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The Moral Realism of Student Question-Asking in Classroom Practice

Susan Peterson Gong
Brigham Young University

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Susan Peterson Gong

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Stephen Yanchar, Chair
James Faulconer
Jason McDonald
LeGrand Richards
Alan Wilkins

Department of Instructional Psychology and Technology

Brigham Young University

ABSTRACT

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Susan Peterson Gong
Department of Instructional Psychology and Technology, BYU
Doctor of Philosophy

Question-asking has long been an integral part of human learning. In scholarly investigations over the past several decades, questions have been studied in terms of the answers they generate, their grammatical structure, their cognitive functions, their logical content, and their social dynamics. Studies of student classroom questioning have focused on science education and reading instruction particularly; they detail the reasons why students don't ask questions and add a plethora of recommendations about teaching students how to question. This qualitative study addressed question-asking from a hermeneutic moral realist perspective, studying question-asking as it unfolded in the everyday practice of learning in a graduate seminar on design thinking. Findings of the study included seven themes that fit within three broader metathemes about the complexities and virtues of classroom questioning, the sociality of question-asking, and the temporality of questions in practice. Specific themes that emerged from the study concerned the complexity of overlapping practices within the classroom, ways in which students evaluated the quality and virtue of their questioning interactions, the moral reference points that guided student participation in various kinds of questioning (e.g., convergent questions, divergent questions, challenges to others), and the temporality of student question-asking that reflected the way questions mattered to students and how different aspects of the subject matter were disclosed and concealed in the process of learning. Findings from this study suggest that a moral realist-oriented inquiry can provide a wide-ranging and nuanced set of insights regarding question-asking as a part of student learning.

Keywords: learner questions, question-asking, hermeneutics, moral realism, practice-internal goods, design, graduate study

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—UNESCO, 1980, p. 29

"The path of all knowledge leads through the question."

—Gadamer, 1993, p. 363

CHAPTER 1

Introduction

Stories of the practice of questioning have been at the heart of great learning traditions for thousands of years. In the biblical text, Abraham the wanderer, destined to be the father of nations, questioned God about the looming destruction of Sodom and Gomorrah. He asked, "Will thou also destroy the righteous with the wicked?" (Genesis 18:23, King James Version [KJV]). This was a thorny question about justice and mercy, about the challenge of leadership, and about Abraham's relationship to God. "Peradventure there be fifty righteous within the city: wilt thou also destroy and not spare the place of the fifty righteous that are therein?" he asked (Genesis 18:24, KJV). How is it that a man can challenge deity? How is it that he can suggest, "Shall not the Judge of all the earth do right?" (Genesis 18:25, KJV). This interchange can be viewed as a tutorial in which Abraham is the student of godliness.

From another tradition, Socrates asked his acolytes,

> [C]oncerning justice, what is it? —to speak the truth and to pay your debts—no more than this? And even to this are there not exceptions? Suppose that a friend when in his right mind has deposited arms with me and he asks for them when he is not in his right mind, ought I to give them back to him? (Plato, *The Republic,* 360 B.C./1994, book 1, para. 24)

Why was this great teacher toying with his followers? Why, when they tried to answer him, did he tease them further, "And so, you and Homer and Simonides are agreed that justice is an art of

theft; to be practiced however, 'for the good of friends and for the harm of enemies'—that was what you were saying?" (Plato, *The Republic,* 360 B.C./1994, book 1, para. 63). Why this back-and-forth dialectic? Why did Socrates not just tell them the answer to the question? Why did he not just share with them the nature of justice that he understood?

From a later tradition, a story of a woman at a well tells how she asked the thirsty stranger, Jesus, "How is it that thou, being a Jew, askest drink of me, which am a woman of Samaria?" (John 4:9, KJV). Why was it so important to her to clarify their relationship? When He told her that He was the one who had water for her, she asked more, "Art thou greater than our father Jacob, which gave us the well, and drank thereof himself, and his children, and his cattle?" (John 4:12, KJV). When He answered that if she drank of His water she would never thirst again, she answered, "I know that the Messiah cometh, which is called Christ: when he comes, he will tell us of all things" (John 4:25, KJV). He answered her, "I that speak unto thee am he" (John 4:26, KJV). Here the God-as-man very simply revealed himself to a woman, no less, of an antagonistic people. Why was this revelation given at this place and time to this person? What about her questions elicited His unveiling?

From a more modern tradition, Einstein (1950), in a short history of physics, explained this history as a series of progressing questions. He started with Leucippus's question: "When water freezes and becomes ice—apparently something entirely different from water—why is it that the thawing of the ice forms something which seems indistinguishable from the original water?" (p. 13). The answer, that they both must be made of particles, led to what Einstein describes as Bernoulli's question (two thousand years later): "Why does gas exert pressure on the walls of a container? In other words, is gas also matter, made of particles?" (p. 13). Such questions, as Einstein explained (1950), led to others:

> What is the action of material points on one another at a distance? . . . Should one conceive of the field as a state of a "carrier," or should it be endowed with an independent existence not reducible to anything else? . . . How can light have properties that are like matter and properties that are like waves? . . . Can mathematical calculations show the relation between these two kinds of properties? . . . What group of coordinate transformations can then be substituted for the group of Lorentz transformations? . . . What most simple property can be required from what most simple object (field) while preserving the principle of general relativity? . . . What kind of general covariant field law can be postulated for a symmetrical tensor field? (pp. 13–16)

Einstein ended the article with the goal of arriving at a unified field theory, saying, "Experience alone can decide on truth. Yet we have achieved something if we have succeeded in formulating a meaningful and precise question" (p. 17). Firestein (2012), a neuroscientist at Columbia University, explained the importance of questions in science, adding insight into Einstein's story:

> One good question can give rise to several layers of answers, can inspire decades-long searches for solutions, can generate whole new fields of inquiry, and can prompt changes in entrenched thinking. Answers, on the other hand, often end the process. (p. 11)

