clusters of features (e.g., claims-warrant-rebuttal…)*,* but said nothing about how clusters relate to each other. By using argument threads as an indicator of focus, I was able to look at multiple "clusters" aligned under a *big question*. Clusters that aren't focused may represent a series of short, unrelated arguments that could contain *challenges*, but lack any connection across clusters. Sustaining focus on the *big question* over multiple turns seemed to increase the relevance of subsequent turns and generated lengthy a*rgument threads*.

I went to the data to determine what would count as a lengthy *argument thread*. I did this as a precursor to adding it to the existing framework for a*rgumentation quality*. I compared transcripts that were different in terms of the number of threads and thread shifts each contained. I also looked at each to see how relevant each argument thread was to the other threads, within the same transcript. The table below shows three transcripts representing a contrast in terms of the sequence of argument threads and the number of turns spent on each thread throughout the sequence. The sequence of threads illustrates how discussions can move back and forth between threads, thus decreasing focus. I specifically chose transcripts that represented either a focused discussion (few and

lengthy *argument threads*), or a less focused discussion (multiple *argument threads* and *argument threads shifts),* where the relevance across threads was lacking or less clear.

Table 3: The sequence of threads and number of turns per thread in three discussions.

Low Focus Transcript		High Focus Transcript		High Focus Transcript	
Thread	Turns	Thread	Turns	Thread	Turns
1	31	1	103	1	33
2	8	2	7	2	9
1	15			1	22
3	6			2	13
2	11				
1	13				
4	25				

The table helps illustrate the difference between more and less focused discussions. In transcript 1, there are a number of shifts in the discussion. Short bursts of turns are spent on different questions, which are not always directly relevant to the initial *big question*. By the time argument thread 3 emerges, the discussion appears to bounce from thread to thread. In transcripts 2 and 3 we see more focused discussions, with few shifts and a return to the initial thread. In the case of transcripts 2 and 3, the shifts were made in order to clarify terms, which were impacting the group's progress on the initial argument thread. In transcript 3, the group felt that the term *adult* needed further clarification. The group shifted to a new *big question*, (*What makes someone an adult?*) and the discussion remained there until the end. Based upon my comparison, I concluded that 20-25 turns was the minimum length to be considered good quality. I therefore included it in the initial framework for *argumentation quality* beginning at level three, to

be paired with the presence of clear challenges. The new conception of quality, which has

emerged here, is *the presence of challenges within lengthy argument threads*. In terms of

analyzing for quality argumentation, I adjusted the framework as follows:

Table 4: Modified Erduran Framework

Level 1	Level 1 argumentation consists of arguments that are a simple claim versus a counter-claim or a claim versus a claim.
Level 2	Level 2 argumentation has arguments consisting of a claim versus a claim with either data, warrants, or backings but do not contain any challenges.
Level 3	Level 3 argumentation has arguments with a series of claims or counter-claims with either data, warrants, with a weak or ill-defined challenge **or clearly defined challenges occurring within an argument thread with fewer than 20-25 turns.**
Level 4	Level 4 argumentation shows arguments with a claim and a clearly identifiable challenge. Such an argument may have several challenges, claims and counter-claims. **The series is represented by a continuous argument thread of more than 20-25 turns.**
Level 5	Level 5 argumentation displays an extended argument with more than one challenge or a challenge that successfully refutes a claim or argument thread. **The series is represented by a continuous argument thread of more than 20-25 turns.**

To evaluate *argumentation quality*, I applied the Modified Erduran Framework

shown in Table 4 to the transcripts. Applying the framework involved assigning the

appropriate level of quality to an argument thread based upon the presence of argument

features within that thread. For example, I assigned Level 4 to a thread with clear

challenges and a thread length of 25 or more turns (see Table 4 above). To do this, I

coded *argument threads* as a series of participant turns. I then coded individual turns

within the threads as *challenges*, whenever they were present. To check for quality

argumentation, I ran a code comparison within Nvivo to calculate the number of

challenges within each thread. As a result of the emergence of thread length as an aspect

of quality, I also looked to see if *challenges* occurred within threads of 25 or more turns.

The results are discussed further in Chapter 4.

Analysis of Discussion Transcripts Phase 4: Analysis of Facilitator Moves

In this section I describe how I identified, applied and revised the codes for

facilitator moves. After explaining how I selected my initial codes, I introduce each move

and illustrate coding decisions with examples from the data.

I initially considered facilitator moves based on the literature on the various

approaches to classroom discussion (e.g., Michaels, O'Connor, Hall & Resnick, 2002;

Splitter & Sharp, 1995; Waggoner, Chinn, Yi & Anderson, 1995). In addition, I used my

own experience as a facilitator. My training and experience in the Philosophy for

Children approach led me to a narrower set of moves from the P4C literature (Kennedy,

2004, 2013; Gregory, 2007, 2008) that I felt were consistent with insights from the other

approaches reviewed in Chapter 2. Although these moves are termed differently in the

different approaches, they fit into categories that are common across the approaches. For

example moves that aim to support "Accountability to the Learning Community" in the

Accountable Talk (Michaels et al., 2010) are similar in focus to "Community" moves

presented in the P4C materials (Gregory, 2008). Each of these families of facilitator

moves support an egalitarian participant structure, also advocated by the Paideia Seminar

approach (Billings & Fitzgerald, 2002). These similarities are supported and articulated

by Soter et al. (2004) and align with the features of *inquiry dialogue* discussed in Chapter

1 and summarized by Reznitskaya (2013). Given the relative similarities and the fact that

my data comes from Philosophy for Children sessions, I was comfortable beginning my

analysis based on moves derived from P4C. Typical P4C moves include: restating,

clarifying, questioning, naming moves, locating and tracking. These moves are intended

to help students to think and act meta-cognitively by making the process of

argumentation more transparent.

However, instead of just using the facilitator moves from P4C literature, I asked

the following questions in order to test and revise them, and to seek out new ones: *What

is the facilitator doing here? What is the facilitator focusing on? How does this move

impact the discussion? Is this move consistent with previous moves? What is happening

in terms of argumentation here? How is the move impacting argumentation quality?*

Engaging in this process resulted in my identification of 21 different moves – a list that

was larger and somewhat different from the list of P4C moves I began with.

I started the analysis of facilitator moves with this new set of 21 moves. As I

engaged in the analysis, I worked reiteratively to revise the codes and identify new ones

where they emerged. Throughout the process, I maintained notes on decisions made

concerning the application of codes and revised the coding manual based on my notes. As

codes were populated, revisions were made that included adding, deleting, merging, and

breaking the codes apart. For example, I initially coded some *facilitator moves* as

restatement and paraphrase, but as the analysis progressed it became clear that

facilitators made subtle shifts in student statements that meant the function of the both moves was better captured as a *paraphrase.* In response, I merged the two moves.

There were two moves used by facilitators in my transcripts that I chose not to include in my analysis of how facilitator moves related to the quality of student argumentation: S*eeking Clarification* and *Enforcing or Reminding of Procedures. Seeking clarification* was not included in my analysis as these moves involved simple verification of statements that did not present a clear argumentation function. Examples of *seeking clarification* include:

Facilitator 1 (Author):   Applies to what?

Facilitator 2: You mean you don't get the meaning, this definition of privacy, or you don't get the example?

Facilitator 3: You would or you wouldn't? (Discussion 2007)

In the examples above, the facilitator looks for clarification in terms of what students are addressing (e.g., *Applies to what?)* or to resolve confusion about what was said (e.g., *You would or you wouldn't?).* These did not appear to have a clear argumentation function. In contrast, when a clarification aimed at an argumentation function it was captured as *probing reasoning*, e.g., *Why does that matter? Why does it have to be something big? What is the difference between those two?* These moves aim at clarifying how a statement is being justified or how a distinction is being made, rather than what terms were used.

Reminding of or enforcing procedures was another kind of facilitator move that I chose not to include in the analysis. These moves addressed a variety procedural rules that tended to address behavior or participation rather than argumentation. For example:

> Facilitator 3: Call on someone, Amanda, who hasn't had a chance to speak yet, OK? So we get full participation

> Facilitator 2: Raise your hand and talk one at a time. Don't talk out.

> Facilitator 2: Kory, you're calling- you're calling for location, so you choose Katie somebody who hasn't had a chance to speak yet

> Facilitator 1 (Author): So, we're already having a lot of side conversations. I want to remind us that we have talked and talked about trying to really pay attention and listen. (Discussion 2007)

These moves suggested that facilitators were concerned with participation and behaviors conducive to it, as part of their role of facilitating good inquiry. However, how participation and behavior impacted argumentation was beyond the purview of this study.

A number of other moves were simply merged together as it became clear they were capturing the same function. This process resulted in my reducing the initial set of 21 moves to a final set of 7 moves that I felt represented the most important insight into how facilitators support quality argumentation. The total number of relevant moves was actually lower than I had anticipated.

Once the initial coding was completed, I conducted a reliability study of all codes and revised them accordingly. The reliability study contributed to the analysis throughout this phase. Table 5 represents the 7 moves that I will focus on in this section:

Table 5: Facilitator moves

Code	Description	Example
Distilling	A facilitator identifies and/or extracts a specific part of a statement. It is akin to <u>highlighting</u> a part of a passage in a reading.	[Initial Statement] Everyone votes. Can't the parents tell their kids to vote for someone and they <u>can make them vote</u>. [Distill] They can make them do it. [Initial Statement] We are saying how it's so bad that we kill animals but other animals kill other animals to get food, so if we kill animals to get food, I don't think it's that bad, <u>unless we are doing it for sport</u>. [Distill] But unless we are doing it for sport?
Paraphrasing	A facilitator expresses the meaning of another person's statement using <u>different words</u> to achieve greater clarity.	"He's saying that if you're intelligent at sports- if you're good at baseball, you're intelligent in it? You're smart at it." "So in other words Matthew is saying that the same whatever this whatever this skill is, or this capacity is, it's the same in a laboratory and on a blacktop."
Identifying or Completing a Warrant	A facilitator clarifies or completes a warrant. Often termed as an "If, then" relationship. The point is to make the inferential link explicit.	[Initial Statement] Just... the same consequences. 'Cause <u>if</u> it happens, by accident or on purpose, you can't really say the same, it's about consequences. [Identify Warrant] …So <u>if</u> somebody gets hurt, <u>then</u> you should suffer the consequences, whether it's an accident. [Initial Statement] I think, um, you should just leave it in the wild. Because like, in the zoo, that's like, not where they were born. And they need to

		learn to hunt in the wild and do what they are supposed to do and in a zoo they just like, sit there. [Identify Warrant] <u>If</u> they're in the wild <u>then</u> they learn what they are supposed to do.
Locating	A facilitator attempts to identify or make clear how a given statement fits within the general line of inquiry (or not).	"So you are building on what Sarah said." "How does that connect with Katie's and Matt's?" "What does that mean for the big question then?" "Maybe we should give Matt, um, the opportunity to respond, since two people have disagreed with him."
Naming Moves	A facilitator assigns a label to the argumentation/dialogue move made. S/he names the dialogue move they are executing rather than focusing on the content of what they are saying.	"So you are making a distinction." "You agree with John then." "I can add another example." "OK. So we've got it's not really a contradiction. It's a building move."
Probing Reasoning	A facilitator probes reasoning by bringing out, or attempting to bring out, an <u>unstated or implied aspect</u> of a statement. This could be a reason, distinction, criteria or qualifier. It is explicating reasoning whereas requesting clarification is about explicating meaning of terms.	"This sounds different though. What is the difference?" "What are your reasons though?" "So it is maturity that is important here?" "So is intelligence just talent?" "Is that so in all cases?"
Re-Directing	The facilitator re-directs a participant(s) to return to or address something that has been missed, neglected or deserves attention. This is not	"So is intelligence the capacity to learn; like Katie was saying, or is it something you learn how to do?" "But what about what AJ said? How does this fit with that?"

	a change in the line of inquiry or argument thread.	

Again, this list is not exhaustive of all moves that facilitators made within the transcripts. I chose to focus on these moves because they present a compelling picture of the complex nature of facilitation. My analysis in Chapter 3 also suggests that they play an important role in supporting *argumentation quality*.

In each of the transcripts, facilitators enlisted several moves to help clarify individual student contributions. These moves are *Paraphrasing*, *Distilling*, *Identifying or Completing Warrants* and *Probing Reasoning*. *Paraphrasing* represents times when the facilitator (or participant) reformulates what another person said to clarify it. To identify *paraphrasing,* I asked the following questions: *What statement is the facilitator focusing on here? Is this a new offering or a representation of something said previously?*

Paraphrasing is always a representation of how the facilitator or participant understands a statement or part of a statement. It is often presented to the participant for confirmation. The facilitator does this by addressing the person directly or framing the paraphrase as a question. The confirmation itself is an indicator of a paraphrase:

Celine: Yeah, 'cause you know you're gonna get arrested, you know the cops are gonna find ya.

Facilitator 1 (Author), D1: But you're saying before the fact, you should... you should know better before you even start drinking. [Celine agrees] Okay. (Discussion 2007)

Here we see Celine confirming my paraphrase. She approves of the reformulation and the group moves forward. The bracketed agreement in the transcript represents a space where I am looking at Celine for confirmation. I hold the floor until she responds and then release control with "Okay." At other times facilitators seek confirmation of a paraphrase by presenting it as a question:

> Casey: Uh... I agree with Sarah because it's like, it's your problem that you're drunk in the first place. It's like, if you know you have to drive to somewhere, like, you have to drive back home, it's like, why would you drink so much? It's like...why would you do it in the first place? And... if... you know that you're gonna get in trouble because you're... you just drank and now you're driving, but... if you slip on the ice, then you didn't really mean to do it. It's not like you put the ice there on purpose, so you don't get into trouble, so much, so much
>
> Facilitator 1 (Author), D1: If I know that something bad will happen... Is that the poi-... Is that your point? [Casey agrees] That since you kind of know that if you engage in this behavior, this thing might happen, and so, should the severity rise that way? I think that's different… (Discussion 2007)

Here again, I am reformulating the position of the student. I try to clarify the general point of a lengthy statement in a way that could serve as a new claim – that the consequences should increase if you intend to do a thing and know better. The majority of facilitator *paraphrases* had some component of confirmation or explicit questioning

involved in them. These two aspects along with the overlapping content (rather than form) between the statement and paraphrase helped me to apply the code.

     Distilling is another move concerned with clarifying and highlighting content**.** When a facilitator distills, they restate or paraphrase a small portion of a participant statement or statements in terms the very similar to those used by the participant. This makes identifying the move a relatively simple task. In the example below, the facilitator uses the *distilling* move as part of an attempt to bring attention to a part of a student statement:

> Michelle: Well, like... **that's your fault** if you're gonna be going drinking... like, why would you even go like, in a car when you're, like, already....
>
> Unknown: Student: [laughter] She's...
>
> Facilitator 1 (Author), D1:   She's not even finished yet.
>
> Michelle: No... uh...Kayla.
>
> Facilitator 1 (Author), D1:   Well, let me... let me make sure. So, is this something new, are you saying something new or are you just agreeing?
>
> Michelle: I'm agreeing with Brian.
>
> Facilitator 1 (Author), D1:   Okay. But you also said **'It's your fault'**. (Discussion 2007)

In the sequence above, I think I hear something "new" initially enlist the student's help in bringing out what I felt deserving attention – the concept of responsibility. After a few turns, I use *distilling* to bring attention to the issue of fault. *Distilling* is a subtle move

that is used strategically by facilitators for very specific purposes, which will be discussed further in Chapter 4.

Facilitators use *Identifying or Completing a Warrant* to clarify both the content of statements and the reasoning involved in generating them. As discussed in the Analysis of Core Argument Features, warrants are often implicit in student statements. Students can embed warrants, and the inferences they represent, in lengthy and, at times, confusing conversational turns. In cases like these, the facilitator may choose to make these warrants more explicit. For example:

Ben: If it's not fair for us, then… Our parents and people that were our age, they had to wait too. So, if we voted to have to wait then to vote so we wouldn't be like, as bad if like, they could just vote when they're like, 10 and we hadda wait 'til we're 18.

Facilitator 1 (Author), D2: So, if our parents had to do it, we should have to do it?

Ben: [Nods] Natalie.

Natalie: Why do we have to be like our parents? I mean, I mean they're like … You want us to wait like our parents? Maybe we shouldn't have to wait. Maybe kids are more mature these days. I agree with Tess. Maybe it doesn't have to be something as major, but we should get some say in what we have done to us in everything. And like, it is not fair to us. Because you're voting on stuff for our school? Well, if you want it that

> way, you go to this school. If that's really how you want it, then you do
>
> it. Allie. (Discussion 2007)

Here I use *identifying the warrant* in response to quite a confusing statement from Ben. Natalie responds to Ben's position, but addresses it as I formulated it, suggesting that the facilitator helped initiate this response. This is a potentially valuable result of using the move. The value of *identifying or completing a warrant* will be explored further in Chapter 4.

Probing reasoning is a move that I apply to instances where the facilitator is requesting or prompting further justification of a student statement. It often takes the form of asking "Why?" but is best understood as an attempt to bring out a reason, distinction or criteria. It is about explicating and clarifying reasoning. To help identify *probing reasoning,* I ask the following question: *Does the move focus on how a statement can be justified, rather than what the statement means?* Here are a few examples of the move:

> Elizabeth: Yeah, like, if it's like, a dog that would be different. It depends if it's a
>
> wild animal or not if you should take them into your house or leave it
>
> in a zoo.
>
> Facilitator 3, D1: Ok, so if an animal- why a dog? Why not just let dogs run
>
> around in the forest? (Discussion 2007)

The facilitator is concerned with what the example of a dog means for the position being offered. She wants to know why that example is being offered. Student's response to such probes helps make their reasoning clear to the facilitator and the group:

Elizabeth: Because it's like, a house pet, and they're usually in shelters and it's

better in a home than a shelter.

Probing reasoning also applies to instances where the facilitator is seeking to

understand the criteria a student is using to distinguish two examples:

Cayla: It depends how, like, what the accidental thing was. Like if, a car

accident, are you really gonna get put in jail for that? But, like, how

do you accidentally just stick a knife through someone's heart? That's,

just...I mean...

Facilitator 1 (Author), D1:   Ok. So what's the difference between those two, then

Cayla: Well, like, a car accident... Usually if you couldn't see it, or something,

then accidentally you would bang into them and you could kill

someone, but it's not like you did it on purpose. So unless you did do it

on purpose, you shouldn't get the same consequences as murdering

someone. (Discussion 2007)

A final indicator of *probing reasoning* was that the facilitator requested

information that required a response from the student, like Cayla's above. The presence

of the follow-up helped identify the move.

In addition to clarifying individual student contributions, facilitators also use

moves to clarify the process of argumentation. These moves are more meta-cognitive and

help the students see how they are thinking and collaborating together. One move that

facilitators use to make the process more clear is *Naming Moves*. When a facilitator

names a move, they assign a label for the kind of argumentation/inquiry move made by

the student in their turn (of part of a turn). *Naming moves* clarifies what a student is doing

instead of, or in addition to, focusing on the content of what they are saying. The focus on

the function of the turn was the distinguishing factor that helped me to apply the code.

The following examples reflect this focus on function:

> Facilitator 2: They are asking for clarification.

> Facilitator 2: Yeah, he wants location. He wants to know where we are.

> Facilitator 3: John just threw out a challenge. (Discussion 2007)

In all of these examples, the facilitator is commenting on what happened or what a

participant did. This kind of commentary was a key indicator of *naming moves*.

Another key indicator of *naming moves* was the fact that all three facilitators had

experience in P4C. Each used terms from within the pedagogical literature on P4C, as

names for student turns. For example, the *Philosophy for Children Practitioner*

Handbook (Gregory, 2008) offers a list of 23 moves to look for as part of an observation

checklist, including: Asking a question, Agreeing or Disagreeing, Making a Distinction,

Identifying an Assumption… Each instance of *naming moves* below uses terms from the

P4C list:

> Facilitator 1 (Author), D1:   So you're **agreeing** that, that it's a different scenar-...
>
> > that the consequences should be different.
>
> Facilitator 2, D2:   I think that a **distinction** was just made.
>
> Facilitator 3, D1:   Okay, so that's another **example**. (Discussion 2007)

This was another instance in which my own training in P4C alerted me to the presence of specific moves. My familiarity with the use of these moves made me sensitive to their use in the data.

    Locating is another meta-cognitive move, focused on process. The facilitator uses *locating* to focus on how individual statements fit within the line or path of inquiry (often corresponding to what I identified as argument threads), as it unfolds during the discussion. I applied the code when I saw the facilitator attempting to identify or make clear how a given statement, or set of statements, fit together. *Locating* requires the facilitator to have a sense of the cumulative results of the inquiry at any given moment. The following are examples of *locating* on the part of the facilitator.

    Facilitator 2, D2:   Maybe we should give Matt, um, the opportunity to respond, since two people have disagreed with him.

Here the facilitator identifies the relationship between a group of turns and Matt's previous statement. He uses *locating* to make the connection explicit and to invite Matt to respond. This move is coded as *locating* because it identifies how Matt's single move fits within the latest sequence of turns. Below is another example of a *locating* move.

    Facilitator 1 (Author), D1:   I mean, I think we can agree if we break... 'cause **we've already said** if we break multiple laws, the severity should increase, right? Um... and **we've said** that if you intend to do something, the severity should increase. Some people have said that. **But this seems to be** like, my ability to predict, or something. (Discussion 2007)

My intervention is focused on distinguishing a particular student statement (e.g., *But this seems…)* from two positions that have been developed previously in the discussion. It points out that a unique offering has been made in comparison to them. The comparative nature of *locating* contributed to applying it as a code. *Locating* is a valuable move, due to its ability to help the group see how they are working together, and by extension helps them remain focused.

Facilitators also use moves to influence the direction of the inquiry. *Re-directing* is a move that involves prompting a participant(s) to return to, or address, something that has been missed, neglected or deserves attention. Identifying the move involved looking for times the facilitator prompts the group to take-up or connect to something that was previously stated. This is often accompanied by the name of the person who made the statement.