It is important to tell these stories at the beginning of this dissertation because these practices of asking questions emerge from traditions that taught people through the past, through their own experiences, and through their projections into the future. Questions emerged out of a tradition of back-and-forth interchanges that changed participants' understanding of their experience of the world. The stories of Abraham and the woman at the well embed question-

asking perspectives practices that have become somewhat strange to the modern world since Descartes proposed the idea "I think therefore I am." Descartes's powerful proposition channeled modern traditions of learning into conceptual terms or mental experiences, and learning since then has largely been approached as being about what we think inside our heads. Descartes's ideas have now been challenged by philosophers following in the tradition of Heidegger (1962), who made another turn in our ideas about human existence, suggesting that human experience is a matter of Being, of ontology, of who we are. This dissertation followed the lead of Heidegger, and the subsequent work of Charles Taylor, to explore the moral fit and significance of question-asking in classroom practice.

It is true that there have been important instructional initiatives which have not addressed learner question-asking as an important aspect of education: initiatives such as behaviorism (Skinner, 1953; Thorndike, 1911), factory-model schools (Donovan, 1921; Mann, 1957), direct instruction (Becker & Carnine, 1981; Engelmann, Becker, Carnine, & Gersten, 1988), or computer-based integrated learning systems (Bailey, 1993). However, many other important thinkers and educators, ancient and modern, have recognized the importance of learner questions. Aristotle remarked that there is no knowledge without questions. Socrates, whose dialectical teaching methods were based on the exchange of student and teacher questions, is still a significant influence in the philosophy of education. Philosopher Charles Taylor (1989) suggested that questioning is a fundamental human phenomenon. Gadamer (1993) explained that, "Discourse that is intended to reveal something requires that that thing be broken open by the question" (p. 357).

John Dewey (1971) proposed that "thinking is inquiry, investigation, turning over, probing or delving into, so as to find something new or see what is already known in a different

light. In short, it is questioning" (p. 265). Postman and Weingartner (1969) advocated asking questions as "the most significant intellectual tool human beings have" (p. 23). Graesser and Olde (2003) asserted, "It could be argued that questions are at the heart of virtually any complex task that an adult performs" (p. 524).

In 2002, Kate Zernike from the *New York Times* asked several college presidents what students needed to learn. Leon Botstein, president of Bard College, responded, "The primary skills should be analytical skill of interpretations and inquiry. In other words, to know how to frame a question" (p. D1). Firestein (2012) argued that the solution to managing our ignorance is "teaching students how to think in questions. . . . Questions are more relevant than answers. Questions are bigger than answers" (p. 11). Dillon (1988a), whose career focused on the importance of student questions, suggested, "It would seem that the questions of students, far more so than of teachers and text, serve to promote educative purposes such as student thinking and learning" (p. 28). Rothstein and Santana (2011), whose Right Question Institute has focused on teaching students how to ask questions, quoted a student saying, "I learned that when you ask your own questions you can actually learn more" (p. 15).

The purpose of this dissertation was to explore, from a moral realistic perspective, how student question-asking activities pointed students to the goods inherent in their classroom practice and how hermeneutic moral realism provided a unique basis for studying question-asking and stance-taking in this context. It's aim was to see what can be revealed about graduate student question-asking and learning practices when viewed through a moral realist lens.

Chapter 2, "Review of Research on Student Question-Asking," is a review of the literature on questions and questioning. It explores significant theoretical approaches taken to the study of questions and questioning as well as the research into questions in school classrooms.

Chapter 3, “A Methodological Framework for Exploring Question-Asking Practices,” elaborates the theoretical assumptions of moral realism that frame the issues for this study. Chapter 4, “Method,” details the research questions of the study and gives an account of the qualitative method that was applied to the research. Chapter 5, “Findings,” discusses the outcomes of the study, and Chapter 6, “Discussion,” reviews the important issues implicit in the results.

CHAPTER 2

Review of Research on Student Question-Asking

The focus of this study is on student question-asking from a moral realist framework. In order to provide a sense of the complex issues that attend the practice of question-asking, the first section of this review will take a broad approach, giving an overview of some of the ways researchers and thinkers have conceptualized questions and questioning. Such exploration can provide important background perspectives that inform inquiry into the multifaceted issues and assumptions at play in a dialogue about question-asking. The second section of the review focuses on the empirical research about question-asking in school classrooms. This review will clarify the need for more research on student perspectives of question-asking practices with a particular focus on the interplay of student relationships, narratives, assumptions, and values within a moral ecology.

Research Approaches for Questions and Question-Asking

Research on student questions and question-asking is part of a complex trajectory of research on learning in general. The literature reviewed below includes research approaches from knowledge-based taxonomies, cognitive models, componential analyses that trace cause and effect, logic and reasoning, the hermeneutic interpretation of question-asking practice, and social approaches to inquiry.

Knowledge-based taxonomies. A significant line of research on questions and questioning is taken from Aristotle's proposition that knowledge itself consists of answers to questions; that is, "the kinds of question we ask are as many as the kinds of things which we know" (*Posterior Analytics,* 350 B.C./1994, Book 2, Part 1). The interpretation of Aristotle's statement then, for some, has been to classify questions in relation to the classification of

knowledge. Aristotle's four kinds of questions were based on the kinds of knowledge that exist: "(1) whether the connexion of an attribute with a thing is a fact, (2) what is the reason of the connexion, (3) whether a thing exists, (4) [w]hat is the nature of the thing" (Book 2, Part 1). Dillon (1984) explained that this kind of classification organizes how we conceive of questions and provides the terms for a theory of inquiry about questioning.

Attempts at building a comprehensive classification based on knowledge models were not particularly successful. Dillon's (1984) review of 11 such schemes suggested that an evaluation of these schemes according to the criteria for evaluating taxonomies (whether or not they encompass the domain of discourse, whether the categories overlap, and whether or not more than one defining characteristic is used at each step [Derr, 1973]) revealed significant logical and material lapses in all of them. In this critique, he included his own taxonomy of questions with its 17 categories and 12 subcategories.

Eris's (2003) work on categories of design questions showed why taxonomies of questions could pose an ongoing problem. He suggested, for one thing, that for knowledge-based taxonomies to be complete, they need to include the kind of questions designers ask: questions where the answers might be hypothetical or questions with multiple possible answers. In addition, as Eris's own system showed, developing and changing ideas about the nature of knowledge itself leave gaps in previously conceived classification systems.

Componential analysis: Tracing causes and effects. Another more psychological strand of research suggests that to understand questions, researchers need to control the question-asking process by breaking them down into their components and tracing the causes and effects of each component (Dillon, 1998; Van der Meij, 1994). Dillon (1998) asserted that the onset of questioning begins with a percept (i.e., proposition or phenomenon) that encounters some kind of

disjunction, which then leads to perplexity. Once a questioner is in a state of perplexity, there is an interrogative mood that leads to a verbal or written question. This question then sparks search behavior that results in an answer, which is formulated as a new proposition (i.e., knowledge and learning) and which then encounters new disjuncts and leads to new questions. It is an ongoing process. Van der Meij's (1994) review of literature suggested that a simplified version of Dillon's (1998) analysis into *onset, formulation,* and *response* would account for most of the literature in educational questioning, an organization I have followed below.

Onset: Presuppositions and presumptions. Presuppositions, according to Dillon, are "the assumptions of the questioner, the things the questioner takes to be true without proof or demonstration" (as cited in Van der Meij, 1994, p. 139). Studies on the onset of questions explore how presuppositions, presumptions, and perplexity affect questioning (Flammer, Kaiser, & Miller-Bouquet, 1981; Galambos & Black, 1985). Van der Meij asserted that presuppositions and presumptions include research on the various beliefs and personal characteristics of learners that affect questioning (Aberbach, Lynch, & Eccles, 1991; Chinn & Brewer, 1993; Newman, 1991; Robertson, 1993; Robertson, Black, & Lehnert, 1985; Shell & Eisenberg, 1992). Personal characteristics might also include motivation and self-esteem (Good, Slavings, Harel, & Emerson, 1987; Nadler, 1983; Nelson-LeGall & Glor-Scheib, 1985; Newman, 1991; Shell & Eisenberg, 1992; Van der Meij, 1986). Primary and secondary motivations may also include both information gathering and emotional issues (Newman 1991; Van der Meij et al., 1989).

Berlyne and Frommer (1966) concluded that certain variables made children more inclined to ask questions. Their theory of curiosity posited that questioning is a form of "epistemic behavior" induced by conceptual conflict as a result of external stimuli such as novelty, "surprisingness," complexity, and incongruity, which induce subjective uncertainty. An

important addition to this research includes self-questioning. Dukes (1982) found that groups that used self-reinforcement techniques asked more questions than either external or no reinforcement groups. Other investigators have added to this outcome by comparing effects of internal and external stimuli on the quality of study questions (Van der Meij, 1994). They have concluded that questioning prompted by a person's own reflections results in better questions (Brown, 1992; Fishbein, van Leeuwen, & Langmeyer, 1992; King, 1992; Scardamalia & Bereiter, 1991, 1992; Watts & Pedrosa de Jesus, 2005).

Onset: Perplexity. Many researchers identify perplexity, which Dillon (1998) called a "disjunct," as a core impetus of questions. Otero and Graesser (2001) asserted, "Questions are asked when there are contradictions, anomalous information, obstacles to goals, uncertainty, and obvious gaps in knowledge" (p. 145). According to some researchers, this phenomenon arises because a stimulus input clashes with the world knowledge people hold (Berlyne, 1960; Dillon, 1998; Flammer et al., 1981; Graesser & McMahen, 1993; Miyake & Norman, 1979). Such research assumes that this perplexity is triggered by external cues that are familiar enough to be known but unfamiliar enough to be distinct (Berlyne, 1960, 1965; Berlyne & Frommer, 1966; Chinn & Brewer, 1993; Garner, Alexander, Gillingham, Kulikowich, & Brown, 1991; Isaacs, 1930; Markman, 1979).

The value of perplexity is viewed in various ways by researchers. Berlyne (1965) asserted that phenomena which are "novel, surprising, complex, incongruous, or ambiguous" create an "aversive" state which can be resolved by asking questions (p. 72). Lindfors (1999) took a different tack, calling perplexity a problem of "balance" (p. 134). She asked, "Is it better to be in balance (in a state of rest or resolution) or off balance (destabilized, aroused, energized) in our thought and expression of it?" (p. 134). She referenced Smith (1975), who thought of

uncertainty as wakefulness, and Donaldson (1979), who took an even deeper approach, saying, "We are beings who ask questions." Donaldson characterized humans as beings who at times seek the one state and sometimes the other, suggesting that we may "positively seek out [puzzling situations], as if we like having to deal with things that we do not understand, things that challenge us intellectually" (p. 117).

Formulation. According to Van der Meij (1994), Dillon's second area, formulation of the question, moved the question from impetus to tangibility. While onset defines the problem area, formulations start to act on the problem (Dillon, 1982; Getzels, 1982; Paradice, 1992; Subotnik & Moore, 1988). Research on formulation addresses various issues: barriers to questioning (Chinn & Brewer, 1993; Van der Meij, 1990), search strategies (Mosher & Hornsby, 1968), domain (Schraagen, 1993; Siegler, 1977; Van der Meij, 1986), schemata and scripts (Flammer et al., 1981), and sequencing (Robertson & Swartz, 1988; Schraagen, 1993; Smith, Tykodi, & Mynatt, 1988). Dillon (1988b) added that other important features of question formulation include "motives, attitudes, beliefs, and interests" (p. 189).