Facilitator 1 (Author), D2: But do you agree with **Maya** that ultimately, if we could get rid of the pressure, that you should be able to vote?

Facilitator 2, D2: Ok, Amanda, before you say whatever you want to say, um **Kathy** has made a crucial distinction which nobody's mentioned yet. (Discussion 2007)

In both of the previous examples, the facilitator uses the name of the participant and connects it to the statement they want addressed. Prompts for what to do are also a sign of *Re-directing*. In the first example, the facilitator articulates the move he wants made (e.g., *do you agree)*. In the second, the facilitator uses the move to assign priority (e.g., *before*

you say). Facilitators also use *re-directing* to suggest strategies or moves that will help improve the inquiry.

> Facilitator 2, D2:   Well then, for the sake of argument, could someone offer a
>
> counter-argument?
>
> Facilitator 3, D2:   So for the purposes of examining this idea let's just stay with
>
> the idea of killing animals for food. Even though, like Amber said
>
> killing animals for sport is kind of a waste. Stay with the idea of
>
> killing for food. (Discussion 2007)

Re-directing is a relatively strong intervention by the facilitator, when compared to other facilitation moves. The strength of the intervention aids identification of the move for purposes of analysis. The move represents a time when facilitators are intentionally guiding, or directing, the discussion, rather than clarifying it. This was explored in the facilitator interviews and will be discussed more in Chapter 5.

Analysis of Facilitator Interview Transcripts

As I mentioned at the beginning of this chapter, I conducted interviews with the participating facilitators to better understand their use of moves. During the interview, each facilitator answered questions concerning their general beliefs about facilitation and *inquiry dialogue*. The facilitators then engaged in a shared review of their discussion video where they were asked to explain their use of particular moves, in particular situations. Each interview was transcribed for analysis.

To analyze the transcripts of my interviews with the facilitators, I organized responses according to the two key findings and three key principles, generated during

the code-based Analysis of Discussion Transcripts. I designed the interview questions to tap into these principles and findings. The analysis of responses occurred in two steps:

1. Focused coding of the entire data set looking for responses relevant to the key findings and principles.

2. Open coding of the entire data set to identify recurring themes that align with or contradict the key principles and findings revealed in step one.

The following paragraphs explain each step.

During the first step of the Analysis of Interview Transcripts, I used focused coding to look for the themes related to the key findings and principles identified in Chapter 4. I then turned these findings-based themes into the 5 codes summarized in Table 6. The focused coding for each code was guided by specific interview questions, some of which were designed specifically to test a given finding or principle. Table 6 shows the interview questions related to each code.

Table 6: Key findings and principles associated protocol questions

Codes	Protocol Question
Argument Thread Shifts	• What are ways to enhance argumentation quality during a discussion?
	• How important is it to stay on the same topic during a discussion?
	• How do you decide when to shift topics?
	• Why did you make this move?
Background Knowledge	• How familiar are you with the relevant arguments that have been constructed around this issue?
	• Why did you make this move?
Track the Inquiry	• Is there any mental framework that you use during facilitation?
	• What do you keep track of during the discussion?
	• Do you keep track of argument building during the discussion?
	• What are you seeing here?

Work Towards a Reasonable Judgment	• What do you see as the value of *Inquiry dialogue*? • What is the role of the facilitator during *Inquiry dialogue*? • What are ways to enhance argumentation quality during a discussion? • Why did you make this move?
Let the Inquiry be Student Driven	• What do you see as the value of *Inquiry dialogue*? • What is the role of the facilitator during *Inquiry dialogue*? • Why did you make this move?

During this step of the analysis, I let the interview questions guide the exploration. By focusing on a question (e.g., *How important is it to stay on the same topic during a discussion?)* aimed at a given finding (e.g., *argument thread shifts)*, I was able to get an immediate sense of the facilitator's general beliefs on the issue. I noted possible connections to other findings or principles as well. For example, in the interview with Facilitator 3, her response to the question above reflected her beliefs about staying on a given topic, but it also hinted at another principle e.g., *work toward a reasonable judgment*.

> Facilitator 3: I think it's almost invaluable to just stay on the same topic until it's exhausted, if that's possible. I mean, within the means of a 50 minute classroom, we can do that but yes. I don't think it's… To go to another line of inquiry, if it's not warranted, I don't think is a good thing or a valuable thing, because there is too much to be picked apart.
>
> (Interview 2014)

Here, the facilitator suggests that staying on the same topic is a means to "exhausting" or "picking apart" the topic. This response relates to the principle of *work toward a reasonable judgment*, because it is concerned with working through a problem to its

reasonable conclusion. In an *inquiry dialogue*, one of the first steps the group can take *toward a reasonable judgment* is to explore all relevant answers and considerations – to be exhaustive.

> Later in that same response, she also touches upon the principle *Track the Inquiry*:
>
> Facilitator 3: …and **until I think every student sees those connections,** I don't see why you are just going to switch topics and go to something else. I think it's a disconnect. (Interview 2014)

Here, the mention of helping students to see connections, suggested the response is also related to tracking. The principle represents a concern for making the process of the inquiry, clear to the group. That involves helping them to see connections. I noted possible connections to principles as they emerged. I noted apparent contradictions as well. These notes informed step two of the analysis of interviews.

During Step 2, I used open coding to search for recurring themes that either supported or contradicted previous findings. The open coding was particularly necessary in the Review of Facilitation segment of the interview. As questions in that segment took the form of explanations for moves, they were less likely to fit into pre-conceived categories. At times they addressed multiple categories at once. For example, in the discussion aimed at defining intelligence, the facilitator reported being uncomfortable with the students emerging theory that more education leads to higher intelligence. His discomfort brings two principles into conflict with each other.

> Facilitator 2: Yeah, doesn't feel right to let it go but it doesn't feel right to intervene and say, look, this just doesn't make an sense, so I am trying

to manipulate the situation so that what I consider to be sort of

reasonable emerges and sort of one way or another I am kind of

backing it. (Interview 2014)

Here the facilitator expresses his desire to support the students *working toward a*

reasonable judgment (e.g., Yeah, doesn't feel right to let it go but it doesn't feel right to

intervene and say, look, this just doesn't make any sense), while remaining sensitive to

his commitment to the principle of letting the inquiry be student driven (e.g., …but it

doesn't feel right to intervene). Consequently, I coded this response as supporting both

principles. I discuss the findings from the two steps of analysis in Chapter 5. In the next

chapter, I present the findings from the Analysis of Discussion Transcripts.

CHAPTER 4 – FINDINGS FROM THE ANALYSIS OF DICSUSSION

TRANSCRIPTS

In this chapter, I present the initial interpretations generated through the four

phases of analysis of discussion transcripts. I focus on key insights related to

argumentation quality and facilitator contributions. The distinct phases of analysis are:

Analysis of Argument Threads, Analysis of Core Argument Features, Analysis of

Argumentation Quality, and Analysis of Facilitator Moves. For each of the phases, I

summarize key observations and offer my interpretation of those observations. I conclude

each section by identifying additional topics to discuss with the facilitators during

interviews. In the next section, I focus on observations and interpretations from the

analysis of argument threads.

Findings from the Analysis of Discussion Transcripts: Argument Threads

As I discussed in my Analysis of Argument Threads, lengthy *argument threads*

represent significant focus on one *big question* during a discussion. In the Analysis of

Argumentation Quality, I suggested that lengthy *argument threads* appeared to be an

indicator of *argumentation quality*. As I coded for *argument threads*, I assumed that

fewer (and subsequently longer) *argument threads*, and fewer *argument thread shifts*,

would represent better argumentation. During a focused inquiry we should see everyone

directing their efforts toward a common task – answering the *big question*. The coded

data (summarized in Table 7) shows that the majority of the discussions were focused,

with significant portions of the discussion spent on one or two *argument threads*. I used

the number of turns to analyze how much time the group spent on the different *argument*

threads. Table 7 below, shows how turns were distributed according to the number of

words generated within each discussion and thread. One of the discussions, F2, D2 is

shorter than the others. This is a consequence of the facilitator shifting into a "discussion

plan" mid-way through the allotted discussion time. In P4C, discussion plans are a series

of questions (many of which are *big questions*) designed to explore a broad philosophical

concept. I did not code this part of the discussion as *inquiry dialogue* because the plan

was not designed to support dialogue, aimed at arriving at the most reasonable answer to

a *big question.* In this case, it was designed to survey perspectives surrounding the

concept of lying.

Table 7: Turn counts and (words) for argument threads

	Turns (Words) per Argument Thread				
	Thread 1	Thread 2	Thread 3	Thread 4	Total Turns (Words)
Facilitator 1, Discussion 1 (F1, D1)	92 (3,470)	0	0	0	92 (3,470)
F1, D2,	55 (2,475)	22 (871)	0	0	77 (3,346)
F2, D1	103 (3,545)	7 (112)	0	0	110 (3,657)
F2, D2	48 (1,476)	27 (766)	0	0	75 (2,242)
F3, D1	58 (1,725)	19 (737)	6 (152)	25 (812)	107 (3,426)
F3, D2	36	50	0	0	86

	(1,241)	(1,913)			(3,154)

The table shows that discussions were generally focused, with the majority exploring

only two threads. There was one exception to this general finding. One discussion, F3,

D1, had a total of four threads, with no clear indicator for why the shifts between the

different threads were made. I examined this particular transcript more closely and found

that the facilitator's questions made a significant impact. When the facilitator's question

was treated like a new *big question*, it presented a potential *argument thread shift*. For

example:

> Facilitator 3, D1:   Ok. So, so far we have: it's ok to keep an animal in the zoo if
>
> it's rare, if it can't survive, put it in a place where there are no hunters.
>
> What if none of those reasons apply? What if we just want to put
>
> animals in the zoo for, just because we want to put animals to the zoo?
>
> Is it a good reason to just- why do we even have zoos? Like, I don't
>
> know, do we have zoos to protect animals or if we have zoos for other
>
> reasons? (Discussion 2007)

Here the facilitator is *challenging* the student's arguments concerning zoos. I coded the

move as a *challenge,* rather than *probing reasoning* because the move is not aimed at

clarifying the reasoning of a particular offering. The facilitator understands the arguments

that have been put forth, as evidenced by her *locating* and *paraphrasing* them. Here she

is offering counter examples or alternative explanations that if true, would refute the

arguments she has summarized. In doing so, the facilitator shifts the discussion away

from the initial *big question*, *Is it better to keep an animal free, in the wild or in your house?* The students take up the intervention as a new thread. Subsequent student contributions focus on the positives and negatives of zoos. The turns preceding or following this intervention do not indicate whether the facilitator intended to shift to a new *argument thread* or simply to push the student's reasoning.

In this particular discussion the facilitator's questions resulted in a number of different *argument threads*. The group responded to the questions and at times "bounced" back and forth between them. The following facilitator questions resulted in independent *argument threads*:

1. Is it better to keep an animal, free in the wild or in your house?

2. Should we have zoos?

3. Is it bad to have animals lose their instincts?

4. Why is keeping an animal in a circus different or the same as keeping it in the zoo?

When multiple questions are being addressed, or are taken up as independent *argument threads*, students have to decide whether to shift the focus of their thinking or not. For example:

Facilitator 3, D1:   Well, why should people get to decide how animals should be taken care of? I mean, if you just leave them in a wild with other animals they will take care of themselves, so who are people to just sit around and say, "well this animal needs this, this, and that?" Anybody? Ariel?

Ariel: I was gonna say that if you keep an animal in the zoo, like it's born in

the zoo. Then they like, go and get new lions and they are young and

new and then you don't need the old one anymore. If you let it go in

the wild, it might get used to, like, when it was in the zoo, like what

time a steak comes out. Like, every time at 6:00 it might remember

that. So then it's thinking it's going to get steak and so it might starve.

And it might not know what its predators are. (Discussion 2007)

Here, Ariel offers an argument, responding to a question asked earlier in the discussion

e.g., *Should we have zoos*? She shares previous thoughts, rather than respond to the

facilitator's question about people deciding what animals need. She explicitly states "I

was gonna say," indicating that she is offering a contribution that was formulated prior to

the facilitator's question. This keeps the previous *argument thread* active. Had Ariel

answered the facilitator's question, a new *argument thread* could have emerged.

The reason for an *argument thread shifts* mattered more than (or in addition to)

the number. At times an *argument thread shift* actually contributed to the quality of

argumentation that followed. On two specific occasions in the data, the groups were

working toward addressing a big question, but shifted efforts to a secondary big question

temporarily. In these cases, the *argument thread shift* was productive, because the group

applied the product of the shift to the initial *big question*. In other words, the focus was

still on the initial *big question*, they just took a detour to get there. In both cases, the

facilitator noticed that semantic shifts, or semantic ambiguity was hurting the group's

productivity. The facilitators initiated *argument thread shifts* to work on a definition of

the terms in question. For example, during my discussion of the big question, "Who should be allowed to vote?" a student suggests an argument thread shift, which I take up:

Gina: First of all, everyone votes. We just voted now. So why does it have to

                  be on something big? **And second of all, who says that 18 you're an**

                  adult. Why can't you be an adult when you're 12? Like, who made up

                  this rule that when you're 18, you're an adult. I mean at restaurants,

                  the kid's menu is 12 and under usually, not 18 and younger.

Facilitator 1 (Author), D2:   Right. So we're asking a question about when you

                  become an adult or what, what makes an adult.

Gina: Yeah.

Facilitator 1 (Author), D2:   So, what's an adult and when do you become one?

                  (Discussion 2007)

I write the new question on the board and the group works on the criteria for adulthood over 11 turns, until another participant suggests that people choose and age simply to be fair. The group spontaneously returns to the initial big question and considers the issue of fairness as it applies to the big question.

Facilitator 1 (Author), D2:   Hmm. Okay. So we, we choose an age just to be fair

                  then.

Aaron: [slight nod] Gina.

Gina   I don't think it's just to be fair. I mean, I think that they expect people

                  to be mature, but really, there's kids at 18 who die from doing stupid

                  stuff. Like, how are they going to tell us what's good for the country

and stuff if they're doing stupid stuff? Like, you gotta be pretty dumb to do some stuff that kids do.

Facilitator 1 (Author), D2:   Well, and isn't the alternative true? Aren't there like, say 16 year olds that have had to work after school or help make big decisions in their family because of circumstances? Wouldn't we say that they're kind of more mature than some 18 year olds?

Gina: Trevor.

Trevor: With what Aaron said like it's, it's just to be fair. It isn't fair for us, kids our age. And if voting for presidents is too major for us, then we should be able to vote for something else then, something for our school.

Facilitator 1 (Author), D2:   So, you're agreeing with Gina. (Discussion 2007)

In this discussion segment, Trevor brings the definition back to the initial question about voting. The group follows Trevor's lead and continues the discussion of voting while including the concept of fairness.

If the group and I left the concept of adulthood open for interpretation, it is possible that two *argument threads* (e.g., one focused on who should be able to vote and one that is focused on defining *adult*) would have emerged and stayed active at the same time. This could have resulted in two concurrent discussions and a division of the group's efforts. Instead, the group worked together, making the discussion more productive and the facilitator's attention better directed.

By getting the students to commit to the second *argument thread* (e.g., *So we're asking a question about when you become an adult or what, what makes an adult. So what's an adult and when do you become one? What do we think*?), I helped them to effectively work on an issue that needed to be resolved in order to answer the *big question*. How I did so is important. I grounded the shift in the content of the discussion and framed the intervention as a diagnosis of what was going on, rather than something I wanted to happen (e.g., *So we're asking a question about when you become an adult…*). This reflected a concern that I explore in the Facilitator Interview.

In a second example, the move was equally explicit and came as a request from the facilitator. This time, students were discussing a question of whether or not there is ever a reason to invade someone's privacy. At a particular point during the discussion, the facilitator decided to intervene.

> Facilitator 2, D2: But this time let's listen, OK? Actually, what I'd like to do- I'm going to step in here and ask that we actually start with a definition of privacy, because we're all also assuming that what you mean by privacy is the same as what I mean by privacy, or that somebody from Indonesia, what they mean by privacy means the same thing as somebody from Brazil or somebody from the States, etc. We're assuming all those things, as if privacy is something that everybody understands. So I'd like to actually, if we're going to start again, start with a call for a definition.

Here the facilitator diagnoses a problem with the line of inquiry. He is concerned that a lack of clarity around a concept central to the inquiry will hurt the conclusions the student might draw from it. After spending 11 turns working out what the group means by privacy, the facilitator shifts the focus back to the *big question*:

> Facilitator 2, D1:   Yeah, I don't think we've had- nobody really has a problem with Marc's definition of privacy. So let's see if we can move, carefully and systematically so we don't just kind of circle chaotically. So we move somewhere. (Discussion 2007)

The facilitator assesses the group's comfort with their definition of privacy and suggests that they move forward "systematically". This prescription for how they "move forward" seems to indicate his concern with being focused.

In the examples above, both facilitators helped to maintain the group's focus on the overarching task and kept diversions relevant to it. When the students' statements were consistently focused on a common *big question*, their contributing *core argument features* were relevant to the key issue and helped reach higher levels of quality. I illustrate this further in the next section. It is no surprise that an issue associated with relevance emerged as an important factor, given the role it plays in argumentation theory and informal logic (Fogelin, 1978; Walton, 1989; Walton, 2003).

If *argument thread length* and *argument thread shifts* have the impact on *argumentation quality* that they appear to have, then we need to know more about how facilitators understand and support them. To tap into this understanding, I added the following questions to my interview protocol:

- Is there any mental framework that you use during facilitation?

- What do you keep track of during the discussion?

- How important is it to stay on the same topic during a discussion?

- How do you decide when to shift topics?

I designed these question to expose the general organizational frames that facilitators used during discussion. My thinking, informed by experience as a facilitator, was that staying focused on the *big question* was related to how the facilitators track the discussion as a whole. The second and third questions are about *argument threads* and *argument thread shifts,* but are worded more generally to not lead the interviewee. I discuss the results of the interview in Chapter 5: Facilitator Interviews

Findings from the Analysis of Discussion Transcripts: Core Argument Features

In this section, I present pre-interview findings and interpretations from the Analysis of Core Argument Features. I focus on the relationship between *core argument features* and *argument threads*. I then offer a few interpretations for those findings.

There were a large number of *argument features* generated across the data set. Table 8, shows that argumentation occurs throughout each of the discussions, as evidenced by the number of *argument features* per discussion.

Table 8: Core argument features per discussion

	Claim	Data	Warrant	Challenge	Response to Challenge
F1, D1	3	7	13	6	1
F1, D2	5	11	19	17	1

F2, D1	4	10	8	5	2
F2, D2	4	10	8	11	6
F3, D1	9	32	21	94	1
F3, D2	3	18	9	8	5

The number of *argument features* generated was not a surprise. The general relationship between argumentation and *inquiry dialogue* was established in the review of literature. The type of *core argument features* per discussion was relatively consistent across the facilitators. Each discussion generated *data* and *warrants* in support of numerous *claims*. *Challenges* were also present and comparable.

One discussion, F3, D1, did contain a higher number of certain features. In the Facilitator 3's first discussion, there were a total of 53 data and warrants (combined). This discussion also had the most *argument threads* (4) and *argument thread shifts* (6). These numbers hinted at the possibility of a relationship between the number of *argument threads* and certain c*ore argument features*. It also indicated that looking at *argument features* per discussion would not provide enough information to understand this difference. A more detailed picture was needed.

To explore the data further, I looked at the number of *argument features* per *argument thread.* In Table 9, I organized the *argument threads* in descending order from the longest thread to the shortest (by turn), to help illustrate the relationship between features and threads. *Argument features* generated by the facilitator are in parentheses.

Table 9: Core argument features per argument thread in descending order, by number of turns (total argument features)

	Claim	Data	Warrant	Challenge	Response to Challenge	Total Features	Total Turns
F2, D1: Thread 1 3,545 words	3	16	8	11	6	44	105
F1 (Author), D1: Thread 1 3,470 words	3	19	13	6	1	45	92
F1 (Author), D2: Thread 1 2,475 words	3	8	19	12	2	44	55
F3, D1: Thread 1 1,725 words	4	19	13	3	0	29	49
F3, D2: Thread 2 1,913 words	2	14	8	7 (3)	5	36	46
F2, D2: Thread 1 1,476 words	3	11	7	2	0	23	48
F3, D2: Thread 1 1,241 words	1	7	1	1	0	10	38
F2, D2: Thread 2 766 words	1	1	1	2	2	7	27
F3, D1: Thread 4 (812 words)	1	1	0	1	1	4	25
F1 (Author), D2: Thread 2 871 words	2	2	3	3	0	10	22
F3, D1: Thread 2 737 words	2	4	6	3 (1)	0	15	20
F2, D1: Thread 2 112 words	1	1	1	0	0	3	7
F3, D1: Thread 3 152 words	1	2	2	0	0	5	6

Table 9 supports a couple of key findings relevant to *argument threads* and *core argument features*. The first is that longer *argument threads* contained more *argument features*. Second and more importantly, the *core argument features* used as indicators of quality e.g., c*hallenges* and r*esponses to* c*hallenge*, decreased as the length of the *argument thread* decreased. This was the case for each of the facilitators, suggesting this was more than a consequence of a given facilitator's approach. For each facilitator, as the *argument threads* grew shorter, the number of *argument features* decreased as well. This relationship is made more evident in Table 10, which compares the number of *argument features* in the longest *argument thread* and shortest *argument thread*, for each facilitator.