Response. The response to questioning moves the focus of questions-as-effects to questions-as-cause. Van der Meij (1994) defined this stage as consisting of a search for information (Dreher & Brown, 1993; Dreher & Guthrie, 1990), finding an answer (Nelson-LeGall, 1981; Nelson-LeGall & Glor-Scheib, 1985; Newman, 1991), giving a correct response to the answer (Dillon, 1988a, 1988b; Shell & Eisenberg, 1992), and processing the answer (Van der Meij, 1990). Some research ties questions to other outcomes. A 2003 study of Harper, Etkina, and Lin explored the relationship between types of questions and understanding. Chin and Chia (2004) studied the relationship between questions and the knowledge construction process. Pedrosa de Jesus, Almeida, and Watts (2004) used student questions to study learning styles.

The cognitive approach. Another approach to the search for the cause and effect of questions has focused on the search for cognitive mechanisms (i.e., representational structures) that exist in the mind and the computational procedures that operate on those structures (Varela, Thompson, & Rosch, 1991). The cognitive view treats question generation as a fundamental component in processes that operate at deep conceptual levels (Chin & Osborne, 2008). Typically, cognitive research on question-asking seeks to specify the precise mechanisms of the questioning process itself (Otero & Graesser, 2001). Other strands have focused on identifying the functional role of questions as they contribute to other cognitive processes (Tsui, 1992). A third strand of research identifies functionality through classification schemes (Chin & Osborne, 2008).

Mechanisms. An important example of the attempt to specify cognitive mechanisms, Graesser and Black's (2001) conceptual model of human question-asking focused on the discrepancies between representations of information and the world knowledge of readers (Otero & Graesser, 2001). Researchers assigned categories to knowledge domains (i.e., graph structures which were identified as concepts, events, states, or goals). These domain representations, connected by relational arcs (Graesser & Clark, 1985; Graesser, Gordon, & Brainerd, 1992; Sternberg, 1987), should function according to production rules (Anderson, 1983; VanLehn, 1990). Such domain representations and relationships were supposed to specify the conditions for asking questions. The goal of the research was to ascertain the sufficiency of the model in predicting the conditions that generated certain classes of questions (Otero & Graesser, 2001).

Research on the functional role of questions in cognitive processes has identified questions as critical mechanisms in comprehension, problem-solving, intelligence, and creativity (Collins, Brown, & Newman, 1989; Ennis, 1985; Graesser, Person, & Huber, 1992; Hayes, 1981;

Rosenshine, Meister, & Chapman, 1996; Schank, 1986; Sternberg, 1987). According to this approach, questions activate prior knowledge. They also help students focus their learning and add to their knowledge (Collins et al., 1990; Craik & Lockhart, 1972; King, 1994a; Marbach-Ad & Sokolove, 2000; Palincsar & Brown, 1984; Schmidt, 1983; Singer, 1978). Thus, this approach suggests that questions promote processes embedded in critical thinking, problem-solving, and reasoning (Graesser, Baggett, & Williams, 1996; Graesser, McMahen, & Johnson, 1994; Hayes, 1981; Hilton, 1990; Olson, Duffy, & Mack, 1985); enhance inference in text understanding (Rosenshine et al., 1996); and facilitate general productive thinking skills (Gallas, 1995).

Functional classification. Researchers have also worked at classifying questions according to the cognition required for producing answers (Chin & Osborne, 2008; Yarden, Brill, & Falk, 2001). Bloom's (1984) taxonomy of thinking skills (knowledge, comprehension, application, analysis, synthesis, and evaluation) has provided a template that many researchers have used to analyze questions from this standpoint (Chin & Osborne, 2008).

Other attempts at following this line of reasoning include Raphael and Pearson (1985), who divided all questions into three types based on a relationship between question and answer and the cognitive processes required to arrive at the answer. Pizzini and Shepardson (1991) categorized the cognitive level of students' questions as input, processing, or output. Scardamalia and Bereiter (1992) divided student questions into two types: text-based questions, which students ask in relation to text, and knowledge-based questions, which arise spontaneously from personal interest or an effort to make sense of the world.

For teaching students to think scientifically, Chin and Kayalvizhi (2002) proposed a typology of investigable and non-investigable questions. Investigable questions are those in which students design and perform hands-on investigations to find answers. Non-investigable

questions are basic information questions, complex information questions that probe an underlying mechanism and where explanations require some theorizing, and non-scientific questions (i.e., philosophical and religious questions). Chin and Brown (2000) and Chin et al. (2002) also worked with categorizing questions as surface questions based on facts and procedures and (borrowing the Scardamalia and Bereiter [1992] term) *wonderment* questions to refer to those based on comprehension, prediction, anomaly detection, application, and planning. In Raphael and Pearson's (1985) study, students were taught to identify and recognize three types of questions: factual, inferential, and background-based. Tomm (1988) proposed eight reflective question types for workplace practice: future oriented, observer perspective, unexpected context change, embedded suggestion, normative comparison, distinction clarifying, introducing hypotheses, and process interruption.

In spite of the enthusiasm for categorical schema, Malthouse, Watts, and Roffey-Barentsen (2015) have warned that many researchers' taxonomies "resort simply to lists . . . which have little basis in theory" (p. 71). Rosenshine et al.'s (1996) review of research found that "studies in which students were taught to generate questions based on question types were notably unsuccessful" (p. 198). They concluded, "Perhaps the question types prompt is not . . . effective for learning to ask questions" (p. 198).

The formal logic of question-asking. A different strand of research about questioning has identified questions as a subset of logic (Belnap & Steel, 1977; Egli & Schleichert, 1976; Prior & Prior, 1955). In this approach to formalizing the study of question-asking, inquiry involves a focus on syntax and semantics in an attempt to create a metalanguage that might make it possible to categorize questions, evaluate them, and connect questions and answers (Belnap &

Steel, 1977). Prior and Prior (1955) coined the term *erotetic* to distinguish this branch of the logic of questions as a subset of the logic of statements.