Table 10: Longest and shortest argument threads from each Facilitator

	Claim	Data	Warrant	Challenge	Response to Challenge	Total Turns
Auth, D1: Thread 1 (3,470 words)	3	19	13	6	1	92
Auth, D2: Thread 2 (871 words)	2	2	3	3	0	22
F2, D1: Thread 1 (3,545 words)	3	16	8	11	6	105
F2, D2: Thread 2 (766 words)	1	1	1	3	2	27
F3, D1: Thread 1 (1,725 words)	4	19	13	3	0	49
F3, D1: Thread 3 (152 words)	1	1	2	0	0	25

The relationship between *argument thread length* and number of *challenges,* demonstrates the usefulness of a concept of *argument thread* for the analysis of argumentation. This is discussed further in the following section.

There were a few interview questions relevant to facilitation that emerged from the analysis of *core argument features*. In the section on Analyzing Core Argument Features, I pointed out that a given *argument feature* was best classified by connecting it to the other *argument features*, within the same *argument thread*. This helped me analyze the discussions, but I needed to know more about whether/how facilitators identified, organized and tracked arguments during inquiry. The following Facilitator Interview questions emerged from the analysis of core features: *Do facilitators need to maintain a broad sense of context to facilitate well? Do facilitators track things like Argument Threads in their head while facilitating? What do they pay attention to in terms of arguments, argument features and argumentation? Is the quality of argumentation a concern when facilitating?* I added the following questions to the interview protocol in the hopes of addressing these concerns:

- What do you keep track of during the discussion?
- Do you keep track of argument building during the discussion?
    - If No – Is there another way that helps you decide how and whether you'll intervene?
    - If Yes – How important is it to keep track of argument building?
- What aspects of the argument do you see here? [Used during mutual review of transcripts]

I also included a more general question about how the facilitator understands her role during facilitation. I reasoned that her decisions concerning what she tracks, how she organizes responses and whether she focuses on arguments and their features, would depend in part on her more general views about facilitation. My facilitation is certainly influenced by what I view as my responsibility during the discussion. I added the following question to the protocol to see if this was also the case with the other facilitators.

- What is the role of the facilitator during *Inquiry dialogue*?

Additional questions related to facilitation emerged during the Analysis of Argumentation Quality.

Findings from the Analysis of Discussion Transcripts: Argumentation Quality

In this section, I present findings on *argumentation quality*. I first discuss the results of applying the Modified Erduran Framework. I then discuss how I used insights from the analysis to develop interview questions for the facilitators.

The Modified Erduran Framework makes c*hallenges, responses to challenge* and *argument thread length* essential criteria for determining *argumentation quality*. As illustrated in Tables 8, 9 and 10, *challenges* and *responses to challenge* were present in each of the discussions. Both features were most prevalent in lengthy *argument threads*.

I found that in certain *argument threads*, the facilitator made some of the *challenges*. These cases seemed to indicate that *challenges* from the facilitator can have adverse effects on the resulting *argumentation quality*. In the data, *challenges* from the facilitator came from Facilitator 3. These *challenges* were imbedded in longer turns that

also initiated an *argument thread shift.* I discussed these instances in the Analysis of

Argument Threads. In these cases, it was not clear whether the facilitator intended to

challenge a student statement or shift the thread. The facilitator's intention was explored

further in the Facilitator Interview. The following questions aimed at clarifying such

issues:

- What is happening here?

- Why did you make this move here?

The interview question *What is the role of the facilitator during Inquiry dialogue?*

applies to this issue as well. *Facilitator moves*, including *challenges*, are covered in more

depth in the following section.

As I discussed in the Analysis of Augmentation Quality, counting the number of

challenges in a discussion may fail to capture an important aspect of quality: staying

focused on the *big question.* If I had used the original Erduran Framework (2004), the

separate discussions wouldn't have appeared much different from each other. When

comparing Table 8 and 9, one can see how discussions that appeared similar, based on a

simple count of *argument featu*res, look very different when organized by *argument*

threads. According to the original Erduran framework (2004), each discussion would

have reached Level 4. When the criterion of *argument thread length* was included, a

more detailed picture of quality emerged. This information is even more important if one

is interested in how facilitators contributed to quality. *Argument threads* helped locate

moves associated with instances of *argumentation quality*. Table 11 indicates that

instances of quality argumentation were present throughout the data.

Table 11: Argument threads by level of quality, number of turns, and (word count)

	Thread 1	Thread 2	Thread 3	Thread 4
Discussion: Auth, D1	Level 4, 92 Turns (3.470)			
Discussion: Auth, D2	Level 4, 55 Turns (2,475	Level 4, 22 Turns (871)		
Discussion: F2, D1	Level 4, 105 Turns (3,545)	Level 2, 7 Turns (112)		
Discussion: F2, D2	Level 4, 48 Turns (1,476)	Level 4, 27 Turns (766)		
Discussion: F3, D1	Level 4, 49 Turns (1.725)	Level 3, 20 Turns (737)	Level 2, 6 Turns (152)	Level 4, 25 Turns (812)
Discussion: F3, D2	Level 3, 38 Turns (1,241)	Level 4, 46 Turns (1,913)		

The table establishes that there were numerous instances of quality, defined as Level 4, to explore *facilitator moves* within. The table also reinforces insights gained in the Analysis of Argument Threads. Short threads tended toward a lower level of quality. In the two cases where the threads stayed below level 3, the number of turns and word counts were also the lowest, with 112 and 152 words in each.

I mentioned in the Analysis of Argumentation Quality that *argument threads* may be an indicator of relevance. This insight emerged again as an interpretation associated with short and numerous *argument threads*. Relevance is an important criterion of good arguments within argumentation theory and informal logic (Fogelin, 1978; Walton, 1989; Walton, 2003). When evaluating the quality of reasons in informal logic, three criteria are often evoked as essential. Good reasons are relevant, sufficient, and acceptable. These criteria are distinct from those used in formal logic (i.e., true, valid and sound) (Ehlers,

1976). The distinction between the two sets of criteria arises from the fact that in typical arguments, the truth of a given statement is often impossible to establish with absolute certainty. In the next few paragraphs I give a brief explanation of sufficiency, acceptability and relevance. This by no means does justice to the actual complexity of these issues. More thorough explanations can be found in a variety of books on informal logic and argumentation (e.g., Blair & Johnson, 2006; Blair & Tindale, 2012).

Sufficiency is a criterion concerned with the amount of evidence or reasons one can muster in support of a claim. For example, I might argue that Jim, a repeat felon, is going to commit another crime, if released from prison. I would cite his history of crime as sufficient evidence to maintain his incarceration. Even though it does not establish an objective truth concerning Jim's future actions, reference to Jim's history is relevant to the issue. Although it may be false that Jim will indeed commit a future crime, it does not hurt the sufficiency of my reasons.

Acceptability is a criterion often associated with factual reasons. When this is the case, determining whether one should accept a given reason is a matter of verifying the facts. But the criterion also addresses non-factual reasons. In these cases, acceptability is more difficult to evaluate and in many cases depends on the context. What counts as acceptable (for non-factual reasons) can change depending on who the argument is being addressed to and what the argument is trying to achieve. For example, my students often use traffic as a reason for being late to class and to support my excusing their tardiness. As NJ is a place with common traffic issues, I may accept this reason as a justification for

excusing them, because I recognize that traffic is a real issue in our shared context. If we were in rural Utah, where there is very little traffic, then I would not accept this excuse.

Relevance is concerned with whether the reasons given have any actual bearing on the conclusion they are attempting to justify. There has been significant work done on the issue of relevance within argumentation (e.g., Walton 2004). Theorists in informal logic devote a considerable amount of material to listing the common and problematic ways we violate the criteria of relevance during argumentation (e.g., Capaldi, 1987; Walton, 1989). Examples of fallacies (errors in reasoning) that involve relevance are Inappropriate Appeals to Authority, Ad Hominem Arguments, and Guilt by Association, among others. An example of an inappropriate appeal to authority, which might be used in the case of repeat felon Jim above, could go something like: "My uncle is the best electrical engineer in town and he says you can never trust repeat offenders." The problem with this argument is that the expertise of my uncle is irrelevant to the issue at hand. Knowledge of electrical engineering has no bearing on the actions of career criminals. Even if it is true that my uncle has these qualifications and thinks this way, it wouldn't make a difference when determining the future actions of a convicted felon. In fact, my uncle could also be an expert in theoretical physics and arthropod migration, but the additional expertise does not grant his position any more weight. To make a strong argument about Jim, I need to cite sources of expertise and reasons that have a connection to the conclusion I am trying to draw. My reasons need to be relevant.

Whether facilitators used a criterion like relevance during their facilitation, became an important question to examine during facilitator interviews. A question

established in the Pre-interview Interpretations of Argument Threads (e.g., *How*

important is it to stay on the same topic during a discussion?), helped me understand how

and whether facilitators think of relevance. I included two additional questions to explore

this issue further during facilitator interviews:

- In your opinion, how does staying on the same topic during a discussion relate

  to argument quality?

- How familiar are you with the relevant arguments that have been constructed

  around this issue?

The second question is based upon claims in critical thinking/argumentation theory, that

testing for relevance depends on having a certain amount of background knowledge in

the relevant field. This claim is made most prominently by John Mc Peck in his book

Critical Thinking in Education (1981):

> It is a matter of conceptual truth that thinking is always thinking about X, and that
>
> X can never be "everything in general" but must always be something in
>
> particular. Thus the claim that "I teach my students to think" is at worst false and
>
> at best misleading (p. 4).

McPeck (1981) goes on to point out that the implications of this insight; even if we can

develop general skills, they are nothing, unless they are alloyed with discipline specific

knowledge. McPeck's view has been challenged, supported and explored by various

critical thinking theorists (e.g. Blair, 2012; Ennis, 1980; Norris, 1984; Paul, 1993), with

few in full agreement. Still, most agree that some level of relevant background

knowledge contributes to our ability to think critically and evaluate reasons. Given the

claims about background knowledge, I wanted to learn if the facilitator's own background knowledge helped them to facilitate. This was explored further in the interviews.

The emergence of additional criteria for *argumentation quality* and the application of the Modified Erduran Framework allowed me to make a number of interpretations concerning *facilitator moves*. Those are presented in the next section.

Findings from the Analysis of Discussion Transcripts: Facilitator Moves

In this section, I present findings from my Analysis of Facilitator Moves. I then provide some interpretations about how facilitators contribute to *argumentation quality*. I conclude the section by identifying questions and concerns that inform the Analysis of Facilitator Interviews.

As I mentioned in the Analysis of Facilitator Moves, I reduced and revised the initial set of moves. By the end of the analysis, I focused on 7 moves that were used frequently and seemed to influence *argumentation quality* the most. Below is a table representing the frequency of moves used in the different *argument threads*. I included the total word counts, level of argumentation quality and total moves.

Table 12: Facilitator moves per thread and total moves per thread (word count / level of argumentation quality)

Turns / Level	Distilling	Identifying or Completing a Warrant	Locating	Naming Moves	Paraphr asing	Probing Reasoning	Re-Directing	Total Moves
F1 (Auth), D1								
Thread 1 (92 / 4)	2	6	6	3	13	3	5	38
F1 (Auth),D2								
Thread 1 (55 / 4)	2	1	4	5	6	3	2	23
Thread 2 (22 / 4)	2	0	2	0	2	1	3	10
F2, D1								
Thread 1 (105 / 4)	7	1	9	11	11	2	2	43
Thread 2 (7 / 2)	0	0	1	0	0	1	1	3
F2, D2								
Thread 1 (48 / 4)	1	0	7	12	2	0	9	31
Thread 2 (27 / 4)	1	0	3	6	2	0	1	13
F3, D1								
Thread 1 (49 / 4)	3	2	4	0	10	3	0	22
Thread 2 (19 / 3)	0	1	2	0	3	1	0	7
Thread 3 (6 / 2)	0	1	0	0	1	1	0	3
Thread 4 (25 / 4)	0	0	1	2	4	5	0	12
F3, D2								
Thread 1 (38 / 3)	0	0	2	4	1	1	1	9
Thread 2 (46 / 4)	1	1	4	5	3	0	2	16

The table presents the variety of moves used during quality argumentation. As was the case with *core argument features,* the shorter the *argument thread*, the fewer moves that were made. Regardless of their frequency, facilitator moves generally served two important functions: to clarify the content and the process of argumentation. Facilitators used moves to clarify the content of individual student statements and arguments, e.g., *Distilling, Identifying or Completing a Warrant, Paraphrasing* and *Probing Reasoning*. Their moves also clarified the process of argumentation e.g., *Locating* and *Naming Moves*.

All three facilitators utilized each of the moves during facilitation. Table 13 shows how the different *facilitator moves* were distributed across the three facilitators.

Table 13: Distribution of facilitator moves by facilitator.

	Distilling	Identify or Complete a Warrant	Locating	Naming Moves	Paraphrase	Probing Reasoning	Re-Directing
F1 (Auth)	6	7	12	7	21	7	10
F2	9	1	20	28	15	3	13
F3	4	5	13	11	22	11	3

Although the table shows general similarities across the three facilitators, there were individual differences in usage and frequency. For example, Facilitators 1 and 3 used *identify or complete warrants* at almost three times the rate of Facilitator 2. Conversely, Facilitator 2 *names moves* at more than twice the rate of the other two. The variation in move use could be a consequence of the particular questions explored and/or the groups' dynamics. The variation could also reflect general stylistic differences among

the facilitators. Importantly, these differences in frequency and use of moves did not

translate into significant differences in *argumentation quality*. All three facilitators

reached Level 4 *argument threads*. There was only one case in which discussion threads

reached Level 2. This instance is discussed further in the findings from the facilitator

interview.

One interpretation I made concerning facilitator moves involved the activation of

Background Knowledge. During my analysis, I wondered how facilitators were able to

hear certain features in student arguments. The intervention seemed to require more than

simply tracking arguments and clarifying process. It seemed the facilitator must have

some familiarity with the arguments, criteria and concepts relevant to the *big question.*

This interpretation was largely grounded in my own experience as a facilitator in the

study. In many cases, I was able to hear important counter-arguments, examples and

criteria in student statements, because they reminded me of something I had studied or

heard in a similar discussion. For example, in the discussion on the *big question: How*

should we determine the consequences? I *paraphrased* a student's statements that

reflected general theories covered in ethics.

> Winston: Just, the same consequences. 'Because if it happens, by accident or on
>
> purpose, you can't really say the same. It's about consequences.
>
> Facilitator 1 (Author), D1: So you're still saying that it's only about the outcome
>
> (*Paraphrase*). So, if somebody gets hurt, then you should suffer the
>
> consequences, whether it's an accident. Okay. Is there agreement with
>
> that, disagreement with that?

Here, I am sensitive to the fact that this student is generating what philosophers call a consequentialist view (Blackburn, 1996). Such views claim that the outcome of an act determines the rightness or wrongness of the action. These views and responses to them are explored in a variety of ethics textbooks (e.g., Burnor & Railey, 2011; Olen, Van Camp & Barry, 2007). One key concern with consequentialist views is that they fail to account for the role of intentions when determining wrongfulness, guilt or punishment. Because I was familiar with these and competing views, I included the term "accident" in my *paraphrase*. The example of an accident was brought up by a student in a previous turn. It hinted at the problem with consequentialism, which is that, there are good reasons not to blame people for some consequences. By *paraphrasing* as I did, I hoped to increase the group's attention to this potential alternative. My familiarity with the issue also contributed to my *paraphrasing* Winston's view more strongly than he presented it e.g., *So, you're still saying that it's only about the outcome.* By including the word "only" I was inviting a *challenge* from the group. I did so by framing the argument in the strongest terms (having no exception). My knowledge of the alternative views contributed to my responding as I did. However, the move did not reflect an attempt to introduce new ideas or content. Rather, it was an attempt to increase the group's awareness of a viable alternative, present in the discussion. As a facilitator, I would not have introduced the example of an accident because it could lead students in a direction they may not be interested in exploring. However, I was comfortable bringing attention to it once it had been offered. Two questions from the Facilitator Interview Protocol

helped test whether the other facilitators use or rely on familiarity with the subject matter when facilitating:

- How familiar are you with the relevant arguments that have been constructed around this issue?

- Why did you make this move here?

Although my experience as a facilitator made the above interpretation possible, additional interpretations were complicated by that same experience. Throughout the analysis, I was struck by how often a code would capture the function of a move, but failed to capture the motivation for the move. For example, my reasons for using a *distilling* move often went beyond a desire to clarify or highlight a specific part of a statement (its function). The move also involved a decision about what not to highlight. For example, in the discussion concerning who should be able to vote, I used distilling to avoid a part of a statement.

Aaron: Yeah, because it would be hard to like, exclude them from everybody else and it wouldn't be fair to them.

Facilitator 1 (Author) D2:   Hmm. Okay. So we choose an age **just to be fair** (*Distilling*) then.

Aaron: [slight nod] Gina.

Gina: I don't think it's just to be fair. I mean, I think that they expect people to be mature. But really, there's kids at 18 who die from doing stupid stuff. Like, how are they going to tell us what's good for the country

and stuff, if they're doing stupid stuff? You gotta be pretty dumb to do
some stuff that kids do.

I used *distilling* to highlight the idea of Fairness, rather than talk about the
practicality of excluding some people (which is also part of Aaron's statement). I felt the
idea represented an interesting counter to the views presented by other students (e.g., that
age represented maturity or a certain level of knowledge) and hoped it would initiate a
challenge. More importantly, I wanted to avoid any speculative discussion about ways
that people might be able to exclude others. In this case, the use of *distilling* paid off by
evoking a *challenge* from Gina e.g., *I don't think it's just to be fair*. Notice too, that
Gina's *challenge* was aimed at the terms I provided e.g., *just to be fair*, rather than Aaron.
The move was motivated by my general desire for students to avoid speculation about
examples and instead work through contrasting positions. It is also a reflection of the
value I place on disagreements during inquiry. The important point illustrated by the
example is the disparity between the motivation behind the move and its function. This
issue brings out a deeper problem for the analysis.

If facilitators used different moves for different reasons, and if a given move did
in fact represent motivations that went beyond the move's ostensible function, then
understanding how facilitators contribute to argumentation quality could not be
determined by a code-based analysis of the moves alone. Consequently, during the
Facilitator Interviews, I explored the underlying beliefs of facilitators.

Research suggests that exploring the facilitator's pedagogical beliefs and
principles can offer important insights into why the facilitators used the moves they did

(Johnson, 1992; Kagan, 1992; Pajares, 1992). Studies show that beliefs provide a general

foundation for action (Borg, 2011) and impact teacher decisions (Arnett & Turnbull,

2008; Isikoglu, Basturk, & Karaca, 2009), although the findings are mixed in terms of the

strength and consistency of this impact (Basturkman, Lowen and Ellis (2004).

A study by Breen, et al. (2001) offers a helpful framework for examining the

relationship between teacher beliefs and practices. This framework is depicted in Figure

2. The authors defined the concept *pedagogic principle* as a kind of principle that derives

from the practitioner's more abstract beliefs about teaching and learning and that serves

to mediate between these beliefs and their instructional decision making.

- Abstract or Philsophical Beliefs
  - Ex: Students deserve a chance to shape their own educational experiences
- Pedagogic Principle
  - Ex: The teacher encourages students to guide the process and content of the inquiry
- Particular Techniques and Decisions
  - Ex: The teacher asks students to develop their own nominating strategy for determining who talks and when
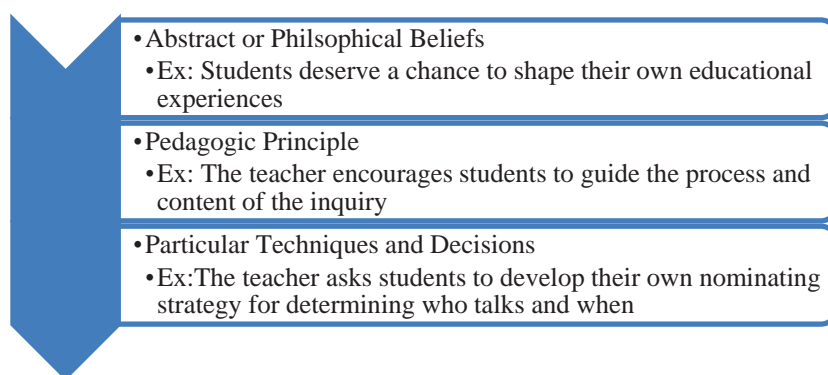
Figure 2. Relationship between beliefs, principles and moves. Based on Breen
et al., 2001, p. 473.

According to this framework, principles are derived from beliefs concerning the more

general educational context, including "the nature of language, how it is learned and how

it may best be taught" (p. 472). Principles, in turn, guide decisions concerning specific

techniques (such as *facilitation moves*) and moment-to-moment decisions within a

specific context.

Given the limitations of the code-based analysis to capture the facilitators'

motivations and this study's concern with how facilitators contribute to quality

argumentation, I drew from my own experience to identify a set of pedagogic principles.

I then looked to see if these principles may be guiding other facilitators as well. I discuss

the principles derived from my practice in the following section.

Findings from the Analysis of Discussion Transcripts: Pedagogic Principles

In this section, I present the *pedagogic principles* that emerged during the

Analysis of Discussion Transcripts. For each *pedagogic principle*, I provide examples

from the transcripts to help illustrate them. I identified three *pedagogic principles* that

informed my facilitation and potentially explained moves by the other facilitators. They

were:

- Track the Inquiry

- Work Toward a Reasonable Judgment

- Let the Inquiry be Student Driven

The first *pedagogic principle* that motivated my own facilitation was to help the

group *Track the Inquiry*. As I facilitated, it was important to me to help the group see

where and how they were progressing in their inquiry. *Tracking the inquiry* is about

helping the group to see where their current thinking and statements are located. It

involves relating individual statements to each other and the inquiry as a whole. When I

track the inquiry I also clarify how a given intervention functions within the inquiry.

There were a few reasons why this was important for me. First, I assumed that if

the group was clear about what was going on and where the inquiry stood at any given

point in the discussion, it would be easier for them to enter into the discussion and contribute to it. Second, I hoped that if students could clearly see that they made progress and felt like they contributed to it, then they would find inquiry more meaningful - not just the particular inquiry, but the process of inquiry in general. This is a more general philosophical and epistemological commitment I hold and associate with all of my teaching practices. Finally, being clear about the inquiry allows the inquiry to be more productive. Being productive is a separate *pedagogic principle* discussed later in this section.

Tracking the Inquiry is a *pedagogic principle* related to the maxim of "following the inquiry where it leads," often evoked in the literature on Philosophy for Children (Gregory, 2003; Kennedy, 2013; Lipman, Sharp & Oscanyan, 1980; Splitter & Sharp, 1996). The maxim grows out of a normative commitment associated with the pragmatist epistemology that informs the program. Within a pragmatist epistemology, the most reasonable answer or belief that one can hold is the one that has been scrutinized through a clear and coherent process of inquiry and ultimately tested in experience (Dewey, 1997; Peirce, 1955). The epistemological maxim demands that individuals self-correct in light of the results of their inquiry, rather than arrive at pre-established truths often imposed by an external authority. Thus, in a pedagogical process aligned with this epistemology, the facilitator must track and help the group follow the inquiry as it unfolds, rather than guide it to a particular answer.

I used a number of moves to *track the inquiry*. In some cases, I used *locating* to make the group's path clear. At other times, *naming moves* helped me with this task. I

tracked the inquiry explicitly, helping the group see what they were doing in the inquiry.

I also did this internally, as a way of organizing the discussion for myself. In the

following example, I used *locating* to contribute to help *track the inquiry*.

> Facilitator 1 (Author), D1:   I mean because we've already said if we break
>
> multiple laws, the severity should increase, right? Um... and we've said
>
> that if you intend to do something, the severity should increase. Some
>
> people have said that. **But this seems to be like**, my ability to predict,
>
> or something. (Discussion 2007)

Here, I use *locating* to point out that the statement offered something different. I suggest

that it represents a "new" position (e.g., *But this seems to be like,…*) as a way of marking

a move forward in the line of inquiry.

Other facilitators appeared to *track the inquiry* as well. Tracking was evidenced

by the facilitator's ability to locate and remind the group about issues that were

previously generated and needed to be resolved:

> Jacob: He's saying that if you're intelligent at sports- if you're good at
>
> baseball, you're intelligent in it? You're smart at it.
>
> Facilitator 2, D1:   Well, we haven't solved the smart/intelligent distinction yet.
>
> Some people are saying that they're different. (Discussion 2007)

In this episode, the facilitator reminds Jacob that his restatement of another student's

ideas raises an issue yet to be settled. The move suggests there is more work to be done.

It also indicates the facilitator is keeping track of the development of the group's theory

of intelligence, an issue related to their *big question*. Facilitators also used *naming moves* to *track the inquiry*.

> Facilitator 2, D2: We'll have to slow down to work out **this distinction**. Actually,
>
> we've got **several sorts of distinctions** we haven't resolved.
>
> (Discussion 2007)

Here the facilitator uses *naming* to point out specific things the group is working on e.g., *this distinction,* along with things that haven't (e.g., *Actually, we've got several sorts of distinctions we haven't resolved).*

Below is another example of *naming,* associated with *tracking the inquiry*, this time from my own practice.

> Facilitator 1 (Author), D2:   I think I've heard **some assumptions**, in our
>
> discussions so far, that we're assuming that once you reach, that when
>
> you're older that you know about politics or that you won't be
>
> influenced by commercials. (Discussion 2007)

In this discussion, I wanted to remind the group that there were assumptions that remained unexamined, and also to indicate places where they could advance the inquiry – by testing those assumptions.

Keeping track of the various arguments, *argument threads* and the resulting theories was both a challenge and a priority for me. Throughout the inquiry, I listened closely to student statements, while simultaneously keeping a record of how those statements fit together as a whole. I tried to maintain a sense of how that "whole" related to the *big question.* This was important for me, regardless of whether I shared what I was

tracking with students or not. These priorities informed my use of moves in general and helped me to *track the inquiry*. I used the facilitator interviews to examine whether the other facilitators were concerned with *tracking the inquiry*. Three questions helped me to explore this with them.

- What is the role of the facilitator during *Inquiry dialogue*?

- What do you keep track of during the discussion?

- Why did you make this move here?

Findings and interpretation associated with tracking the inquiry are discussed in the next chapter.

Another *pedagogic principle* that emerged from the analysis of discussions, I termed *Work Toward a Reasonable Judgment*. The principle reflects a desire to help the group develop a thoughtful response to their *big question*. This was certainly a concern in my facilitation and guided my use of a number of moves. This concern reflected a desire for more than a high level of *argumentation quality* or the generation of *argument features*. I tried to facilitate in a way that helped students to explore complex views that challenged their common beliefs and assumptions concerning the *big question*. I wanted them to push deeper into the question or concept, to test its limits and implications, to go beyond a general survey of opinions on the issue. Quality argumentation is an important tool in that process, rather than the goal of the process.

This principle is greatly influenced by my training as a student of philosophy. In my particular case, *working toward a reasonable judgment* can be understood as engaging in good philosophical process. Aspects of that process include: defining terms;

working through problematic cases; being comprehensive in our considerations; working

for consistency and coherency of beliefs surrounding an issue; working via a process of

elimination; being logical in our thought process; grounding theory on established truths,

and drawing upon diverse and contrasting perspectives, among others (Law, 2007;

Stubley, 1992). These procedural aspects of philosophical inquiry are consistent with

how authors in P4C discuss the process of a philosophical discussion. Lipman, et al.,

(1980) identify strategies of philosophical dialogue including, seeking consistency,

requesting definitions, searching for assumptions, indicating fallacies, requesting reasons

and examining alternatives. These aspects of a good philosophical discussion go beyond

simply constructing good arguments. They are about arriving at a systematically

examined and well-informed judgment about a contestable issue.

In my facilitation, I used *re-directing, distilling* and *paraphrasing* to *work toward*

a reasonable judgment. As I discussed in Chapter 4*, re-directing* is a move used to shift

attention to a given statement. I used the move to shift the group's focus to statements

that I felt deserved further attention. The following excerpt from the discussion on voting

is an example of this.

> Gina:　　I think that you should be able to vote, uh like Jess said, even may be a
> little younger. Because, like, stuff like the president everything,
> everyone should have a say in that 'cause it's almost like, it's
> everyone's country. And especially stuff for school. The kids should
> be able to vote. 'Cause you know what? The parents don't come here.

> They're not the ones that are benefiting from it. It's us! And we should have the say in what we get. Ryan.

Ryan: Can't the parents tell their kids to vote for someone? And they can make them vote.

Facilitator 1 (Author), D2: They can make them do it.

Ryan: Yeah.

Facilitator 1 (Author), D2: So, you're, *concerned* about the thing that Carson said, but do you agree with Gina, that ultimately if we could get rid of the pressure that you should be able to vote? Especially, about things involving education? (*re-directing*) (Discussion 2007)

In this instance, I am concerned that Gina's argument is going to get lost. Her idea, that we should be able to vote on things that have a direct impact on us, represents a nice contrast to the views established prior to her turn (e.g., *You should be able to vote when you know about the thing you are voting on* and *You should be able to vote when you can handle the pressure*). I feel her view represents the most valuable contribution to the inquiry at that point. I use *re-directing* as a way of avoiding any further follow-up on the issue of parents forcing kids, at least until Gina's view can be explored.

There were instances that I felt the other facilitators used moves to help the group *work toward a reasonable judgment*. The facilitators often focused the group's attention on things that would help the inquiry move forward. Here is a case of *Re-directing,* from the discussion about invading other's privacy that seemed to indicate activation of the principle.

Facilitator 2, D2:   Ok, Maggie, before you say whatever you want to say, Kim

has made a **crucial** distinction which nobody's mentioned yet. Could

you…OK, I'll clarify the distinction, and then you can go on. The

distinction that she's made is that it's OK for the authorities to come in.

She made the example "drugs," because somebody else made the

example...

Kim: They still need to get permission to do that.

Facilitator 2, D2:   Wait, let me finish. She made a distinction between authorities

looking for something, which they consider dangerous, and every

other case in which people are just kind of barging into your house

whenever. So basically, she, I won't… **I don't want to just pass that**

over. I mean, somebody might not quite agree, and we might want

to talk about what sort of rights authorities have to invade your

privacy. (*re-directing*) (Discussion 2007)

In this example, the facilitator appears to use *re-directing* to communicate more than the

fact that Kim's contribution has been passed over. He calls Kim's distinction "crucial,"

indicating his evaluation of its value to the inquiry. His intervention also communicates

how the students might go about making use of Kim's distinction. In this case, *re-*

directing appears to represent a concern for *working toward a reasonable judgment*, in

addition to serving its general function of directing the group's attention to a specific

statement. The Facilitator Interview helped to clarify whether the facilitator was

activating such a concern.

Facilitators appeared to use *distilling* to *work toward judgment.* In the example below, from the discussion defining intelligence, the facilitator *distills* a student's statement down to the issue of being well educated and then continually follows up on the terms he distilled. He uses *paraphrasing* to support the intervention.

Mason: I agree with both Kim and Ephraim. And I also think Intelligence is, a
             well-educated person.

Facilitator 2, D1:   How does that connect with Kim's and Ephraim's'?

Mason: By being smart. I agree and disagree

Facilitator 2, D1:   But you said "**well educated**"(*distilling*) first. I'm not quite
             sure what you meant.

Facilitator 2, D1:   Could you clarify what you mean by "**well educated**" Mason?

Amy: Um, I think he meant that he agreed with Ephraim and Kim, and then
             he said a few things also.

Facilitator 2, D1:   Right, but I'm just wondering how he thinks it connects
             with…

Amy: It doesn't. He just said something different

Kelly: He said his definition of it...

Mason: I agree and I disagree so.

Facilitator, D1:   OK. So you're saying that a person cannot be intelligent,
             unless they are educated. (*paraphrasing*)

Mason: Yes. Yes.

Facilitator, D1:   Not just educated. A person- no one is intelligent who is not

well educated. (*paraphrasing*) (Discussion 2007)

In this lengthy example, the facilitator does not seem to want to let the statement,

connecting education and intelligence, get lost. He begins by making a *distilling* move to

bring attention to it, but then stays with the intervention until finally offering a

paraphrase that Mason is happy with.

Facilitator 3 used a different combination of moves in an apparent attempt to

activate the principle *work toward a reasonable judgment*. In this episode from the

discussion concerning the question of where we should keep animals, she uses *probing*

reasoning in conjunction with *paraphrasing* to draw out criteria being used by the

students.

Facilitator 3, D1: Who just said- did somebody say that's cruel? Or did I just hear

something? Who said it's cruel? Terrence, you said that's cruel? Why

is keeping an animal in a circus different, or the same as keeping it in

the zoo? (*probing reasoning*) Because nobody said that keeping them

in a zoo is cruel, but now Terrence is saying that keeping and animal

in a circus is cruel. (*locating*)

Terrence: Because they like, try and teach them tricks, and like, they weren't

supposed to make like, costumes. Yeah, and they make them like,

jump through those fiery rings

Facilitator 3, D1: And that's cruel? (*probing reasoning*)

Terrence: Yeah, because they are supposed to have like, fresh air, they're not supposed to be traveling everywhere. Oh yeah, and they have those whips.

Facilitator 3, D1:   Oh. Ok, so hold on a minute. They teach them tricks, they whip them, they keep them inside, (*paraphrasing*) and so that- those are three reasons for why that's cruel. And when they put silly costumes on them. Ok, so what if I was a dog owner and because it's ten degrees outside I put a doggy sweater on my dog and take it to the park and try to teach it to jump through hoops and if it didn't listen to me I'd hit it . Would I be cruel? (*probing reasoning*)

Students: Yeah, Yes

Terrence: Some of these costumes in a circus have collars and they put hats on them.

Facilitator 3:   But they're just trying to make the lions look pretty.

Terrence: Yeah, but it's, but you don't know how the lion feels

Facilitator 3, D1:   We don't know how the lion feels. So animals feel something. It's cruel because animals... (*paraphrasing*) Who just said that that they lose their dignity? Katie, what is, what do you mean by lose their dignity?

Katie: They, they are not like, independent anymore.

Facilitator 3, D1:   That's what dignity is?

Katie: I guess (students laughing) (Discussion 2007)

Here, we see the facilitator take a significant amount of time to draw out the criteria that make circuses cruel. Even though Terrence offers cruelty as the reason for why circuses are bad, the facilitator seems to question the sufficiency of the reason. She wants to know how circuses are different from zoos, in terms of cruelty. She continually uses *probing reasoning,* in combination with other moves, until Katie articulates that it is a violation of dignity that makes circuses cruel, and cruel in a way that is different from zoos. Had the facilitator left this issue unexplored, zoos and circuses would have remained equivalent, and dignity would not have been evoked as a criteria.

I used the Facilitator Interview to explore whether my interpretations about *working toward a reasonable judgment* were accurate. Three interview questions were used to explore this issue:

- What do you see as the value of *Inquiry dialogue*?
- What are ways to enhance argumentation quality during a discussion?
- Why did you make this move?

Open coding of interview transcripts helped to identify instances of this principle as well.

There was one final *pedagogic principle* that guided my own facilitation, *Let the Inquiry be Student Driven.* This *principle* worked in constant tension with the other principles discussed in this chapter. It is this principle that kept me from taking over the discussion. In a sense, the principle supported the strategic use of all moves, by forcing me to be measured in their use. The principle functioned as a kind of meta-principle, concerned with how other principles get activated. Previously, I presented an excerpt from the discussion concerning how to determine the consequences, as evidence my

activation of *background knowledge*. There, I showed how my understanding of the

ethical theories associated with morally right and wrong actions helped me to identify a

specific view emerging during the discussion. My familiarity led me to *paraphrase* as a

way of inviting a challenge. Here is that excerpt again,

> Winston: Just, the same consequences. 'Because if it happens, by accident or on
>
>   purpose, you can't really say the same. It's about consequences.
>
> Facilitator 1 (Author) , D1: So you're still saying that it's only about the outcome
>
>   (*paraphrase*). So, if somebody gets hurt, then you should suffer the
>
>   consequences, whether it's an accident. Okay. Is there agreement with
>
>   that, disagreement with that? (Discussion 2007)

In cases like these, where I was familiar with the possible directions the inquiry could go

and the relevant philosophical arguments that apply, I could have intervened in a number

of other, much stronger ways. For example, I could have offered my own counter-

argument or counter-example. Instead, the principle of *letting the inquiry be student*

driven led me to *paraphrase* as a way of inviting certain responses from the group. In the

example above, I was hoping it would result in a challenge by another student. This

tension between the other principles and the principle of *letting the inquiry be student*

driven is informed by my study of P4C.

      In P4C literature, a central tenant of a classroom community of inquiry is that it

reflects a mutual respect of teachers and students and resists indoctrination (Lipman et

al., 1980). Given the disproportionate balance of power in existing student-teacher

relations, creating a community of inquiry within a classroom can be quite a challenge. Along these lines, Lipman and colleagues remind the P4C facilitator that:

> It is the teacher's responsibility to assure that proper procedures are being followed. But with respect to the give-and-take of philosophical discussion, the teacher must be open to the variety of views implicit among the students. The students must be urged by the teacher to make such views explicit, and to seek out their foundations and implications. What the teacher must certainly abstain from is any effort to abort the children's thinking before they have had a chance to see where their own ideas might lead. Manipulation of the discussion so as to bring the children to adopt the teacher's personal convictions is likewise reprehensible (1980, p. 45).

Facilitation then is a constant balancing act between principles of modeling and supporting good inquiry, and the principle of *letting the inquiry be student driven.* As a principle concerned with what not to do, it is difficult to interpret a given set of facilitator moves as evidence of the principle. Still, there were instances of facilitators' interventions which seemed to reflect their desire to *let the inquiry be student driven.* One example is that facilitators give students the role of nominating who speaks.

Facilitator 1 (Author), D1:   Natasha, why don't you choose somebody else.

Facilitator 2, D1:   Call on someone, Anna, who hasn't had a chance to speak yet, OK? So we get full participation.

Facilitator 2, D2:   Marquese, pick on someone who hasn't had a chance to speak yet. (Discussion 2007)

In the examples above, the facilitators also prompt the students to include others who haven't had a chance to speak.

Another way facilitators seem to activate their desire for the *inquiry to be student driven* is by using moves to connect student ideas to each other. This is often done by *locating*.

> Facilitator 1 (Author), D2:   Trevor said that, too, yeah? That you should be able to vote for the things that you know about - at least, if it's about politics.
>
> Facilitator 2, D1:   Maybe we should give Matt, um, the opportunity to respond, since two people have disagreed with him.
>
> Facilitator 3, D1:   So in a sense in a sense you are agreeing with John about his statement? Ok, what does everyone think about that? (Discussion 2007)

In these examples of *locating,* the focus is on the students' ideas. In one of the examples, the facilitator uses the move to invite students to respond to those ideas (e.g., *What does everyone think about that?).* In general, the fact that the content of the discussion is predominantly generated by the students supports the activation of the principle.

The language facilitators choose also suggests the presence of the principle. In many cases, the facilitator uses the term "we" as a way of framing the engagement as a shared one.

Facilitator 1 (Author), D2:   So it's, so we're asking a question about when you become an adult or what, what makes an adult?

Facilitator 3, D1:   Ok, so are we changing our minds? Better then to keep the animal in the wild because of the instinct thing? (Discussion 2007)

In addition to the examples above, I relied on the Facilitator Interview to determine whether this principle guided the other facilitators during their discussions. The following questions helped me to explore this further:

- What do you see as the value of *Inquiry dialogue*?

- What is the role of the facilitator during *Inquiry dialogue*?

- Why did you make this move?

The findings from the Analysis of Facilitator Interviews as they relate to these key principles and findings are discussed in the following chapter.

CHAPTER 5 – FACILITATOR INTERVIEWS

In order to learn about how expert teachers facilitate *inquiry dialogue* to contribute to *argumentation quality* during group discussion, I analyzed transcripts for *core argument features* and *facilitator moves*. Then, in order to understand why and how facilitators made the moves they did, I conducted interviews with each of the three facilitators. Each interview consisted of two segments. In the first segment, facilitators answered questions concerning their general beliefs about facilitation and *inquiry dialogue*. In the second segment, the facilitator and interviewer reviewed the facilitator's discussion video. During the review, the facilitator was asked to explain the moves they made. My purpose in comparing the interview results to the results of the transcript analysis was to see if my interpretations concerning their moves matched their understanding of their practice. My purpose in comparing the results of the two interview segments with each other was to see if the facilitators' explanations of moves consistently reflected their general beliefs.

In the rest of this chapter, I discuss the key findings and interpretations from the Facilitator Interviews, as they relate to the code-based Analysis of the Discussion Transcripts. I first focus on the findings associated with assessing *argumentation quality,* including *argument thread length* and *argument thread shifts*. I then discuss findings associated with the *pedagogic principles* presented in the previous chapter.

Interpretations Fom the Analysis of Facilitator Interviews: Argument Thread Length and Argument Thread Shifts

As I discussed in Chapter 4, lengthy argument threads with fewer thread shifts represented higher levels of argumentation quality. Although each of the discussions contained argument thread shifts, one in particular contained numerous shifts that resulted in a low level of argumentation quality. I made an initial case in that chapter that, in addition to the number of shifts, the reason for a shift also had an impact on quality. I also suggested that certain kinds of facilitator interventions (e.g., *challenges)* might generate unintended argument thread shifts. I explore that issue further in this section. To examine how facilitators contributed to the length of argument threads, I compared facilitator responses related to both staying on the same topic and shifting to a different topic.

During my own interview, I expressed that I tried to stay focused for two reasons. The first was that it helped me to organize the discussion. The second was that I perceived a link between focus and certain outcomes. An example of this perceived connection is reflected in the following example.

Interviewer: How important is it to stay on the same topic during a discussion?

Facilitator 1 (Author):   I think it is key. I mean, for me as a facilitator it helps me facilitate, for one. **I organize the whole discussion according to one question. I try and stay focused on that question,** then I think the product of the group… The longer we stay on the question the more views can come up, the more depth we create, the more criteria we bring out and all of that to me creates better arguments with more qualifiers, more data, more warrants. **So, if we can stay focused on**

the one question, more can be done and I think in many cases more is better, more arguments, more argument features. (Interview 2014)

My response also points to the value of the *big question* for my facilitation. In my practice, the *big question* served as a reference point in relation to which to organize the discussion. I also discussed that one of the roles of the facilitator is to help the group stay focused. I suggest that students arrive at a better conclusion when they are focused and working together.

Facilitator 1 (Author):   I think the role of the facilitator is to help the group be more clear about what they are doing, **to be more rigorous and kind of focused in what they are doing**. So the role of the facilitator is to **help the group to work together** and to know and see how they are working together, and **to arrive at better ideas** than they might arrive at alone. (Interview 2014)

Facilitator 2 also framed staying focused as a mechanism for helping the group to make sense of their inquiry, which he described as potentially chaotic.

Facilitator 2:   Well, I guess it has a recursive quality of sort of returning and returning and returning, just because going forward sometimes the proliferation is chaotic and things are introduced which you don't really see the significance of, but you sense that they could and probably do have significance. So, I think the discussion plan or **the question provides a kind of stability and coherence to the**

conversation. I am also struck, in watching these, by the power and the sort of philosophical authority of the question. (Interview 2014)

Facilitator 2 went as far as to suggest that the *big question* has a kind of authority over the group. As was the case in my own responses, Facilitator 2 sees the *big question* as helping to organize what is going on. This is reinforced in his discussion of the role of the facilitator:

> Facilitator 2: In terms of the first dimension (e.g. *promoting habits of reflection)* it is modeling informal logical moves and calling for them, naming them, but also acting to promote genuine reflection on philosophical issues. So it is not just a skill game - grab any old thing and saying 'look, I can do this with this.' **So the content, the question in hand, whether it is like 'What is intelligence?' or 'Is it okay to lie?' are extremely important, and I think that in many ways this will shape the actual dialogue.** (Interview 2014)

Here again, he mentions the power of the *big question* to shape the dialogue.