More recent work on erotetic logic asserts that rather than a subset of logic, questions and answers are fundamental to our ability to reason in general (Groenendijk, 2007; Koralus & Mascarenhas, 2013; Mascarenhas, 2009). Koralus and Mascarenhas (2013) proposed that "questions themselves make us rational" and that "the relationship between questions and answers is central to both our successes and failures of reasoning" (p. 312). Drawn from work in mental models (Johnson-Laird & Byrne, 1991), mental logic (Oaksford & Chater, 2007; Rips, 1994), inquisitive semantics (Groenendijk, 2007; Mascarenhas, 2009), and truth-maker semantics (Fine, 2012; Van Fraassen, 1969), the Koralus and Mascarenhas (2013) theory of erotetic reasoning shows how: (a) "our natural capacity for reasoning proceeds by treating successive premises as questions and maximally strong answers to them" and (b) "systematically asking a certain type of question as we interpret each new premise allows us to reason in a classically valid way" (p. 312). Koralus and Mascarenhas summarized this new position on the logic of questioning: "the desire for answers makes our reasoning fallible, but our ability to ask the right questions puts us back on track" (2013, p. 313).

However, the mental model approach upon which this latest version of erotetic reasoning is based has been subject to criticism (Fowler, 2015; Papineau, 2013; Searle, 2002). These criticisms suggest that the assumptions behind the philosophical position are self-contradicting and that conclusions are not, in the end, meaningful. One reviewer, quoted by Koralus and Mascarenhas (2013) themselves, critiqued their mental model meanings as "static" (p. 358). In a thoughtful critique of formalist approaches to language and communicative practices in general, Hanks (1996) posits that this kind of approach "promises more than it can deliver" (p. 197).

Hanks asserted that “language is irreducible itself and that despite incremental growth in the systematic study of language, there is still no adequate way of describing actual speech in the world” (p. 15). For one thing, time does not play a part in formalist analyses of language whose systems are by definition synchronous units in which “the idealized speaker-listener does little more than actualize forms prefigured by the rules” (p. 231). Practical feasibility, Hanks suggested, fundamentally differs from formal potential, and “this element of practice has no formal analog in formal models of language” (p. 231).

However, the most serious critique, not only of mental models but of the entire approach taken by cognitive researchers (along with the human science goals of identifying controllable cause-and-effect relationships that are seen to increase prediction and control), arises from what Bruns (1992) identified as “Heidegger’s Copernican revolution in the human sciences” (p. 2). Heidegger proposed that the nature of human reality, *Dasein,* is not like Descartes’s idea of a disembodied mind that can apprehend reality in a context-free apprehension of knowledge of cues, attributes, features, factors, and so forth, and relate them through laws as natural science does or rules as cognitive science attempts to do (Dreyfus, 1994). *Dasein* is being-in-the-world. As Wrathall (2005) pointed out, “One of Heidegger’s most important insights is that human existence is grounded in our always already finding ourselves in the world” (p. 10). Heidegger’s approach called into question the fundamental assumptions that underpin attempts to turn the human sciences into a replication of the natural sciences. Dreyfus (1994) explained:

> Heidegger introduces an analysis of intentionality or meaning that leads him to question both meaningless formal models and the traditional claim that the basic relation of the mind to the world is a relation of a subject to objects by way of mental meanings. (p. 3)

The hermeneutic approach to questions. Following from Heidegger's ontological approach, Gadamer (1993) positioned questions and questioning as an inherent aspect of human interpretation. Questioning is part of the reflective nature of dialogue in which humans engage with others and with the world—a process of reinterpretation through which understanding grows as personal horizons are challenged and disrupted. In approaching a text or example, Gadamer (1993) explained:

> In order to understand an utterance, we must always ask ourselves: To what question or to what provocation was it the answer? Was the statement ironic? To whom was it addressed? Without taking into account this motivational context, . . . there is no way one can hope to understand. This is the heart of both Plato's dialectic and of contemporary hermeneutics. (p. 498)

For Gadamer, understanding was much more than simply recreating someone else's meaning; it implied a way of having paths and possibilities opened up that "pass into one's own thinking." To explore questions in this way, then, is to explore the way humans experience understanding. Indeed, Gadamer suggested that "the logic of the human sciences is the logic of the question" and that "we understand . . . only by acquiring the horizon of the question—a horizon that, as such, necessarily includes other possible answers" (p. 370). Taylor (1989) concurred:

> We take as basic that the human agent exists in a space of questions. And these are the questions to which our framework-definitions are answers, providing the horizon within which we know where we stand, and what meanings things have for us. (p. 29)

Questioning in this sense is more than an academic exercise. It lies at the heart of what it means to be open to experience. In one sense, Taylor (1989) suggested, the question "presents

itself to us as it poses an urgent question to us" (p. 371). Because we are beings who are stimulated by meanings, who are interested in the world, then,

> Events, or our reactions to them, because they break through our expectations can also present themselves as laden with meaning. . . . In this manner, our experience and what we experience pose a question to us, demand an answer. In order to give that answer, in order to determine our response to it, we must ask what it has to say to us. (Taylor, 1989, p. 371)

Such questioning in experience is intrinsically meaningful to us because the process of interpretation in this sense goes to the heart of who we are. "The structure of the question," as van Tongeren (1994) explained, "implies a recognition of the not-knowing of the answer and of the wanting to know it" (p. 201). As van Tongeren put it, "Our sense of who we are arises from an interpretation and we in our turn interpret the interpretation" (p. 201).