Facilitator 2 and I are rather consistent in our beliefs about focus. Both of our responses concerning focus frame the *big question* as the point of focus. This was in contrast to how Facilitator 3 framed the issue. Facilitator 3 described focus as a matter of staying on a topic, rather than staying with the *big question*. She expressed the value of focusing on the topic in terms of exhausting the issue. In the example below, she reflected on a common experience in her facilitation.

Author (interviewer):   How important is it to stay on the same topic during a

discussion?

Facilitator 3:   I think it's necessary. I think for students it might get repetitive, but

you do see at certain point when certain moves are made, all of a

sudden there is an Aha! moment and it goes on. So, until you have

exhausted a certain distinction or a student makes a move to really

counter-example the inquiry, I think it's almost invaluable to just stay

on the same topic until it's just exhausted if that's possible. (Interview

2014)

Facilitator 3 indicates here that staying focused, even in cases where it gets repetitive, can

result in new insights that get the group moving again.

All three facilitators' beliefs indicated a commitment to keeping focused on a

topic or question. The value each facilitator placed on staying focused was echoed in

their answers to the question: *How do you decide when to shift topics?* For example, I

relate the issue of shifts to outcomes or in this case making progress:

Facilitator 1 (Author):   Usually we will shift topics… I think it is important to

shift the topic if you reach a point where **you can't make progress** on

your initial question. So, if we get stuck and something else has to be

resolved in order to **make progress** again, then we will shift to a new

question to resolve that sticking point. So if there is a definition that

needs to be made, then we will make a shift in topic, but the only

reason I like to shift a topic is to resolve something so that we can get

back on the first topic. (Interview 2014)

Here, I identify the condition under which I think a shift is justified: if we get stuck. I

frame shifts as a contingency plan for when progress shuts down. In contrast to the other

facilitators, I also frame shifts as temporary. This was evident in the following response:

Facilitator 1 (Author):   I think the only other time that we shift topics is if we had

exhausted a topic in the middle of the discussion. Sometimes it

happens. We might shift just because we can't make any more

progress, but progress is the focus. Again, for me we are trying to

answer the question and we are committed to that. **Sometimes other**

issues have to be resolved to get back to the question and come up

with a good answer. (Interview 2014)

My responses present a consistent set of beliefs. Both focus and shifts are discussed in

terms related to outcomes. I also make consistent reference to the *big question* as the

thing we return to or focus on.

Facilitator 2's responses to the question concerning shifts indicated that he saw

them as a response to a lack of progress on the question.

Author (interviewer): How do you decide when to shift topics?

Facilitator 2:   Maybe because I am sensing entropic, like, we started talking

about privacy and **somehow it didn't seem to be getting anywhere**.

The examples I was sort of trying to tease out, the criteria that one

could develop from each example, and the kids were sort of arguing

over terms and even sort of half misunderstanding each other, **it just seemed to me that it was losing energy**, so I actually quite arbitrarily shifted to another question. Which was from the same discussion list that we generated, so it wasn't total arbitrarily introduction but maybe because I also thought that there was some hidden correspondence or relationship between privacy and lying. (Interview 2014)

In this response Facilitator 2 identifies shifts as a strategy for responding to a lack of progress. In his reflection on a particular shift, he describes multiple attempts to "tease out" criteria before making the shift.

In the case of Facilitator 2 and I, our beliefs about focus and shifts appeared to reflect a consistent concern to make progress on the question. In my case, I even frame shifts as a thing in service of the initial *big question*. Facilitator 3, on the other hand, discussed shifts in ways that were less focused on the question. She did frame shifts as an issue of productivity. Similar to Facilitator 2, she talked about shifts as a response to the group's energy. But, she also introduced criteria and strategies that offered a different interpretation.

Author (interviewer):   How do you decide when to shift topics then?

Facilitator 3:   If I think the concept has been probed efficiently… **If I feel like the students really are not understanding**, but they have made some particular contributions and then **I can take those contributions and re-problematize the question**, then I will do that. I don't want to say it's a general boredom, but for students it's like, "Okay, when we have

had enough, we have had enough." For me I try not to switch gears in the middle of any classroom or session. **I will come up with some way to prompt the inquiry**, so it's more of a sense of **we have completed the inquiry to the best of our ability and there is a general interest in maybe a second corollary question or you want to pursue another topic and that's fine with.** (Interview 2014)

Facilitator 3's response presented a complicated mix of motivations and strategies. Even though she discussed "exhausting" the issue in her previous comments, she seemed satisfied with less in her consideration of a shift, e.g., *If I feel like the students really are not understanding, but they have made some particular contributions and then I can take those contributions and re-problematize the question, then I will do that.* If re-problematizing means a shift to a different question, then this seems counter to "exhausting" the issue. She also referenced strategies that I wasn't sure how to interpret (e.g., *I can take those contributions and re-problematize the question; I will come up with some way to prompt the inquiry)*. I used the Review of Facilitation segment of the interviews to further explore her and the other facilitators' use of shifts.

To see whether the facilitators' pedagogic beliefs concerning staying focused and shifting topics played out in their facilitation, I compared those beliefs, as stated in the General Beliefs and Practices segment of the interview, to their explanation of their own moves in the Review of Facilitation segment of the interview. The result of this comparison suggested that Facilitator 2 and I were more consistent between our

explanation of moves and our stated beliefs than Facilitator 3, who was less consistent. The following paragraphs illustrate these interpretations.

I my interview, I reported using shifts in the topic as a way of supporting the initial *big question*. This belief was consistent with how I explained a significant shift which occurred in one of my discussions. My belief aligned with moves I made to resist a shift in the question or topic. In the following example, I explain why I made a move to define adulthood, during the discussion on voting. I include the relevant segment of the discussion first.

> Facilitator 1 (Author), D2:   So it's, so we're asking a question about when you become an adult or what, what makes an adult.
>
> Gina: Yeah
>
> Facilitator 1 (Author), D2:   So, what's an adult and when do you become one? So, what do we think? (Discussion 2007)

During the interview the interviewer stopped the video at this point.

> Interviewer: So, you are changing the big question?
>
> Facilitator 1 (Author):   A little bit yeah. I am not leaving the big question. I just feel like this might be a better way to resolve it. If we can resolve this issue we can **plug it back in to the big question and we might be working better that way.**
>
> Interviewer: So, it's like a detour?
>
> Facilitator 1 (Author):   Yeah, we detour. (Interview 2014)

Here, I frame the shift as being in service of the *big question.* I talk about "working better." This explanation is consistent with my statement concerning shifts e.g. *So if we get stuck and something else has to be resolved in order to make progress again, then we will shift to a new question to resolve that sticking point.*

Here is another example where my explanation of a move (*re-directing)* proved consistent with my beliefs concerning focus. During this discussion, the students had a tendency to get caught up in examples.

> Kayla: I disagree with Jordan because if you do it on accident because there's like, ice on the road, then everyone would know that there's ice on the road and you would slip on the ice and then, like, hit into somebody else's car. But if it's just like, a nice day out, and you ram into somebody's car, then it's not really an accident.

> Nate: What if the sun got in your eyes? [laughter] What if the sun gets in your eyes, like, when it's really shiny? [laughter] (Discussion 2007)

Here, Nate was contesting the example that has been given. I intervened to get the group back on track:

> Facilitator 1 (Author), D1: Well, we could think of a lot of scenarios, right? But the police go and ask people "Well, when that guy got in his car, was he mad?" or "Were the roads icy." But we need to deal with this question "How do we begin to determine what consequences should be?" and "Should they be same?" (Discussion 2007)

My explanation of this move during the interview shows my concern for focus.

> Facilitator 1 (Author):   Yeah, so I am just redirecting again. It seems like they
>
> can't…Every time somebody makes an argument, like, a move to
>
> answer the question, a student follows up by exploring or talking about
>
> the example. So **it is just back to trying to focus them again**.
>
> (Interview 2014)

At one point during the review, I explain another strong intervention. In the later part of

the explanation I make clear that staying focused is a value for discussions.

> Facilitator 1 (Author):   So, I kind of intervened because I felt like there was no
>
> way to get it back on track. And this is one of the earlier discussions
>
> too **so I am also trying to just begin to teach them what being**
>
> **focused is about. That this (inquiry dialogue) is not about talking**
>
> **about examples.** (Interview 2014)

The consistency between beliefs and explanations during the interview indicates that a

concern for focus informed my facilitation. This may in part explain the relatively high

focus of my discussions (indicated by only 3 total argument threads in 2 discussions).

During the Review of Facilitation segment of the interview, the explanations

from Facilitator 2 were also consistent with his previously reported pedagogic beliefs.

During the review, I asked Facilitator 2 to explain his call for a definition during the

discussion about invading privacy. I include that move from the discussion transcript

below:

> Facilitator 2, D2:   Actually, what I'd like to do- I'm going to step in here and ask
>
> that we actually start with a definition of privacy, because we're all

also assuming that what you mean by privacy, is the same as what I

mean by privacy, that somebody from Indonesia, what they mean by

privacy means the same thing as somebody from Brazil or somebody

from the States, etc. We're assuming all those things, as if privacy is

something that everybody understands. So I'd like to actually, if we're

going to start again, start with a call for a definition. (Discussion 2007)

Here the facilitator uses *re-directing* to shift the focus of the discussion toward a

definition. In the General Beliefs and Practices segment of the interview, he claimed to

use a shift when he sensed "entropy" and referred to an example where "it didn't seem to

be getting anywhere." Here his explanation seems to involve a similar motivation.

> Author (Interviewer):   Why the call for definition here and what was going on
>
> that makes you think this is how we should start up again?
>
> Facilitator 2:   Maybe, I wanted to generalize or universalize the concept more. I
>
> felt that it was just being applied to this one example of, again which
>
> has this sort of legal implications of justifiable intrusion. **And maybe I**
>
> **wanted to get past that, maybe I actually thought that wasn't**
>
> **going to work, and so I wanted to think about privacy more**
>
> **phenomenologically.** (Interview 2014)

Here the facilitator diagnoses the approach the group is taking toward the big question

e.g., *I felt that it was just being applied to this one example, ...maybe I thought that*

wasn't going to work... His explanation suggests that he is adopting another strategy that

will work. It is also consistent with his claim that he uses shifts when the inquiry isn't

"getting anywhere." This is similar to my initiating shifts when progress has ceased. In another instance of *re-directing,* Facilitator 2 described a similar motivation – to support the group's progress. The episode is provided here.

Marc: Yeah, but, really- if you're, if you're intelligent you can solve the

problem. I don't think really be that intelligent to solve a problem on

the blacktop.

Facilitator 2, D1:   He had another example which was- what?

Marc: Well, it could be a scientist, the scientist trying to figure out

Mason: That one I agree with because you have to be intelligent with that one.

You have to be intelligent to figure out, like, like, the combination or

something. But on the black top you don't really need that much

intelligence to figure out the problem.

Facilitator 2, D1:   So, like, a conflict, you mean? Like, a human problem. Maybe

we should give Marc, um, the opportunity to respond, since two people

have disagreed with him. So he might want to clarify what he meant?

(Discussion 2007)

Below, he explains the move during the interview.

Facilitator 2:   Because it's problematic. I am attempting to find somebody who

will critique it, who will sort of **break the hold of this particular**

little configuration and I am thinking that Marc can do it. (Interview

2014)

Facilitator 2 and I explained our use of strong moves like *re-directing* as attempts to work through a problem, to support progress on the question.

Facilitator 3's explanations appear consistent with her stated beliefs as well. This was most clearly the case in her second discussion, which was the more focused of the two. An example of her commitment to the question was reflected in the following statement where she set up the second transcript:

Facilitator 3:   Can I start out with saying something before we start this particular segment? I think what's important for me in this segment and re-watching it, is that an original logical statement was thrown out and we are not watching it, but I do think it's relevant to how this inquiry goes. And it was a student's question not mine. It's about logical statements and their converses, so she asked if all humans are animals, why are all animals not humans. So, I thought that was a brilliant move and before we move into the sort of genus and species and I think that sort of sets the ground for why this is going into similarities and differences. This is a lot of distinction making here, but I don't think it would be… I thought that would be a great foundation to start from logic and the converse, so that was a straight forward move in logic and I wanted to start with that.

Author (Interviewer):   Thanks for giving the context, I think it's important, especially because it's interesting here because it's purely a logical and descriptive problem that she is engaging with. So you explore it and

the way you activate it is by saying "How are they similar and different?"

Facilitator 3:   Yes, **this whole segment is grounded in answering her question, and I believe at some point I go back and say 'did we clarify your question?'** so we just use lot of distinctions, similarities and differences. But she really wanted to know I think on a more logical level why? isn't the converse work? (Interview 2014)

Here Facilitator 3 describes her approval of the issue to be explored e.g., *So, I thought that was a brilliant move; I thought that would be a great foundation to start from logic and the converse.* She also describes the "segment" as being grounded in the student's question. Additional statements by the facilitator imply the focus was intentional. Here she is responding to a follow-up question:

Author (Interviewer):   Is there anything different in how you facilitate those kinds of inquiries, the "should" versus this kind of definitional one?

Facilitator 3:   I was more focused on argumentation here. I was focused on criteria, distinctions, so I wasn't really interested in anything normative. **I wanted to answer her original question**. I wanted – the students say, so why aren't animals – because they want to equate the two and anybody knows logic knows you can't do that in the converse. So, it was really an inquiry about how come we can't switch them around and that to me is where it just wanted to stay, there is nothing normative about this. (Interview 2014)

The above response from the facilitator illustrates that in the case of this discussion (F3, D2), she ignored or repressed her more general desire to push the discussion toward normative considerations rather than being descriptive. She describes that desire in the following response to the question: *Has your approach to facilitation changed since then and if so how?*

> Facilitator 3: No I wouldn't say my approach has changed, my audience has changed. It has been a while since I have done philosophy with children, but my pedagogy is consistent, it is problematizing, it is making conceptual distinctions**, it is moving students from a descriptive psychological level to a normative level, that is what I do, that's is what I study and that's where I think that discussion has to happen**, I think it has to have relevance to description but unless it's pushed to the normative it seems to just be superfluous or vacuous to me. So, nothing has really changed in terms of my basic pedagogical moves. (Interview 2014)

Facilitator 3's explanation of moves in her second discussion expressed a concerted effort for focus as well. I present the discussion segment first.

> Julian: Well the only reason that they can't have us as pets, is because they can't hunt us. Say a tiger hunted us. It would kill us and they could keep us as pets. (inaudible) and a squirrel hunted us, we'd just, he wouldn't be able to catch us. He would be so small. So we're like, kinda smarter than some animals.

Cameron: We're smarter.

Facilitator 3, D2:   We are smarter? OK, what would be another difference

between us and the animals? Because we were saying that we were the

same. Now Julian is saying but they're different than us. They can't

hunt us and we're smarter than them, What other things make them

different from us? (Discussion 2007)

Here Facilitator 3's explanation reinforces her commitment to the question. The

explanation is free of the additional commitments that appeared to complicate her first

discussion.

Author (Interviewer):   Can you say a little bit more about that one?

Facilitator 3:   A criteria was put out again. Because they are still trying to figure

out why it is that animals are not people. So, you have to focus on

differences, to sort of get at **that answer for the original statement**.

So, you gave a criteria and **I just wanted to keep it focused on okay**,

let's stay on what makes them different from us.

Author: And the call for more differences? What's going on there for you?

Facilitator 3:   For me it was about the converse **of the original statement**, it was

about that students' particular inquiry why aren't animals considered

people? It started out with pure logic in converse and the only way to

answer that for her and it was meaningful for me to answer that for

her, and the rest of the group, was we now need to draw some

differences and distinctions, as to why can't we call animals people but

we can call people animals. (Interview 2014)

Here the facilitator explains her facilitation as focused on answering the question. Her

facilitative decisions reflect a strategic orientation for what will contribute to the

resolution of the question (e.g., *...the **only** way to answer that for her and it was*

meaningful for me to answer that for her, and the rest of the group, was we now need to

draw some difference and distinctions as to why can't we call animals people but we can

call people animals). Her explanations for this discussion were in line with explanations

from the other facilitators.

In contrast to her focused discussion, Facilitator 3 also participated in the

discussion with the most argument threads. During that discussion, her facilitation

seemed to get complicated by additional motivations and associated strategies. These

motivations emerged in various explanations. In some of those explanations, it appeared

that the motivations were activated independent of her concern for the inquiry as a whole.

Here is an example of Facilitator 3 activating her motivation to challenge. She explains

that it was just something she thought of.

Facilitator 3:   It was a challenge, is that a good enough reason, why can't we just

get on a plane and fly to South America? And of course she is going to

come back and say, no, we can't. **So, I guess I was challenging it. I**

don't know if I was making any sort of constructive move,

something that I just sort of thought of. (Interview 2014)

Here she indicates a preference for the move, but she isn't quite sure if it is "constructive".

In another case, I wasn't sure why Facilitator 3's group shifted to discuss the question "Why have zoos?" I addressed this with a follow-up question. The subsequent discussion exposed an additional motivation being activated by Facilitator 3.

> Author (Interviewer):   You moved to the zoo here. It sounds like you are gathering everything back up and kind of reframing, but you choose the zoo. Is there a reason for that in particular?
>
> Facilitator 3:   Because Nous (a character in the IAPC novel) is a giraffe. It's directly back to the story. I wanted to just go back to that again. I don't want to say subconscious reminder but just go back to the story. Nous is in a zoo and they are trying to rescue her, so I wanted to go back to the notion of animals in a zoo, so it's not completely foreign and it's related back to the story. (Interview 2014)

This comment exposes a desire to go back to the story. It is not clear whether this was done in support of answering the *big question*. Returning to the story came up again in a subsequent explanation. In this case, it offers an interesting point of contrast to the other two facilitators.

> Facilitator 3:   I think just for me bringing in the text, I don't like to stay too long in the abstract and philosophical. I like to bring it back to the clarification of the text. So I like to work with particular examples, so we can talk about animals, giraffes, but in this case we started reading

a story about a particular giraffe Nous, so I think it makes sense to come back to the text and use it sort of as a catalyst to springboard to the inquiry. I think if you don't do that, students lose as sense of what you are doing in any classroom, you have to come back for clarification. So, I just think it helps. That's really my only reason for doing it.

Author: It sounds like you are saying it's also a kind of an organizer, a grounds to bring them back to?

Facilitator 3: Yes. I don't think most people would agree, but for me inquiry could just sort of lose itself if you don't ground it into something again. It will just be like constantly asking questions like, question after question, answering a question with a question and I think that tends to get sloppy for lack of a better word, it loses its focus. So, whatever text you are using in this particular case Nous, I believe coming back, and grounding it in the text is a good move. I am not saying that I do it all the time but there has to be some concrete sense of what they are doing, otherwise for me inquiry for inquiry sake which may not be a bad thing, but yes, that's really why I made that move there. (Interview 2014)

Where Facilitator 2 and I reported using the *big question* or concept as a focal point around which to organize the inquiry, Facilitator 3 reported using the text (at times). She justified doing so by referring to more general teaching practices or contexts (e.g., *I think*

if you don't do that, students lose as sense of what you are doing in any classroom, you have to come back for clarification). This contrast in facilitator priorities between the more and less focused discussions paints a picture of good practice that has implications for improving argumentation quality. The major implication is that argumentation quality may best be supported by an orientation toward the *big question* that is not negatively impacted by competing motivations. This and other implications are addressed further in the discussion section.

Interpretations from the Analysis of Facilitator Interviews: Background Knowledge

As I discussed in the Analysis of Facilitator Moves, it seemed that the facilitators must have some familiarity with the content explored in the discussions. The facilitators regularly pick up on nuanced distinctions and statements that seemed to require more than close listening. To explore this issue, I asked the following question at the end of each Review of Facilitation segment: *How familiar are you with the relevant arguments that have been constructed around this issue?* I discuss the relevant facilitator responses in the rest of this section.

The three facilitators reported differing levels of familiarity with the subject matter explored in the discussion. Each expressed a belief that prior study or training contributed to their facilitation in some way. The form of the impact differed according to each facilitator. I have already described how my familiarity with various ethical theories in philosophy helped me to hear certain theoretical tensions among student statements. My responses during the interview reinforced these claims. During the discussion about

determining the consequences, I offered the following description of my *background knowledge* on the issue.

> Interviewer: How familiar were the relevant arguments that were constructed around this issue?
>
> Facilitator 1 (Author):   I think in this case I was very familiar. In philosophy there are complete theories of ethics that are based on consequences. So there is a whole consequentialist theory of how to deal with ethical issues, and then there is a whole group of other philosophers that talk about alternatives, they're called Deontological Theories. So, I think in this case that is part of how I tried to frame it. I kind of heard that this was coming up and that allowed me to kind of pull those out and let those kind of play out a little bit. So, I am very familiar, this is a very common distinction.
>
> Interviewer: Did you have like a specific author or someone, specific text?
>
> Facilitator 1 (Author):   No, not really. I mean Immanuel Kant is a guy that talks about intention and will and so I don't know. I mean his theory is much more complicated so it doesn't completely apply here, but the insight that he builds on is that you can't call anything good unless somebody willed it to be good. The consequences aren't enough to make the judgment. And that flies in the face of what Aaron is saying. So, the very least I saw the problem with what Aaron is saying and I

kept bringing that out, because it has been made clear (Interview

2014).

At the end of the review of my second discussion (on voting), I offered a similar response

and made connections to specific student statements.

Facilitator 1 (Author):   Yeah, I think for this one I am familiar as well. I don't

think, maybe I don't draw as much from specific philosophers in these

cases as maybe I did in the other discussion. But you know, even say

my philosophy of ed[ucation] courses, we spend a lot of time talking

about why we group kids by age in schools. So, we have dealt with

relevant issues about maturity and impulse control and knowledge and

experience.

Interviewer: So, you have had experience, just kind of arguments, even if not in

books, but with other students.