Social and conversational analysis. Understanding the contextual and social nature of interpretation has influenced groundbreaking work in the social nature of learning (Lave & Wenger, 1991), linguistics (Hanks, 1996), and conversation analysis (Goffman, 1981; Sacks, 1992). Such changes have, in turn, changed the theoretical landscape of question-asking analysis and opened up new avenues for thinking about questions and new methodologies for research. According to Van der Meij (1994), a broader look at questioning includes a consideration of context: "Asking whether one's brother can be considered stout may reflect a wonderful typing of stoutness, but it is incomprehensible if the respondent does not share some knowledge about the questioner's brother" (p. 150). In Lindfors's (1999) extended essay on the social nature of inquiry, questioning was defined by human purpose: "to connect with others (social), to understand the world (intellectual), to reveal oneself with it (personal)" (p. ix). Her social

perspective led to meaningful observations: “Inquiry draws on various perspectives on experience. . . . Inquiry starts at the intersection of know/not-know. . . . Sense in inquiry involves feeling as well as thought. . . . Inquiry’s stance is uncertain and invitational” (pp. 120–124).

Malthouse et al.’s (2015) study of reflective questioning practices showed a dynamic relationship between self and context, “where people and workplace both play an active role” (p. 77). Their research focused on “the relationship between self and world” in which participants have a “personal sense of agency” (p. 75). Malthouse et al. also suggested that reflective questioning shows that “both moral and emotional dimensions are usual, and essential” (p. 76).

Analysis of questioning as conversation (Goffman, 1981; Levinson, 2000; Sacks, 1992) has also opened new approaches. Goffman’s (1981) analysis lay in the proposition that “questioners are oriented to what lies just ahead, and depend on what is to come; answerers are oriented to what has just been said, and look backward, not forward. . . . Whatever answers do, they must do this with something already begun” (p. 5). Lindfors’s (1999) dialogic approach to question-asking, taken from Bakhtin’s (1986) very influential work, focused on “utterance,” rather than the sentence, as the important unit of communication. According to Lindfors (1999), Bakhtin’s interest was in the “actualities of social interaction” rather than on “what lurks in the recesses of the speaker’s mind” (p. 86). For Lindfors (1999), analyzing the “conversational turn” in conversations, as questioners become listeners and listeners become the questioners, can reveal the human meaning of the interaction, including the relationships, needs, and interpretation of the participants.

One strand of conversational analysis, which focused on the power aspect of questioning relationships, has generated a provocative conversation. Harvey Sacks (1992) stated that the person who is doing the questions has control of the conversation. Freed and Ehrlich (2010) have

expanded the view of questioning in relationship to power structures in a collection of studies that use conversational analysis, discourse analysis, discursive psychology, and sociolinguistics to analyze control and power politics implied in the practice of question-asking and answering in institutional settings: courtrooms, medical establishments, public offices, crisis hotlines, and so forth.

However, Sacks (1992) himself hedged his own proposition about the power relations of question-asking, saying that in a sense, when you are asking the questions, you could be understood not to be in control. His comment is followed by several stories that show how questioners and respondents have multiple options in their interchanges that mitigate control by any one person. From another perspective, based upon Brown and Levinson (1978) and Goody (1978), Lindfors (1999) showed how questioning exchanges that seem to embed issues of power may have more to do with forms of politeness. According to her, questioning interactions demonstrate (or lack) awareness of social distance, social rank, and the degree of imposition taken in a question-answer interchange.

In a classroom context, Bingham (2005) found that practical insights emerging from a hermeneutic approach included three themes for the classroom practice of teaching through questioning: nonsuperficiality, humility, and circuitry. Nonsuperficiality implies that the question "does something to educational content at the same time that it questions." A question works within content as well as upon content. Humility implies that to ask a question, one must want to know. According to Bingham, "To ask a question . . . is an admission of incompleteness. Questioning betrays humility." Circuitry, according to Bingham, is the connection "between self and other" in the questioning process, a mode where both teacher and student are the asker of questions. In this circuitry, a suspension of one's particular point of view is required "in order to

make meaning out of the question that is posed." As Bingham quoted Gadamer (1993), "The circuit of questioning, from the teacher to the student, creates a circuit in which questions always follow questions" (p. 236). Bingham concluded that questioning orients us not only to content but to others and even toward "death, finitude, intentionality, human meaning, and human understanding" (p. 236).

Question-Asking in Classroom Practice

A number of researchers have documented the need for more research on student questioning in classroom practice (Chin & Brown, 2002; Chin & Osborne, 2008; Dillon, 1990; Rop, 2003; Tobin, 1987; van Zee, 2000; Yerrick, 2000). Much of the existing research, addressed below, on how student questions and question-asking are practiced in schools and classrooms, focuses on the problems associated with student questioning and the strategies practitioners have used to address those problems by training students to ask questions. A few studies explore question-asking from a more ethnographic, student-centered perspective, and others explore how questions themselves can become the lens for assessing classroom practice and student learning.

Problems with student questioning. Most of the early research on student questioning practices in classrooms provides a disquieting documentation of their scarcity. In one of the earliest studies of student questioning, Stevens (1912) found few student questions. Houston (1938) visited junior high classrooms and, during five or six lessons, found seven questions. When Corey (1940) reviewed senior high classrooms for a week, he heard fewer than one question per student. In secondary classrooms, Fahey (1942) documented one question per pupil per month. From elementary classrooms, Dodl (1966) found 2% of all questions were asked by students. From secondary classes, Johns (1968) found student questions made up 2% of the

classroom questions. In an elementary classroom, Susskind (1969) saw 84 questions from the teacher and two from students. In 1979, he found one question per student per month. Gall's (1970) study showed similar results. Dillon's study (1988b) showed the following:

> Questions take up two-thirds of the teacher's turns at talk. Only 6% of student turns are interrogative, with less than 1% in all consisting of information-seeking questions. . . . Students in the class together ask about two information questions an hour, while the teacher is asking about two questions per minute. (p. 199)

Other studies validate these findings (Davis, 1971; Good et al., 1987; Graesser et al., 1994; Van der Meij, 1988).