Facilitator 1 (Author):   Yeah, I have a sense of a kind of landscape of possible

reasons, possible arguments that can be constructed here.

Interviewer: And did you draw on that knowledge?

Facilitator 1 (Author):   Yeah, I think it certainly allowed me to hear especially

Gina, and Aaron when they start wanting to say this idea that Aaron

brings up that it is just to be fair. I think the reason I heard that is

because that has come up in other arguments. And even Gina's idea

about an expectation, as kind of bar that we have set and not really a

description of maturity. (Interview 2014)

As is evident in my response, I felt my familiarity with the arguments or theories surrounding a given issue helped me to hear and frame student contributions. My statements also assume that any inquiry around a similar question will evoke similar considerations, if given enough time. That assumption could be problematic and may have led me to force a structure on a given discussion, but that is beyond the purview of this study. I do try to avoid this when I facilitate.

Facilitator 2 reported connections between what he heard during the discussions and specific authors and works. In contrast to my reports of this being a helpful thing, he hypothesized that it may have informed his "manipulative behavior." Below is his response, following the review of the discussion on intelligence.

> Facilitator 2: Yeah, I have background, I mean I have been a careful reader of Frames of Mind which is Gardner's sort of opus on intelligence, with which I generally agree. I have, had done some reading on the distinctions between general and domain intelligence and how that arose in the early 20th century. I have read Dewey, who clearly talks about intelligence as adaptive capacity. That has informed my manipulative behavior in the sense that the stuff that I agree with in that literature, I am trying subtly or backhandedly or underhandedly to push and I don't know. I mean, that's a question about CI whether somebody who is a complete scholar of intelligence and a researcher, whether they could deal with this. I think it's completely different intelligence if you will. So that relationship between sort of scholarly

or research background and facilitation, capacity to facilitate I think is

a kind of interesting problematic one. (Interview 2014)

In response to the discussion dealing with privacy, Facilitator 2 reported a more general familiarity.

Facilitator 2: Yeah. Not very, I am sure that's sort of the realm of, well I have

read Van Manen talking about secrets, and I have sort of read here and

there, but usually concepts like that get treated in sort of analytic

treatises which I try to avoid, which kind of bore me. I am not proud of

it, but it just doesn't really agree with me. So, I would say that there is

peripheral contact with philosophical tradition in those areas. But

nothing consistent. So I am pretty much, my agenda is more based on

phenomenology or even on psychology, when I am trying to field

these topics which might make a difference to–well, it seems in these

two examples to have made a difference, I had more prejudice going

into the first, because I felt that I had some familiarity with the way

intellectuals talk about intelligence. (Interview 2014)

In addition to his familiarity with relevant theories, Facilitator 2 also expressed a

particular sort of philosophical affinity (e.g., *my agenda is more based on*

phenomenology). This affinity was expressed in his other explanations of facilitation

moves. For example, in his explanation of his call for a definition of privacy, he reports

wanting to think in certain ways.

Facilitator 2:   And maybe I wanted to get past that, maybe I actually thought that wasn't going to work, and so I wanted to think about privacy more phenomenonlogically and maybe that's why we eventually jump to lying. I was very aggressive in this session, I was sort of introducing stuff and pushing it, maybe because it was a later session that we were more familiar with each other. (Interview 2014)

His explanation again makes a connection between his knowledge and manipulative facilitation.

Facilitator 3's initial response to the question was to frame familiarity with the subject matter as a necessity. In her case, this involved having a sense of the different directions the discussion can go.

Facilitator 3:   I think a facilitator must, even though they don't know where it's going to go, if you are going to come in with a particular text or anything like that, you should have a landscape in your head of at least four to five divergent ways that it can go. (Interview 2014)

Similar to Facilitator 2, Facilitator 3's response seemed to indicate an interest in or preference for a certain kind of philosophical move as well e.g., *...but really using a bigger normative question. I tend to use that lot and I keep it on in 'ought' level.* In contrast to Facilitator 2 and me, Facilitator 3 reported that her familiarity with argumentation moves helped her as well. In the following example, she suggests that this familiarity might serve as a substitute for specific theoretical familiarity.

Facilitator 3:   It's not that I don't understand your question, it's that I am familiar with logic and logic statements, so for me that's what started it. I mean the content is talk about differences of people and animals, I don't think I have overtly specialized knowledge of this sort. Again I don't specialize in animal ethnics or people ethics. (Interview 2014)

I followed up on her response to probe if she only brought a familiarity with logic to the discussion. In my experience as a philosophy student (she was one as well), distinctions between animals and people were often discussed as a way of defining what it means to be human, to explore mind/brain difference or to frame who belongs to a moral community. Some of these issues came up in her response.

Author (Interviewer):   But in terms of specialize, would you say you have explored the content more than say your average teacher?

Facilitator 3:   If that means if I explored theories of mind, even between adults and children or being of general interest - I don't study science or the animal kingdom - then I would say, yeah. I probably do have more than just a textbook genus species sort of recognition of it. I want to know more about these qualities of mind, so to speak, and how do they differ amongst similar things. So, if all people are animals, well, then yeah, I want to know what it is that definitively, philosophically makes man a rational animal. So, have I thought about it more? Sure, than an average teacher, I guess I can conjecture to that. I don't want to say

be speculative, but on a philosophical level, yeah, I wonder about the

different ways of knowing or doing or thinking. (Interview 2014)

The analysis of the interview responses related to *background knowledge* supports the interpretation generated during the Analysis of Discussion Transcripts: Facilitator Moves. There I suggested that facilitator familiarity often helped the facilitators make the facilitation moves that they did. The interviews supported this interpretation, but also suggested that in some cases the facilitator's familiarity reflected a methodological or theoretical bias that influenced moves as well. In some cases, this influence seemed to have a positive impact. In other cases, the facilitator expressed a negative attitude toward the influence. This will be addressed in the discussion section.

A facilitator's *background knowledge* was not the only thing that appeared to influence their facilitation. The Analysis of Facilitator Moves also suggested the presence of a set of *pedagogic principles* that influenced facilitation decisions. Those principles are presented in the following section.

Interpretations from the Analysis of Facilitator Interviews: Pedagogic Principles

In this section, I discuss the findings associated with the pedagogic principles identified in Chapter 4. For each principle, I first describe the facilitator's responses, generated during the General Beliefs and Practices segment of the interview. I then compare those responses to their explanation of moves during the Review of Facilitation segment of the interview. In a number of cases in this section, I return to excerpts from class discussion explored in previous parts of this paper. This is because the principles

represent overarching concerns that influenced facilitator moves made in those excerpts. In these cases, I bolded the parts of the episode relevant to the principles.

The interview data supported the use of the *pedagogic principle*: *Track the Inquiry* by all three facilitators, although for two facilitators the use and commitment to the principle aligned more strongly than for the third. This was supported by facilitator responses during both segments of the interview.

Facilitator 2 and I made statements indicating our concern for *tracking the inquiry* during the General Beliefs and Practices segment of the interview. These statements first emerged in response to the question: *What is the role of the facilitator during inquiry dialogue?*

> Facilitator 1 (Author):   I think the role of the facilitator is to help the group **be more clear about what they are doing**, to be more rigorous and kind of focused in what they are doing. So the role of the facilitator is to help the group to work together **and to know and see how they are working together**, and to arrive at better ideas than they might arrive at alone. (Interview 2014)

The bolded words in my response suggest a concern for attending to inquiry. "What they are doing" in this case is a reference to *inquiry dialogue*. "How they are working together" is again understood as inquiring together. The focus on inquiry suggests the presence of the principle. Facilitator 2's response to the question had a similar focus.

> Facilitator 2:   So in that sense I am a participant who is trying to tease out what I see as the ligaments of the argument. And I also, my modeling is to, in

many ways, just to make kids aware that there are moves happening. There are positions being taken. That they have made this or that move. So, I guess again my assumption is that kids make them, people make them naturally, that dialogical inquiry has an inherent logical structure or seeks inherent logical structure and that my role is, I guess from above, to introduce new labels for what's going on and hope that those labels that they will catch sight of them and that will help them build. But it is also to allow the argument to emerge without pushing it or steering it in this direction or that too much. (Interview 2014)

Here, Facilitator 2 is describes his role as bringing out or making clear the structure and moves of the inquiry that are naturally present. His concern with letting the argument emerge indicates that he can only track the inquiry, as he is averse to "pushing" or "steering too much." This facilitator and I use terms like "what they are doing" and "what's going on", indicating that we are concerned with the process as it is happening, rather than where it is going or should go.

There is less evidence of Facilitator 3 being concerned with *tracking the inquiry* at this stage of the interview. Although she does mention "letting the inquiry unfold," the rest of her description presents a mix of commitments:

Facilitator 3:   I think it's a nuanced role, I think you have to at first be very heavy handed at making overt moves for them to start modeling and internalizing, but as well letting the inquiry unfold and even letting them make not superficial connections, but textual sort of connections,

and just keep scaffolding them to where you want to get them.

(Interview 2014)

Here the facilitator suggests that she wants the inquiry to unfold, while at the same time making textual connections on the path to where she wants them to go. This represents a complex picture of facilitation. The statement "where you want to get them" presents an interesting point of contrast to those offered by Facilitator 2 and myself as well. I followed up on this statement to explore it further.

Author (interviewer):   Can you tell me a little bit more about where you want to get them?

Facilitator 3:   For myself, I think again there really is no other way to put it but trying to **get them to a more abstract philosophical level** to elevate their thinking beyond a text question such as characters, story questions and asking them certain critical thinking moves about what things mean, **turning descriptive statements into normative statements so that we can really just jump into a general philosophical dialogue and then come back to the story and interpret it**. (Interview 2014)

Here the facilitator frames her role in terms of getting the students somewhere, whereas Facilitator 2 and I describe our role in terms of supporting them in what they are already doing. The contrast between the different facilitator statements appears to be one of guiding versus tracking.

The three facilitators answers to the following questions revealed another contrast in beliefs: *Is there any mental framework that you use during facilitation? What do you keep track of during the discussion?* Again, facilitator 2 and I seem to share a common concern for *tracking the inquiry.*

> Interviewer: Okay. So, I understand you do **keep track of argument building** during the discussion.
>
> Facilitator 1 (Author): Yeah, I think for me it is kind of a key focus.
>
> Interviewer: So, then you see it as **important to keep track of** argument building to be an effective facilitator?
>
> Facilitator 1 (Author): Yeah, I think it is essential for me. I think it is also essential for the group. I think the arguments kind of cut through a lot of the verbiage. (Interview 2014)

In my case, the tracking involves tracking the actual argument. For Facilitator 2, it also involves tracking the argument and includes specific strategies for doing so.

> Facilitator 2: I think I go in there best when I am paying full attention, like, being present to the situation and also with an **intention to feedback continually**, which is kind of shaping but it is only a shaping through **describing what I think is going on, like, what I think the argument looks like at any given moment**. And also encouraging participants to be constantly, as much as possible **locating**, it was the word that I was using in these sessions, **summarizing, clarifying,**

"Where are we?", a constant attempt to bring that to the surface so

that **we're all thinking where we are**. (Interview 2014)

In both of the excerpts, the facilitators explicitly talk about the value of tracking for the

participants. Facilitator 2 goes as far as to suggest that he is "constantly" engaged in some

form of mirroring behavior. This is a form of tracking because he is mirroring student

inquiry. Facilitator 3's responses to these questions indicated a different focus when

tracking the inquiry.

> Author (Interviewer):   Okay. I am interested if there is any kind of a mental
>
> framework that you use during facilitation? A way of a kind of
>
> organizing the discussion in your head as you facilitated?
>
> Facilitator 3:   Not really. I keep certain critical thinking moves in my head and I
>
> am keen to them if I hear them. That is when I interject and pose a
>
> question. **So, mostly I am looking for an opportunity to**
>
> **problematize**.
>
> Author: This is kind of a similar question that you have touched upon a little
>
> bit, but what do you keep track of during the discussion? You said
>
> certain moves…
>
> Facilitator 3:   Identification of, giving reasons. I do like to elaborate a lot of
>
> reasons for consideration. I listen, definitely for distinctions being
>
> made. **There are certain informal logical moves that I think can**
>
> **get them to a more philosophical point.** I don't want to just interject
>
> the philosophical question. I think it interrupts the dialog. So, if I can

> look for examples, counter examples **or just basic informal logical**
> **moves that they make, that's what I am keeping track of for the**
> **most part.** (Interview 2014)

Facilitator 3 tracks "critical thinking moves" and argument features, but it is not clear how she organizes them. Although she is sensitive to interjecting, her responses suggest she tracks as a way of identifying opportunities to "problematize" or "get to a more philosophical point." Her language choices indicate more of a concern for where she wants the group to go. This contrasts with Facilitator 2's focus on "feeding back" what is going on. If concerns for "where to go" result in a shift in the *argument thread*, this can be a problem for *argumentation quality*.

To this point, I have based my interpretations concerning the *track the inquiry* principle on the reports of facilitator's general beliefs about their practice. In the next few paragraphs, I discuss their explanations during the Review of Facilitation segment of the interview. Particular attention was paid to the discussion episodes used to establish the principles or to moves associated with the principles in Chapter 4.

In the case of my facilitation, my explanations of moves continued to reflect a desire to *track the inquiry.* In one example, from the discussion about how to determine the consequences, I ask the student to *locate* their intervention, thus enlisting their help in *tracking*.

> Sam: Well, like... that's your fault if you're gonna be going drinking. Why
>   would you even go like, in a car when you're, like, already…
>
> Unknown Student: [laughter]

> Facilitator 1 (Author), D1:   She's not even finished yet.
>
> Sam: No... uh...Casey.
>
> Facilitator 1 (Author):   Well, let me... let me make sure. So, is this something new, are you saying something new or are you just agreeing? (Discussion 2007)

In my explanation of the move, I express a desire to help the group see that a new offering has emerged. As I discussed in the introduction of the principle, this is a way of highlighting a place from where the inquiry can move forward. My explanation reflects this.

> Author (interviewer):   Yeah, here I **heard something new**, basically she is saying it is your fault, you should know better. And so because that's now a new argument. It just got slid in and I don't think that anybody caught it. I am just trying to kind of highlight it and let the group know **here is another possible answer to the question.** (Interview 2014)

Facilitator 2's explanation of moves also reflected the principle of *tracking the inquiry.* This is made evident in his explanation of the episode below. In the episode, he asks a student to *locate* how his statement fits within the inquiry e.g., *How does that connect with Casey and Marc?*

> Marc: I think intelligence is like, being only smart, smart as Katie said, but smart enough to solve problems. Like, like you could be a scientist who needs to solve problems in, let's say you need the formula for

something and you have to solve the problem making that. Or, you're a kid on the blacktop and there's a fight going on or something in the street and you might want to try to make a solution to figure that out. OK, Mason.

Mason: I agree with both Casey and Marc. And I also think Intelligence is, um, a well-educated person.

Facilitator 2, D1: How does that connect with Casey's and Marc's? (Discussion 2007)

Here the facilitator asks the student to *locate* his own move. As in the example from my own facilitation, this use of the *locatin*g move reflects a desire to *track the inquiry*. It is concerned with relating contributions to those of others and to the line of inquiry. I asked Facilitator 2 to explain the move during the interview.

Author (Interviewer): Why that move?

Facilitator 2: Right, so I am sensing dissonance here between thinking of intelligent as being educated and Marc's notion of intelligence as being good at problem solving, solving problems. And Casey, I think before, she talked about or her father told her that. And she kind of blew it, she didn't state it very well but she seemed to be saying that her father had told her that basically, it's the capacity to collect information. **So, I was trying to put them in relationship.** (Interview 2014)

The facilitator's explanation indicates he is responding to a lost or missed connection between views. Instead of tracking the inquiry himself, he invites Mason to do it. The invitation is aimed at what the facilitator hopes will happen e.g., *put them in relationship*. If Mason had successfully executed the requested move, multiple moves would be tracked.

Facilitator 3's commitment to the principle of *tracking the inquiry* was supported in her explanations, but reflected a difference in how she does so. Her explanation of the use of a whiteboard during her facilitation indicated an activation of the principle.

Author (Interviewer):   And again you went to the board?

Facilitator 3:   Yes. Just keeping some sort of running visual whether it's columns, something visual that they can just see so we can always look at the board and keep track of any sort of a progress we made. If I hear a concept, if I hear anything of that sort, I want to just sort of build it on that board. (Interview 2014)

Tracking on the board represents a different way of activating the principle. Facilitator 3's description of what she does track (e.g., *concepts)*, suggests that the tracking can also be more general. Tracking concepts in this way helps the group track the big ideas that have been generated. Tracking statements, and how they relate to each other, helps the group track how they arrived at these big ideas.

In another example of tracking, Facilitator 3 connected a new student contribution to ones that had been offered in an earlier part of the discussion e.g., *Jaclyn and a few*

other people were saying...She then proceeded to check that everyone tracked the new

offering e.g., *Did everybody get that?*

> Jesse: He said that we are smarter, but we don't really act like we are smarter
>
>   than animals sometimes…
>
> Facilitator 3, D2:   Because?
>
> Jesse: Because basically, we are destroying and cutting down their homes
>
>   with this stuff and destroying their habitats.
>
> Facilitator 3, D2:   Wait, Jesse can I ask a question? Is that because**… I think**
>
>   **that a distinction was just made and I just want to make sure.**
>
>   **Jaclyn and a few other people were saying people may be smarter**
>
>   **than animals,** but Jesse you're saying that yes it may be true, but we
>
>   do not always act as smart. And then your example is we'll kill
>
>   animals. Ok, so the distinction is made. **Did everybody get that?**
>
>   **There is a difference between the way something is and the way**
>
>   **something acts, and Jesse threw out a challenge and said look we**
>
>   **may be smarter in some respects but we act not as smart**
>
>   **sometimes.** Jesse you get to call somebody to respond to this.
>
>   (Discussion 2007)

In addition to her *tracking the inquiry*, Facilitator 3's explanation reflects her desire to

embrace a move she valued.

> Facilitator 3:   I know it's going to shift the inquiry. On one hand there is a
>
>   distinction and on one hand he picked up on an implication of the

reasoning. He said okay, if we accept this premise, this may be true but it doesn't follow and we could say, "Well, what about this example?" **So, I just thought it was an awesome move on his part, and I really wanted to stay focused on that.** So, we may in fact be smarter and even assuming that's true. We have to examine some implications of that, "So why do we act certain ways?" in effect saying why do we act stupider. So there is some – again this is logic melded in with ethics that **I think is just when a student picks up on that I am going to take it and run with it and definitely always rephrase.** But if you notice I rephrase it longer and I make sure that **I am very heavy handed in saying, it's shifting. We are going to shift this now, and I am going to now jump on his connection and let's focus on that.** (Interview 2014)

Facilitator 3's explanation above indicates that tracking may also be activated as a way of locating the group and the inquiry in support of a shift. She summarizes what has been done and indicates a turning point in the discussion. Without the benefit of her tracking, the shift might seem arbitrary and confuse the group. *Tracking the inquiry* then serves to help the group work together and make adjustments to new contributions, while maintaining a sense of continuity and progress. This idea of progress is reflected in the next principle.

Work Toward a Reasonable Judgment is a second *pedagogic principle* that I sought to explore during the Facilitator Interview. The *principle* reflects a desire on the

part of facilitators to help the group develop a thoughtful response to their *big question*. This can be a complex issue given the contestable nature of the questions explored and the commitment to philosophical reflection implicit in the P4C materials and approach. As I stated in Chapter 4, the *principle* reflects a commitment to pushing deeper into the question or concept; to testing its limits and implications; to going beyond a general survey of opinions on the issue. The *principle* also reflects a concern on the part of facilitators to explore things that are worthwhile, in light of the limited time they have with the students.

The General Beliefs and Practices section of the interview suggested that all three facilitators shared a similar concern for *working toward a reasonable judgment*. In my case, connections to the principle of working towards a reasonable judgment emerged with the initial interview question e.g., *What do you see as the value of inquiry dialogue?*

> Facilitator 1 (Author): I think the value of *inquiry dialogue* is **to help students to think through a complicated issue together.** To help them think more clearly, to think more multi-dimensionally. I think the value is that they get different perspectives in the discussion, and to get some practice in critical thinking and argumentation. (Interview 2014)

In this response, I refer to aspects of inquiry that I see as a mark of good (reasonable) thinking, such as *clear thinking, multi-dimensional thinking, argumentation*. I also reference thinking "through" the issue, which for me is a matter of progressing toward an answer or resolution. This idea of movement carried into my beliefs about the role of the facilitator.

Interviewer: What is the role of the facilitator during *inquiry dialogue*?

Facilitator 1 (Author):   I think the role of the facilitator is to help the group be

more clear about what they are doing; to be more rigorous and kind of

focused in what they are doing. So the role of the facilitator is to help

the group to work together and to know and see how they are working

together, **and to arrive at better ideas than they might arrive at**

alone. (Interview 2014)

Once again I used language that reflects movement (e.g., *to arrive*)**.** I also express that

my role is to support students in what they are doing, rather than getting them to do

something. This idea that the students are doing the work and the facilitator is supporting

them, also appeared to frame Facilitator 2's conception of the value of *inquiry dialogue*

and his role as facilitator.

Author (Interviewer):   What do you see as the value of *inquiry dialogue*?

Facilitator 2:   Well, two different dimensions, one to promote habits of reflection

and second to help build, to promote democratic group process.

(Interview 2014)

Facilitator 2 frames the value in terms of habits and forms of engagement. Although his

concern with supporting democratic process does not appear to be about *working toward*

a reasonable judgment, his later responses indicate that it may be.

Author (Interviewer):   Okay, and what is the role of the facilitator during *inquiry*

dialogue then?

Facilitator 2:   Well, taking those in terms of those two dimensions, in terms of the first dimension (promoting habits of reflection) it is modeling informal logical moves and calling for them, naming them but also acting to promote genuine reflection on philosophical issues, so it is not just a skill game. Grab any old thing and saying 'look, I can do this with this.' So the content, the question in hand whether it is like, "What is intelligence?" or "Is it okay to lie?" are extremely important. I think that in many ways these will shape the actual dialogue. **And from the other, the role of facilitator in promoting democratic process is**… I don't know whether we are going to talk about role or methodology, but I find in looking at these tapes that my methodology seems to be based on a desire to build democratic process, from below rather than above**. In other words, for the group itself to find an emergent order and an emergent self-discipline which makes it possible for them to shut up their primitive brains and get serious with each other.** (Interview 2014)

Here Facilitator 2 clarifies that he feels that the question and the process, if it emerges from the "ground up," will allow students to "get serious with each other." I interpreted this to mean that he believes the students want to inquire, and will seriously inquire, if they are given the space to do so. His concern that they "get serious with each other" is a concern for *working toward a reasonable judgment*. Facilitator 2 suggested similar views in his response to my follow-up question.

Author (Interviewer):   I mean you are promoting, which sounds top-down but you have also said you want it to come from bottom-up, so how do those two fit together?

Facilitator 2:   I guess at least this video seems to tell me that **I am doing it through sort of waiting for order to emerge**. Waiting for people themselves to realize that, number one, they have some interest in these issues, and number two, **that they can't get at them very well unless they have a certain level of discipline**. So, that's the bottom up. And it is based on an assumption that we are inherently at least have one dimension, inherently communicative skills or capacities for **serious self-disciplined group inquiry**, that there are sort of an inherent, there is an urge for that to emerge, otherwise the group would break up and not seem necessary…. (Interview 2014)

Here the facilitator assumes that students want to make progress and indicates that discipline will help them to make it. His support of that discipline is then, by extension, supporting them to *work toward a reasonable judgment*. This means that for Facilitator 2, activating the principle involves allowing the group to self-organize and at the same time helping them to see how they are doing it. Facilitator 2, described his practice along these lines in the following response:

Facilitator 2:   I guess again my assumption is that kids make them [inquiry moves], people make them naturally, that dialogical inquiry has an inherent logical structure or seeks inherent logical structure and that

my role is, I guess from above, to **introduce new labels for what's going on and hope that those labels that they will catch sight of them and that will help them build**. (Interview 2014)

This excerpt was also offered as evidence of Facilitator 2's concern for *tracking the inquiry.* What this seems to indicate is that for this facilitator *tracking* is a way of supporting the group's *work toward a reasonable judgment*. The Review of Facilitation segment of the interview helped me determine if *tracking* was the only way Facilitator 2 activated this principle.

The responses of Facilitator 3 to the General Beliefs and Practices segment of the interview also indicated a concern for *working toward a reasonable judgment*. Consistent with her previous responses, she seemed to also have an additional set of commitments related to the purpose or outcome of the inquiry. For example, she reported the value of *inquiry dialogue* as engaging in certain kinds of questions:

Facilitator 3:   The ability to raise questions, for me the ability to turn textual questions into more abstract questions for students to inquire into. (Interview 2014)

Her response to the question concerning the role of the facilitator suggested that successful inquiry for her was more a matter of getting to a related kind of thinking.

Author (Interviewer):   Okay and what is the role of the facilitator during *inquiry dialogue* then?

Facilitator 3:   I think it's a nuanced role, I think you have to at first be very heavy handed at making overt moves for them to start modeling and

internalizing. But letting the inquiry unfold and even letting them make, not superficial connections, but textual sort of connections and **just keep scaffolding them to where you want to get them.**

Author (Interviewer):   Can you tell me a little bit more about where you want to get them?

Facilitator 3:   For myself, I think again there really is no other way to put it but trying **to get them to a more abstract philosophical level**. To elevate their thinking beyond a text question such as characters, story questions and asking them certain critical thinking moves, about what things mean, turning descriptive statements into normative statements so that we can really **just jump into a general philosophical dialogue and then come back to the story and interpret it.** (Interview 2014)

Her final response represented more of a big-picture conception about the aim of a discussion, which is, engaging in philosophical dialogue and using it to interpret the story. She expressed this concern for the text in a previous explanation of moves, such as *I don't like to stay too long in the abstract and philosophical. I like to bring it back to the clarification of the text.* I discussed her concern for the text at the beginning of this chapter. There, the concern for text seemed to represent a set of potentially conflicting commitments. That she framed the use of the text as a way to ground their practice and serve as a "catalyst for the inquiry" suggests that she sees the text as supporting the group's work.

In the Findings from the Analysis of Discussion Transcripts, I identified

instances of *Paraphrasing*, *Distilling* and *Re-directing* that I felt reflected a concern to

work toward a reasonable judgment. I focused on a few of those instances during the

Review of Facilitation segment of the interview. *Paraphrasing* seemed to be a common

move that Facilitator 2 and I used, to activate the principle. For example:

> Aaron: I really didn't mean that as... I was just using killing somebody as an
>
> example. Like, it's just anything that applies to it.
>
> Facilitator 1 (Author), D1:   Applies to what?
>
> Aaron: Just... the same consequences.
>
> Facilitator 1 (Author), D1:   So you're still saying that it's only about the outcome.
>
> So if somebody gets hurt, then you should suffer the consequences.
>
> Whether it's an accident…Okay. Is there agreement with that?
>
> Disagreement with that? (Discussion 2007)

Although paraphrasing often serves the function of clarification, in this example I use the

move to bring out an important tension that I hear emerging in the discussion. I explain

this further during the Review of Facilitation segment of the interview.

> Facilitator 1 (Author):   And there actually I restate, actually I kind of paraphrase
>
> that for him because I think it is controversial, what he has just said.
>
> He is developing a position that says, "The intention doesn't matter at
>
> all." So it is clear that he has presented a counterargument to what
>
> Gina had said. And so here, I am just repeating it in the hopes that
>
> somebody will recognize that, because it is the counterargument. So

there is real tension now that has emerged and I am not sure if the

students are getting it. (Interview 2014)

This tension I am referring to represents an opportunity for the group to make progress

toward a reasonable judgment. I see the two views that are on the table as the important

ones to consider at this point, as they both can't be right. If one of the views can be

defeated, then the group will move forward through a process of elimination. There is

more going on here than wanting the students to challenge each other, I want them to take

up the tension that I feel will be most productive.

There were other places where I used a facilitator move to highlight a statement in

activation of the principle. Here is an episode from the discussion on voting that I offered

as an example of *distilling* in a previous chapter. In it, Aaron is suggesting that we can't

exclude certain 18-year-olds from voting simply because they aren't mature yet.

Aaron: Yeah, because it would be hard to like, exclude them from everybody

           else and it wouldn't be **fair** to them.

Facilitator 1 (Author), D2:   Hmm. Okay. So we, we choose an age just to be **fair**

           then. [d*istilling*]

Gabby: I don't think it's just to be **fair**. I mean I think that they **expect people

           to be mature.** But really, there's kids at 18 who die from doing stupid

           stuff. Like, how are they going to tell us what's good for the country

           and stuff if they're doing stupid stuff? Like, you gotta be pretty dumb

           to do some stuff that kids do. (Discussion 2007)

I explain the move as an attempt to highlight Aaron's "aggressive problematization".

Facilitator 1 (Author):   Yeah, I think here it is clear to me, **like some of the group is problematizing age much more aggressively**. Like Aaron has basically said it (age) is a sorting mechanism. So that's why I kind of repeated "So it is about fairness" because he is basically saying it (age) is just a kind of arbitrary marker and it is nice that Gina picks, like she jumps right back in there, although she is getting back to her point. What's interesting is she articulates an even newer criteria or a new kind of reason here, that it is just an expectation. It is not a measure of when you are able to vote, it is an expectation. It is like, a standard that we have. (Interview 2014)

Once again, the move reflects my desire to emphasize a student offering that I felt made a significant contribution. Aaron's statement, if true, could have basically shown that all of the previous discussion about age was misguided. He framed it as a logistical issue. I interpreted using moves in this way, as an activation of *work toward a reasonable judgment.*

Facilitator 2 used moves to enlist the help of students as a way of working out conceptual confusion. This is seen in the following episode from the discussion defining intelligence:

Mason: Yeah, but, really- if you're, if you're intelligent you can solve the problem. I don't think really be that intelligent to solve a problem on the blacktop.

Facilitator 2, D1:   He had another example which was- what?

Marc: Well, it could be a scientist, the scientist trying to figure out

Mason: That one I agree with because you have to be intelligent with that one.

      You have to be intelligent to figure out, like, like, the combination or

      something. But on the black top you don't really need that much

      intelligence to figure out the problem.

Facilitator 2, D1:   So, like a conflict, you mean? Like a human problem. Maybe

      we should give Marc, um, the opportunity to respond, since two people

      have disagreed with him. So he might want to clarify what he meant?

      (Discussion 2007)

In the final move above, it appeared that Facilitator 2 was simply concerned with giving

Marc a chance to respond. There was more to this move, though, according to Facilitator

2.

Facilitator 2:   I am attempting to find somebody who will critique it, who will

      sort of break the hold of this particular little configuration and I am

      thinking that Marc can do it. (Interview 2014)

As was the case with many facilitator moves, this one reflected a strategic decision

concerned with working through a sticking point. In another episode, Facilitator 2

explains his use of paraphrasing, as a way of inviting a challenge:

Facilitator 2, D1:   OK. So you're saying that a person cannot, cannot be

      intelligent unless they are educated.

Mason: Yes. Yes.

Facilitator 2, D1:   Not just educated. No one is intelligent who is not well

educated. (Discussion 2007)

Facilitator 2, explained that he made the move as a way of inviting a challenge to a

position he felt was presenting a problem.

Author (Interviewer): So that's a different kind of paraphrase here.

Facilitator 2:   I am sort of trying to track him down because **this seems to me to**

be a typical common sense, wrong-headed notion of intelligence.

"Oh! he has a degree from Oxford, so he is really intelligent." It

just seemed to be really dumb and so I was trying to track it down

so that we could exclude it. I think it naturally got excluded as we

went along. I don't think anybody sort of stayed with it, but again I

think this was a sort of rough spot in the conversation. (Interview

2014)

Here again we see a facilitator making moves to help the group respond to a "rough

spot." These and many other rough spots can serve as barriers to progress. To that extent,

removing those barriers helps the group *work toward a reasonable judgment*.

Facilitator 3's explanation of moves offered evidence of her activation of the

principle, but there were fewer instances when compared to the other two facilitators.

This seemed to be a consequence of her holding to a different or additional set of

commitments than the others. One of these extra commitments is exemplified in the

following episode, where the facilitator used a *distilling* move in a way similar to the

other facilitators, but then followed it with another move that appears to override the

distilling function.

> Jalen: Um, like, I think you can keep it at your house and take good care of it
>
>   except if it's a really big and vicious. But you can keep it in the house
>
>   and take good care of it unless it's like, very vicious and big.
>
> Facilitator 3, D1:   Vicious and big. An example? (Discussion 2007)

And here is the explanation of the move.

> Author (Interviewer):   I actually want to back up a little bit, one of the things you
>
>   just did he said, vicious, unless it is vicious and big and you repeated
>
>   just that. Is there a reason why?
>
> Facilitator 3:   Yes, I feel like the previous two moves were about animals as a
>
>   more general concept. The previous student is talking about dogs and
>
>   cats and here he is introducing the criteria of which kind of animals.
>
>   It's just not an example of an animal, he is now saying vicious and big,
>
>   so I want to make sure that that point was there. I believe it was sort of
>
>   a distinction but just some criteria to which types of animals and I
>
>   thought that that contributed to the inquiry. (Interview 2014)

Here the facilitator explains that she used the distilling move to highlight a new criterion.

Her explanation is similar to those offered by the other facilitators' explanations. The

move and explanation reflected a sensitivity to helpful contributions. In this case though,

her next move activates a competing priority (challenging) and the new criterion gets lost.

Jalen: Like, you wouldn't be able to take care of like, a rhinoceros because it's huge. And you can't like, take care of an animal like, a hippopotamus because it's huge

Facilitator 3, D1:   OK, So size matters. But a giraffe is pretty big? And if it's vicious, too. But what is Nous like? Let's like, look at the story for a second. Is Nous? Do we have any evidence that suggests that Nous is vicious or anything like that, or just really big? (Discussion 2007)

I followed up on this to get a better understanding:

Author (Interviewer):   Okay, so what about that, you are bringing it back to the text?

Facilitator 3:   Yes, I feel definitely, I like to do that because it starts from the text, but **I just wanted to counter that**. He said two criteria, I agreed with that but it started with Nous, so I just wanted to say but what is the evidence that big animals are necessarily vicious. **Just as a counter, just as something to think about, I wasn't trying to say he was wrong, I didn't want to say, let's talk viciousness out of it and just keep size but I did want to sort of counter a little bit.**
(Interview 2014)

Here the facilitator's explanation exposes an additional motivation. In this case the *distilling* move gets lost and the next student introduces a new example – injured animals.

Below is a clear example of Facilitator 3 activating *work toward a reasonable judgment*. The episode was described in the previous section of this chapter on *argument*

thread length and *argument thread shifts.* I include the episode and explanation again as a

reminder. The bolded areas are associated to this section.

> Julian: Well the only reason that they can't have us as pets, is because ,
>
> they're like, they like, can't hunt us. Say a tiger hunted us that would
>
> kill us and they would keep us as pets. If a squirrel hunted us, we'd
>
> just, he wouldn't be able to catch us. He would be so small. So we're
>
> like, kinda smarter than some animals.
>
> Cameron: We're smarter.
>
> Facilitator 3, D2: We are smarter? OK, what would be another difference
>
> between us and the animals? Because we were saying that we were the
>
> same. Now Julian is saying but they're different than us. They can't
>
> hunt us and we're smarter than them. **What other things make them**
>
> **different from us?** (Discussion 2007)

Here I interpret the move as working toward a reasonable judgment. Often during my

facilitation, the first part of a discussion can involve generating examples as a way of

exposing criteria. Here the facilitator is generating examples on both sides of the issue,

because the initial *big question* was, "How are people and animals the same and

different?" The examples serve as content for the group to analyze. In her explanation,

Facilitator 3 articulates this as a strategy she is using in the episode.

> Author (Interviewer): Can you say a little bit more about that one?
>
> Facilitator 3: A criteria was put out again. Because they are still trying to figure
>
> out why it is that animals are not people. **So, you have to focus on**

differences, to sort of get at that answer for the original statement.

So, you gave a criteria and I just wanted to keep it focused on okay,

let's stay on what makes them different from us.

Author (Interviewer):   And the call for more differences? What's going on there

for you?

Facilitator 3:   For me it was about the converse of the original statement, it was

about that students' particular inquiry why aren't animals considered

people? It started out with pure logic in converse and the only way to

answer that for her and it was meaningful for me to answer that for

her, and the rest of the group, was **we now need to draw some**

differences and distinctions as to why can't we call animals people

but we can call people animals. (Interview 2014)

Facilitator 3's clearest example of *working toward a reasonable judgment* also came

from her more focused discussion. The *principle* should overlap with focus. The

difference between *working toward a reasonable judgment* and maintaining focus

(resulting in longer thread length) is that facilitators sometimes have to make *argument*

thread shifts to work out smaller problematic issues. This can impact focus, but continues

to reflect a concern for *working toward a reasonable judgment*. In fact, we might be able

to say that this *principle* is what accounts for a productive shift in the thread. This will be

addressed during the discussion.

The final *pedagogic principle* that emerged from the Analysis of Discussion

Transcripts was *Let the Inquiry be Student Driven*. I mentioned previously that this

principle was more difficult than the others to identify in the code-based data. This was the case because the *principle* is one concerned with a lack of intervention or a certain kind of limitation, on a facilitator intervention. It is a *principle* aimed at being measured in one's facilitation.

The responses during the General Beliefs and Practices segment of the interview suggested a concern for *letting the inquiry be student driven* by all three facilitators, although I found that some activate the principle more often and more explicitly than others. To determine to what extent this *principle* was active in their stated beliefs, I first looked at their responses to the following questions: *What do you see as the value of inquiry dialogue? What is the role of the facilitator during inquiry dialogue?*

My responses to the question concerning the role of the facilitator suggested a desire to *let the inquiry be student driven.* In that response, I framed my role as supporting the work of the students. This response was also discussed in relation to the *principle work toward a reasonable judgment*. Below, I bold the parts of the statement most relevant to *let the inquiry be student driven*.

> Facilitator 1 (Author):   I think the role of the facilitator is to **help the group** be more clear **about what they are doing;** to be more rigorous and kind of focused **in what they are doing.** So the role of the facilitator is to **help the group to work together and to know and see how they are working together**, and to arrive at better ideas than they might arrive at alone. (Interview 2014)

In this response, my focus is on "what they are doing." My statement indicates that my role is to support student's understanding of their shared work and to improve it. Another response reflected my belief that facilitation is about helping students attend to what they are already doing.

> Interviewer: Okay. And what are the ways to enhance argumentation quality during a discussion?
>
> Facilitator 1 (Author):   Well I think making the arguments explicit, kind of pulling out the key components of argument that come in a student statement. I think sometimes **improving the quality is just a matter of helping the students to see the arguments that they are actually building**. I think sometimes it is not always clear to them what they are doing. So just making it more clear and then helping them to see how what they are saying relates to the other arguments, improves that quality. **It allows them to kind of relate their statements to each other** and their arguments to each other and challenge them, if it is made more explicit. (Interview 2014)

Here I communicate that it is my job to help clarify what students are doing. Noticeably absent are statements about what I try to get them to do or where I want them to go. I also make clear that the students are building arguments themselves. My role is secondary to their contributions, in that I simply help them see the process of inquiry. My role is to follow what they do, thus *letting the inquiry be student driven.*

My belief in following the argument as it was generated was echoed by Facilitator 2. His beliefs along those lines were first introduced in the section on *working toward a reasonable judgment.* Those comments are relevant here as well. From the beginning of the interview he suggested that the process of inquiry be guided by the group.

> Author (Interviewer):   What do you see as the value of *inquiry dialogue*?
>
> Facilitator 2:   Well, two different dimensions, one to promote habits of reflection and second to help build, to promote democratic group process. (Interview 2014)

The mention of democratic group process by definition implies some level of student influence. His explanation of the role of the facilitator, as it related to this process, made clear that he felt that student influence should be significant. The following excerpt is from a longer response about supporting habits of reflection and democratic group process.

> Facilitator 2:   And from the other, the role of facilitator in promoting democratic process is, I don't know whether we are going to talk about role or methodology but I find in looking at these tapes that my methodology seems to be based on a desire to build democratic process from below rather than above. **In other words, for the group itself to find an emergent order and an emergent self-discipline which makes it possible for them to shut up their primitive brains and get serious with each other.** (Interview 2014)

Facilitator 2 expresses that the group discipline should come from the students. This is in contrast to an external authority, like the teacher or facilitator.

> Facilitator 2:   I think the bottom-up is very much about an ideal speech situation in which there is sort of respect, listening. And that's impossible to mandate really. I think that mistakes teachers make is to try to create it through demanding it so telling, quieting people all the time.
> (Interview 2014)

Facilitator 2 even grounds his desires for the process on a theoretical construct of a community of people, working in an "ideal speech situation" (Habermas, 1974), where they are moved only by the power of the inquiry, as opposed to power or influence of any one individual. I confirmed this theoretical grounding in a follow up question.

> Author (Interviewer):   I am wondering too if that connects at all, so you said the ideal situation, are you referring to the Habermasian sense?
> Facilitator 2:   Yeah, where everybody is considered to have equal sort of privilege of voice.
> Author (Interviewer):   And where what they are moved by is the power of the task, the power of the argument and not the power of any one individual?
> Facilitator 2:   Right, yeah. (Interview 2014)

Throughout the analysis, it appeared that this *principle* was a defining component of Facilitator 2's beliefs concerning facilitation, even in the aspects of the practice that he sees as justifiably "top down."

Facilitator 2:   And whereas becoming aware of the logical infrastructure of an argument is something that I myself don't feel particularly skilled at. So in that sense I am a participant who is trying to tease out what I see as the liniments of the argument. And I also, my modeling is to, in many ways, just to make kids aware that there are moves happening. There are positions being taken. That they have made this or that move. **So, I guess again my assumption is that kids make them, people make them naturally; that dialogical inquiry has an inherent logical structure or seeks inherent logical structure; and that my role is I guess, from above, to introduce new labels for what's going on; and hope that those labels that they will catch sight of them and that will help them build. But it is also to allow the argument to emerge without pushing it or steering it in this direction or that too much.** (Interview 2014)

Facilitator 2's beliefs represented the strongest commitment to *let the inquiry be student driven principle* among the three facilitators. Although not as prevalent in Facilitator 3's reports of her beliefs, the *principle* did seem important to her. There were a number of responses where Facilitator 3 touched upon the *principle* as being important. For example, in her response to the question: *What do you keep track of during the discussion?* she expressed a sensitivity to "interjecting" and an attention to "moves they make."

Facilitator 3:   Identification of giving reasons, I do like to elaborate a lot of

reasons for consideration. I listen definitely for distinctions being

made. There are certain informal logical moves that I think can get

them to a more philosophical point. **I don't want to just interject the**

philosophical question, I think it interrupts the dialog. So, if I can

look for examples, counter examples or just basic informal logical

moves that they make, that's what I am keeping track of for the most

part. (Interview 2014)

Although Facilitator 3 touched upon the *principle* in the excerpt above, there were no

other places in the General Beliefs and Practices segment of the interview, where I found

a clear concern for the *principle*. I therefore moved to the Review of Facilitation segment

of the interview, to look for her further activation of the *principle*.

One case where Facilitator 3's explanations were clearly about the *principle* had

to do with her introduction of new techniques, including finger signals and students

nominating speakers. Her explanation indicates a desire to increase the level of student

influence on the process of the discussion.