In addition, researchers find that when students do ask questions, few of them are really seeking more knowledge (Carr, 1998; Van der Meij, 1994). The questions in the student's mind, spoken or not, are often based on mistaken conceptions (Dillon, 1998, p. 31). Also, few students spontaneously ask high-level questions (Graesser & Person, 1994). As Carr (1998) found, most student questions are about how to do assignments or carry out procedures or classroom requirements. Dillon (1988b) soberly concluded,

> Most pupils, even in the early grades, have become masters at answering questions. Few students, even by late graduate school, have become more than a novice at asking questions. The remedial status of student questioning appears to be its normative state in past, present and future schooling. (p. 208)

Some non-classroom-based studies show a different overall picture of the question-asking of children. They find that children *do* ask questions, and more of them as they get older—when they are at play (Van Hekken & Roelofsen, 1982), at home (Tizard, Hughes, Carmichael, & Pinkerton, 1983), or in one-on-one settings (Yamamoto, 1962). As Dillon (1988a) summarized,

"Children may ask a lot of questions, but not in school. And the older they get the fewer they ask" (p. 10).

Given the widespread belief in the critical importance of asking questions to learning, it is a puzzling contradiction that student questioning does not play a bigger part in classroom practice. Dillon (1988b) provided a thoughtful analysis focused on the reasons this might be: (a) there is little room for questions in normal classrooms, where teachers have the floor and a tight agenda for disseminating the information they have decided that the children need, and (b) norms of behavior make question-asking difficult. Students must break into the discussion and get permission to ask questions. They must "ask the right question in just the right way" (p. 8) to get answers. Students must ask the questions at just the right time, not too soon and not too late. "The student must contrive a question to which nearly everyone does not know the answer. Otherwise he will hear on all sides sighs and murmurs of 'What a dumb question'" (p. 10).

Dillon suggested, "It is anti-normative to display ignorance in school, to show perplexity, incomprehension, and need in the asking—especially when the matter is so simple and you seem to be the only one in the room who still does not understand" (p. 17). Dillon finally suggested that questions are a "display" of the self. In asking a question, a student "exhibits his state of mind, his dispositions of character, and the dynamics of his relation to the world" (p. 22). He concluded, "With most odds against the asking, students understandably ask few questions" (p. 7).

Researchers have continued to try to understand how classroom structures play into student reticence to ask questions. White and Gunstone (1992) suggested that the problem with student questions is their "unpredictability," which disrupts the planning, control, and assessment of learning. Other researchers have suggested that it is the very problem of controlling,

monitoring, and assessing learning that acts as the critical inhibitor of student question-asking (Good et al., 1987; King, 1994b; Wood & Wood, 1988). Woodward (1992) suggested that teachers may avoid student questions if they are not sure of their own mastery of concepts or if they feel that they might lose control of their teaching situation. Graesser and Person (1994) proposed that the low frequency and lack of sophistication of student questions come because teachers themselves do not ask good questions or because students have difficulty identifying their own knowledge deficits and difficulty detecting contradictory information, identifying missing data, and discerning necessary information from the superfluous. Roth and Roychoudhury (1993) found that most science curricula show little evidence of asking students to frame their own higher-level questions. Van der Meij (1994) added that other classroom factors, such as unwritten classroom rules (Karabenick & Sharma, 1991; Newman, 1991) or the size of group, may affect questioning.

Although some theorists have believed that the lack of questions arises from student problems in coming up with questions (Baker, 1979; Glenberg, Wilkinson, & Epstein, 1982; Graesser & McMahen, 1993; Markman, 1979), other research has indicated that the problem may just be in the expression of the questions they have. Van der Meij (1994) suggested that personal factors may have a complex relationship to student willingness to ask their questions. These personal factors might include problems with self-esteem or social awareness (Shell & Eisenberg, 1992). According to Pedrosa de Jesus et al. (2004), asking questions may make students feel more vulnerable (see also Watts, Gould, and Alsop, 1997), or reluctance may arise from a sensitivity to teacher attitudes (see also Marbach-Ad & Sokolove, 2000). Chin and Osborne (2008) have added that personal factors might include individual difference: the fact that learners have different levels of curiosity, different predispositions for risks, different

learning styles, or different attitudes toward uncertainty and doubt (see also Pedrosa de Jesus, Teixeira-Dias, & Watts, 2003).

The assumption that student questioning is essentially a lack of knowledge presents an interesting contradiction in the literature. Miyake and Norman (1979) asserted that students do not ask questions because they don't have an adequate knowledge base. White and Gunstone (1992) also articulated this position: "By and large, the better your understanding the more readily you will construct questions" (p. 159). That assumption, according to Chin and Osborne (2008), has been advocated by several others (Chi, De Leeuw, Chiu, & Lavancher, 1994; Marbach-Ad & Sokolove, 2000), including Chin and Osborne themselves.

Hans Van der Meij (1994) articulated an incisive critique of the position that the amount of knowledge is connected with the presence of questions. He asserted the following:

> There is by now a wide body of research indicating that this intuitively appealing idea has not been held up in research. Nine out of ten studies find an inverse linear correlation between number of questions and prior knowledge; subjects with less prior knowledge ask more questions (for a review, see Van der Meij 1991, 1992). It is, therefore, unfortunate that the frequency hypothesis is still widely cited in the literature. More importantly, it draws away the attention from more interesting issues on student questioning such as the motivations for asking questions, the obstacles to formulating and expressing questions, the difference between internally and externally triggered questioning, and the educational potential of not-answering student questions. (p. 141)

Scardamalia and Bereiter (1991) confirmed Van der Meij's analysis. They found that knowledge-based questions, which the students generated before they studied a topic, were able

to reflect things that students genuinely wondered about and were of a higher order than text-based questions that were produced after exposure to text materials. These questions focused on explanations and causes instead of facts, required more integration of complex and divergent information, and were more interesting (see also Chin & Brown, 2000).