Author (Interviewer):   So, you have introduced this as a kind of new…

Facilitator 3:   Technique. So, instead of me choosing people, I want them to start

listening more dialogically to each other. They have to call on

somebody and the indication is one finger, two fingers. So I am trying

to keep the focus on please don't respond unless you are adding to it. **I**

am trying to shift away, after 8 sessions, from me to them just to

see how well they are doing it, directing it. (Interview 2014)

This response indicates that the *principle* of *let the inquiry be student driven* is active for

Facilitator 3, but she is working more gradually toward a full activation of the *principle*.

In contrast, Facilitator 2 and I adopted the procedure of student nomination from the

beginning session.

One interpretation of Facilitator 3's lack of explanations associated with *letting*

the inquiry be student driven, is that the *principle* is most likely activated through the

procedural structures the facilitator put into place. This is supported by the fact that the

one explanation Facilitator 3 offered that was associated with this *principle* concerned a

procedural technique. Interestingly, if the *principle* is indeed activated through

procedures, then the presence of student nominations, as well as the fact that students

construct and vote for their own questions, indicates that the *principle* was active for all

three facilitators.

In this section, I illustrated whether and to what extent the facilitators activated

the three key *pedagogic principles*. I also looked to see if there was consistency between

their stated beliefs and their explanations of practice. Despite some differences between

them, each of the facilitator's understanding of their practice appeared to be informed by

the key *principles*, at least to some extent. I also illustrated how, in some cases, the

activation of multiple principles and/or commitments can complicate facilitation. In the

concluding chapter I explore the implications of the various findings reported in this

paper.

CHAPTER 6 – DISCUSSION AND CONCLUSION

Theory and research suggest that classroom dialogue provides a fruitful opportunity for students to develop skills associated with argumentation (Dong, Anderson, Li, & Kim, 2008; Kuhn & Crowell, 2011; Mercer, Wegerif, & Dawes, 1999; Reznitskaya et al., 2001). In spite of this, teachers continue to rely on approaches characterized as monologic (Applebee, Langer, Nystrand, & Gamoran, 2003; Commeyras & DeGroff, 1998; Nystrand, 1997). This may be, in part, a result of our knowing relatively little about how expert teachers facilitate dialogic discussions and why they use the strategies they do.

In this study, I sought to better understand how experienced facilitators contributed to *argumentation quality* during *inquiry dialogue*. The study was shaped by the need to address two limitations in the existing literature. The first limitation grew out of the methodological issues associated with analyzing argumentation. Understanding the quality of argumentation is hindered by the complex nature of how argumentation unfolds in the course of a live discussion and by the tools available for analyzing it. Although multiple models for analyzing argumentation exist (Chinn & Anderson, 1998; Erduran, 2008; Grennan, 1997; Kienpointer, 1992; Nussbaum, 2011), the product generated within these models typically consists of simple counts of separate argument features or dialogue moves, with no indication of whether these moves successfully build reasonable arguments and critique arguments that are unreasonable. This is true even of analytic models that distinguish higher-order, from lower-order argument moves. Another problem with using these models to assess student argument quality is that they

do not indicate whether student argumentation moves were made reasonably in the context of the particular dialogue in which they appeared, i.e. whether the moves were intended to, or actually advanced the inquiry. My own analysis of student discussions using these models revealed that important information was masked by simply counting the number of argument features per discussion.

The second limitation is that available analytic models for assessing student *argumentation quality* do not make clear connections between student argumentation and teacher interventions. In the literature review, I traced both of these methodological limitations to their use of the Toulmin model of argument construction and analysis that consists of a set of distinct argument elements, or "core features," e.g., *claims, warrants* and *data* (Toulmin, 1958). I concluded that removing core argument features from their sequential appearance and complex, recursive relationships in the context of live, original dialogue makes it difficult, if not impossible to understand either the extent to which students employed those features reasonably in an actual inquiry, or whether and how teacher facilitation influenced the generation of those features. In order to address both of these limitations, I developed a new analytic model for more accurately assessing the quality of student argumentation, which also provides insights into the relationship between the quality of arguments and teacher facilitation.

A New Analytic Model for Assessing the Quality of Student Argumentation

A key contribution of this study is a new method for analyzing student argumentation during classroom discussion. I developed the notion of *argument threads* – i.e., sequences of argument features evoked in response to a *big question* – as an analytic

frame that makes it possible not only to identify and quantify *core argument features* used by students in the course of a discussion, but also to more accurately evaluate the quality of student argumentation. In particular, by using *argument thread length* as an additional criterion that indicates the focus and sophistication of an argumentative dialogue, I was able to improve upon an existing framework for evaluating *argumentation quality* (Erduran et al., 2004). Discussions that appeared similar based on of the number of features per discussion, looked very different when organized by *argument threads*. When argument threads were used as the analytical framework, the impact of topical shifts on the generation of core features was made clear as well. My study revealed that short *argument threads* have fewer argument features, including those features used in other frameworks to indicate quality, such as *counter-arguments*, *challenges, and responses to challenge* (Clark & Sampson, 2008; Erduran et al., 2004; Keefer, Zeitz & Resnick, 2000).

Subsequent studies could help establish whether there is such a thing as a minimum thread length for *argumentation quality.* It seems clear from the analysis, though, that frameworks like *argument threads* that organize student dialogue according to 1) the task students are working on (i.e., answering the *big question*) and 2) whether and how they are doing so (e.g., constructing arguments in response the question, critiquing unreasonable arguments) offer significant value to the analysis of group discussion and argumentation.

The Nature of Expert Facilitation of Inquiry Dialogue

My review of the literature revealed a gap in knowledge about methods for empirically studying facilitator contributions to argumentation. By using qualitative methods, this exploratory study helped to develop one way of conducting such an examination and produced codes and interpretations that can be tested in subsequent studies. The new analytic model I developed for this study makes it possible to generate a more meaningful understanding of how *argument features* are generated by students in response to each other and to interventions made by their teachers. By analyzing teacher interventions within *argument threads*, it is possible to see how those interventions impacted the focus of the discussions, and by extension, the quality of student argumentation.

My analysis of transcripts revealed a set of specific types of teacher moves used during the discussions. Although I started with a more expansive list of teacher moves drawn from the P4C materials, my application of the new analytic model to transcripts of student discussion facilitated by P4C experts led me to revise that list to reflect the seven moves most commonly made by those expert facilitators. The moves were: *distilling, identifying or completing a warrant, locating, naming moves, paraphrasing, probing reasoning* and *re-directing*. Despite their individual facilitation styles, each of the facilitators used these moves throughout their discussions – and used them to a greater extent in episodes of student discussion that the new model rated as being of higher quality. The identification of these seven *facilitator moves* as the fundamental repertoire of expert facilitators is a significant finding, not only in the world of precollege philosophy education, but in the broader world of classroom dialogue and argument

literacy. This is particularly so because this study provides empirical evidence for several moves, whose previous support was criticized as being largely theoretical or anecdotal (García-Moriyón, Rebollo & Colom, 2004; Reznitskaya, 2004; Trickey & Topping, 2004). This study helped to identify which of the moves from those theoretical and anecdotal sources were regularly used and how they were used to support argumentation. The seven *facilitator moves* identified in this study represent a refined set of moves that overlap with those found in the P4C pedagogical materials. Further study of these moves will help to revise and further inform those materials, while helping to further examine and test the insights they already contain.

Another significant finding of this study is the identification of an expert facilitation move that does not appear in the existing literature: *distilling*. This move is unlikely to be unique to the facilitators in this study, and deserves further investigation, given its possible role in initiating student *challenges*.

In the literature on approaches to classroom discussion, the focus on moves is widely adopted by researchers because particular teacher moves tend to generate particular student responses (Ford & Forman, 2006; Haroutunian-Gordon, 2009; Jadallah et al., 2010; Mayer, 2012; Sfard, 2008; Wells, 2007). Although examining these move-response relationships is useful, it doesn't tell us enough about *why* facilitators make the moves they do. In the current study, facilitators often used the same move for very different reasons and in different situations. It became apparent that expert facilitators make numerous judgment calls about when and how to use particular kinds of moves, in the moment-by-moment unfolding of particular dialogues. I hypothesized that these

facilitators were operating with particular pedagogic beliefs and principles about the nature of *inquiry dialogue* and about the role of a facilitator in that dialogue. In order to examine this supposition and further investigate the nature of facilitator beliefs and principles might be, I interviewed each facilitator.

I integrated the findings from the code-based analysis of discussion transcripts, along with reflections on my own facilitation experience, with the interview responses from facilitators. This allowed me to gain two important insights concerning use of the seven *facilitation moves*. The first insight involves the influence of the facilitator's *background knowledge*.

Facilitator Background Knowledge

All three facilitators reported some level of familiarity with the content of the issues raised during the discussion. Their familiarity was based on an academic study of theories relevant to the *big questions* discussed up by their students, and on their recollection of additional discussions on similar issues. In either case, the facilitators claimed that their *background knowledge* influenced their facilitation. According to all three facilitators, their familiarity with the arguments around the discussed topics helped them to identify important or interesting contributions from students. In the case of one discussion, the facilitator thought that his familiarity with the underlying topics led him to manipulate the discussion in ways he later regretted. This suggests that the use of background knowledge by facilitators is a complex issue, requiring further investigation.

The claim that content knowledge is a prerequisite for critical thinking and argumentation (McPeck, 1981) was introduced in Chapter 4. This claim has been

examined within the field of science education (Dawson & Schibeci, 2003; Patronis et al., 1999), with tentative findings suggesting that content knowledge contributes to argumentation quality (Means & Voss, 1996; Sadler & Fowler, 2006; Sadler & Donnelly, 2006; Tavares, Jimenez-Aleixandre, & Mortimer, 2010). Unfortunately, prior studies did not examine the role of background knowledge in a teacher's ability to facilitate *inquiry dialogue*. How much philosophical content knowledge a facilitator needs in order to be effective is an open question within the P4C literature (Echeverria, 2006). For example, in contrast to McPeck, Lipman, Sharp and Oscanyan (1980) claim that little philosophical content knowledge is necessary to facilitate effectively if the facilitator has the right dispositions and keeps the focus on the process of inquiry.

This study suggests that familiarity with the "landscape" of possible arguments and theories associated with a given question aids facilitation and by extension *argumentation quality*. Facilitator *background knowledge* seems to allow facilitators to help nudge the group to take up valuable contributions that might have been missed or ignored. This study also suggests that an understanding of basic argumentation features and structures contributes to facilitation. At a minimum, this familiarity supports one's ability to *track the inquiry*. Future research is needed to establish whether the kind and amount of previous knowledge contributes to successful facilitation. Studies exploring the relationship between this knowledge and one's *pedagogical principles* are needed as well.

Pedagogic Principles

The second insight that emerged from the integration of discussion analysis and the interviews is that the three facilitators activated a set of key *pedagogic principles*. *Pedagogic principles* reflect the ways teacher beliefs influence moment-to-moment decisions (Breen et al., 2001). The analysis of interviews suggests that expert facilitators consciously engage these key *principles* in determining which facilitation moves to make, how, and with what intent, and that doing so improves the quality of the discussion. Significantly, my study identified three pedagogic principles that inform the practice of expert facilitation: *tracking the inquiry, working toward a reasonable judgment* and *allowing the inquiry to be student driven.* In this study, all three of these principles were reflected in the general beliefs and the explanations of specific interventions given by all three facilitators. The prevalence of the principles suggests that professional development in dialogue facilitation should involve more than the introduction and familiarization of facilitation moves. It must also help teachers understand that the moves are meant to serve more general principles. Teachers' reflection on their own practice needs to involve not only identifying effective moves, but also examining the extent to which their use of those moves resulted in the achievement of underlying pedagogic principles.

An additional finding related to professional development is that having fewer principles active in a given discussion might be better for effective facilitation. This study suggests that principles can be complicated by other commitments or concerns (e.g., additional principles, content concerns, particular facilitator preferences). The implication is that good facilitation may be a matter of adopting and activating a small and consistent set of principles and committing to them during a discussion. This finding needs to be

examined in future studies, as it could be informative for the design of effective professional development in facilitating inquiry.

There is much about *pedagogic principles* that future research can help us understand. For example, we need to improve our understanding of how principles are developed and reinforced in particular practitioners. How certain principles function during *inquiry dialogue* in different content areas is also a question that needs to be addressed, given the apparent tension between some principles and teacher background knowledge.

In addition to supporting the presence and activation of *pedagogic principles*, the analysis associated with lengthy *argument threads* suggests that one of the principles, *work toward a reasonable judgment,* is particularly relevant to *argumentation quality*. The findings also suggest that this is especially the case when the principle is understood as aiming to answer the *big question.* When facilitators focused on the *big question,* and helped the group to do the same, *argumentation quality* increased. This was most clearly evident when comparing Facilitator 3's more focused discussion (longer *argument threads*) to her less focused one (more and shorter *argument threads*). In her focused discussion, she expressed a clear concern for answering the *big question*. Her less focused discussion included four distinct *argument threads*. During that discussion, the facilitator seemed to have a more general focus on exploring the topic, which may have reflected a more accepting attitude toward *thread shifts*. The general orientation of the facilitator also determined whether *argument thread shifts* were productive or not (e.g., created longer *argument threads*). Productive shifts in the argument occurred when the

shift was purposeful and used to support progress on the *big question*. In contrast, shifts

that were made to embrace specific moves or were not related to the *big question* were

less productive in terms of *argumentation quality*.

Although this finding is tentative and demands further study, it does appear that

when the facilitators were concerned with staying on the question or used the question to

re-focus the group, *argument threads* were longer and there were fewer *argument thread*

shifts. This again has implications for practice in general and professional development in

particular. If classroom discussion is being used by teachers to address argument literacy

and if argumentation quality is more conducive to that increase, then conceiving of

inquiry dialogue as concept exploration, rather than working toward an answer to a *big*

question, seems to be less effective. This means that a clearly defined sense of *inquiry*

that includes a focus on the *big question* needs to be adopted as a normative frame for the

practice and professional development efforts.

An additional implication of being oriented toward the *big question* relates back

to the issue of *core argument features*. This study suggests that even though some core

features do represent higher levels of *argumentation quality* (e.g., student generated

challenges and *responses to challenge)*, embracing them or initiating them independent

of a concern for their contribution to the *big question* could detract from quality. This was

especially the case when *challenges* were made by the facilitator. Good facilitation then

involved relating the *challenge* to the question or problem being resolved. At times, it

also meant directing the group away from an irrelevant *challenge*. This was most clearly

exemplified in cases where I used *re-directing* to nudge the group away from *challenges*

aimed at testing the logistics or practicality of examples. Issues like these can distract the group from addressing the *big question*. The facilitator's ability to re-direct appropriately seemed again to be a matter of *pedagogic principles* and orientation.

Inquiry Dialogue as a Normative Frame

Finally, an overarching theme emerged in association with this study's findings. *Inquiry dialogue* appears to be the normative discourse practice that is most conducive to both the study and facilitation of group argumentation. This idea is not new and has been discussed in a theoretical literature on argumentation and P4C (Gregory, 2007; Walton, 1998). *Inquiry dialogue* as a normative discourse frame reflects both the principle of *working toward a reasonable judgment* and a focus on the *big question.* In applying Walton's conception of *inquiry dialogue* to P4C, Maughn Gregory (2007) suggests that these principles help mediate, and are supplemented by, the self-corrective tendencies of the community of inquiry.

> In the community of inquiry, therefore, the apparent tension between the principles of cumulativeness and retraction - that self-correction of the community members requires liberal retraction, but the forward moving, systematic progress toward a culminating judgment necessarily limits retraction - evaporates. So long as the participants keep the inquiry question in mind and work systematically toward producing a judgment addressing that question, retraction or self-correction of previous commitments is not merely allowable but necessary (p. 168).

Future studies on group argumentation need to further examine the use of *inquiry dialogue* as a normative discourse frame for classroom discussion and facilitation.

Trustworthiness

In this section, I will discuss a number of methodological strategies I used to increase the trustworthiness of this study. I used triangulation (Merriam, 2009) to find a point of convergence among the data sources used in the study: discussion transcripts and facilitator interviews. For example, my initial interpretations of the facilitator's role, derived from the analysis of the discussion transcripts, was further tested through interviewing facilitators. I also used a constant comparison method (Glaser & Strauss, 2008) to identify codes or themes from the data. Each time an instance of a given code emerged, I compared that new instance with previous instances, and with the established code itself. This reflective comparison served as a way of refining the code and improving its accuracy. By engaging in this process repeatedly and across multiple cases, I increased confidence in the interpretations of the data. I further enhanced the confidence and consistency in the use of the codes by maintaining an Audit Trail, where I recorded how codes were derived and how key coding decisions were made. The audit trail served as a coding manual in reliability studies, where a second rater coded a subset of the data to check the accuracy of my interpretations. 30% of the argument threads were re-coded by the second rater.

Another form of triangulation involved comparing facilitator responses in the two segments of the interview. For each of the reported facilitator beliefs, I went to their

explanation of moves to see if they explained their moves in ways that were consistent with their reported beliefs.

I also used peer examination to increase trustworthiness. Merriam (2009) describes this process as having a peer who is knowledgeable about the research topic look at some of the data to "assess whether the findings are plausible given the data" (p. 220). My Dissertation Chair had expertise and experience in studying classroom dialogue and argumentation. She was also the primary investigator on the original study (Reznitskaya et al., 2012), from which I pulled the discussion transcripts. These attributes made her particularly suited to evaluate whether my conclusions matched the data. As this study was conducted for my dissertation, my committee also took part in peer examination.

The assessment of the researcher's position (Merriam, 2009) is yet another method I used in my analysis. I constantly reflected on myself as an instrument of research. In the description of my analysis, I articulated some of the assumptions, dispositions, and theoretical commitments that I brought to the study. By being transparent about those assumptions and commitments, I was able to help the reader better understand how I approached the study and how I arrived at the conclusions I did (Merriam, 2009).

Limitations

There were a few limitations in this study. The first is that the sample size was relatively small, making it difficult to generalize the conclusions to larger populations. However, the richness of the data helped offset this limitation. This data represented a

valuable opportunity to analyze expert facilitation and its interpretation by three facilitators with extensive experience and understanding of *inquiry dialogue* and argumentation. Insights gained from the study are informative to future practitioners, even if not generalizable to all.

My review of the literature made another limitation clear. I was unable to identify any studies that examined facilitator contributions to argumentation. This left me without established methods to inform my own analysis. By using qualitative methods, this exploratory study helped to develop one way of conducting such an examination and produced codes and interpretations that can be tested in subsequent studies.

As this study is exploratory, any causal claims were tentative. Limitations in the data made causal analysis difficult. This was exacerbated by a lack of an established methodology for identifying links between moves and argumentation quality. Future studies using the method on a larger data set will help establish the trustworthiness of the approach used and increase the strength of any causal claims. This study helped to establish the consistency and reliability of the method, while producing tentative causal conclusions.

Additionally, there was a 7-year lapse in time between the original study and my own. The interviews with facilitators asked them to reflect on facilitation sessions that occurred several years ago. To address this issue, I asked the facilitators to review their discussions prior to their interviews. Because all facilitator interviews occurred during the present study, my analysis represents how the facilitators viewed and understood their facilitation and the arguments constructed by students today. The opportunity to identify

common and consistent methods of viewing and responding to student arguments from three unique practitioners remained.

Finally, I addressed the limitations associated with my own biases by making them explicit, as well as by recording and revising my data-analytic decisions and using peer review. These checks help to enhance the trustworthiness of my conclusions.

Conclusion

To conclude, this study sought to address our limited understanding of how teachers contribute to the quality of argumentation during *inquiry dialogue*. To learn more about expert teacher's contributions to the quality of student arguments, I conducted a systematic analysis of classroom discussions and facilitator interviews. My findings suggest that the strategic use of a limited set of *facilitator moves* helps teachers to support *argumentation quality*. My findings further suggest that the strategic use of moves is informed by the activation of the teacher's *pedagogic principles*. If we are to uphold education's promise of creating a more reasonable populace, which is capable of arriving at sound judgments concerning complex problems, then we must know more about how teachers can help their students develop argument skills. The methodological innovations established in this study should help future researchers work toward expanding that knowledge. Applying the new methodology tried out in the current study to larger data sets will help to improve our understanding of the relationships between *pedagogic principles*, *facilitator moves* and *argumentation quality*. My hope is that an increased understanding of these relationships, and the nature of facilitation itself, will in turn increase teachers' effective use of *inquiry dialogue* in the classroom.

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Appendix – Facilitator Interview Protocol

General Beliefs and Practices

Today, we will look at the video of a discussion you facilitated several years ago…. I will first be asking you some general questions.

- What do you see as the value of *inquiry dialogue*?

- What is the role of the facilitator during *inquiry dialogue*?

- Is there any mental framework that you use during facilitation?

- What do you keep track of during the discussion? (Explain why?) (follow-up: general mental model, way of organizing the talk)

- Do you keep track of argument building during the discussion?

- If No – Is there another way that helps you decide how and whether you'll intervene?

- If Yes – How important is it to keep track of argument building?

    - How does it help you with choosing when and how to intervene?

- What are ways to enhance argumentation quality during a discussion?

- How important is it to stay on the same topic during a discussion?

- How do you decide when to shift topics?

Review of Facilitation

Now we will watch the video together. I want to focus on specific moves and why you chose them. I will stop the video at selected points and at each point I am interested in these two questions:

- What is happening here?

- Why did you make this move here?

You can also jump in and stop at any point if there is something you would like to explain or point out.

[Note: Stop clip at places where key moves occur (Distill, Location, Naming, Re-Direct). Also check Paraphrasing by the facilitator to see if they are using the move to shape the engagement. Also look at a few different instances of Seeking Clarification and Paraphrasing. These moves seem to have more than one function and need to be explored.]

Thank you. I have two more questions:

- How familiar are you with the relevant arguments that have been constructed around this issue?

- You conducted this discussion some time ago. Has your approach to facilitation changed since then and if so how? [Variation for second clip: I ask you this before but I will ask it again for this clip.]

Intentionally left blank.