One interesting contrast to question-asking deficits in classrooms is captured in Graesser and Person's (1994) study of question-asking during tutoring, where "student questions were approximately 240 times as frequent in tutoring settings, whereas tutor questions were only slightly more frequent than teacher questions" (p. 104). The glaring implication of this study might be that changing the social structure of classroom practice would affect the problem of lack of student questions. However, the majority of research in response to this problem has focused on creating strategies getting students to ask questions.

Strategies for training students to ask questions. Most educators and practitioners have responded to the problem of scarcity in student questions in classrooms by using specific strategies to elicit questions and by developing methods to teach students how to ask questions (Chin & Osborne, 2008; Davey & McBride, 1986; King, 1994a; Palincsar & Brown, 1984; Paris & Oka, 1986; Wong, 1985). They have taken the stance that students can be trained to ask questions that lead to increased learning and literacy (Beck, McKeown, Hamilton, & Kucan, 1997; Davey & McBride, 1986; King, 1989; Palincsar & Brown, 1984; Otero & Graesser, 2001; Singer & Donlan, 1982). Classroom-based efforts for remediating the deficit in student questioning include practical advice and more theoretically derived alternatives focused on text-based comprehension, science-based strategies, problem-based learning, and socially situated initiatives.

Practical advice. Dillon's (1988a) commonsense suggestions have provided a path for helping teachers encourage student questions:

1. Make systematic room for them.
2. Invite them in.
3. Wait patiently for them.
4. Welcome the question.
5. Sustain the asking. (pp. 25–31)

A number of other researchers have advocated learning environments that support inquiry learning as a part of the acquisition of self-regulated learning strategies (Blosser, 1973; Bransford, Goldman, & Vye, 1991; Collins, 1985; Palincsar & Brown, 1984; Papert, 1980; Pressley & Levin, 1983). Other teaching suggestions focus on practical ideas about how teachers can structure classroom space to encourage questions, including the use of a question board to publish student questions (Dixon, 1996). Watts et al. (1997) have also suggested allowing "free question time" during lessons and a question "brainstorm" at the beginning of instruction. Others suggest a question box; question eliciting, where students are assigned to prepare a question to ask others in the class; and the creation of questions as homework assignments (Chin & Brown, 2002; Jelly, 1985).

Practical question training includes a grassroots initiative generated by a nonprofit group, the Right Question Institute (RQI), established by Rothstein and Santana (2011). Rothstein and Santana worked with pupils in at-risk schools and with parents in economically disadvantaged neighborhoods and developed a practice-based methodology for teaching questioning skills, involving four eclectic steps (pupils and parents are trained in classrooms and online):

1. Choose a question focus (chosen by the teacher, the stimulus for questions can be a statement, a visual aid, or an aural aid, "anything that can sharply focus and attract the student attention, and stimulate them to formulate their own questions" [p. 19]).
2. Follow four question-producing rules:
   a. Ask as many questions as you can.
   b. Do not stop to discuss, judge, or answer any of the questions.
   c. Write down every question exactly as it was stated.
   d. Change any statements into questions.
3. Improve the questions. Define them as open or closed, and analyze their advantages and disadvantages.
4. Prioritize questions. Set clear criteria for prioritizing. Choose three questions. Provide a rationale for them. Report the questions and rationale.
5. Use the questions. Examples include using questions to guide discussions, to design experiments, or to develop projects.
6. Reflect and learn from the process. Develop a reflection activity by identifying the purpose of the reflection. Decide how to facilitate reflection: individual, small group with reports, or large group. Support by helping groups stay on task, encouraging student sharing, and validating all contributions.

This work brings together strands of questioning from business, social change agents, and engaged teaching practitioners. These include Dyer, Gregersen, and Christensen (2011), who developed the process of "question-storming" as a process of product innovation to challenge businesses to ask "what is," "what caused," "why," "why not," and "what if" questions (pp. 65–67). The focus on a stimulus to catalyze and narrow engagement looks like Paulo Freire's (1993)

use of "codes" that embed engaging problems to initiate discussion. Reflective practices echo the work of Schon (1983), Freire (1993), and others (King & Kitchener, 1994; Perry, 1970).

The strategic approach. Most question remediation strategies have emerged from a primarily cognitive theoretical position. As Graesser, Person and Huber (1992) so clearly articulated, "We need to understand the mechanisms that trigger questions when individuals are genuinely seeking information. Once we understand these mechanisms, we can design educational programs and computers that tap into these mechanisms and thereby maximize good questions" (p. 168). According to Chin and Osborne (2008), the cognitive approach suggests that questions might emerge from cognitive conflict (Allison & Shrigley, 1986) or real-world problems (Chin & Chia, 2004; Zoller, 1987). These approaches, according to Chin and Osborne (2008), include the need for questioning procedures, extensive cognitive coaching, and considerable opportunity for practice with feedback (King, 1994a; Palincsar & Brown, 1984; Paris & Oka, 1986).

Text-based comprehension strategies. Graesser and Black (2001) asserted that question-asking is an important component of text comprehension. Collins (1985) added that question-asking is necessary to the learning of complex material (see also Hilton, 1990; Olson et al., 1985; Singer, 1978). Afflerbach, Pearson, and Paris (2008) defined the purposes of text-based question-asking instruction as "deliberate, goal-directed attempts to control and modify the reader's effort to decode text, understand words, and construct meaning of text" (p. 368). Much of the research from this perspective focuses on finding out how questioning strategies can help students with text comprehension as they focus attention and organize and integrate new information with existing knowledge (Doerr & Tripp, 1999; King, 1994a). Studies of teaching schemas for question-asking include Singer and Donlan's (1982) problem-solving schema with question

generation for comprehension of complex short stories and Graesser, Lang, and Roberts' (1991) study on question answering in the context of stories.

The overall results of a Rosenshine et al. (1996) review of question-asking literature showed that self-questioning had the most significant results. They iterated, "Students may become more involved in reading when they are posing and answering their own questions and not merely responding to questions from a teacher and/or a text" (p. 183). According to Rosenshine et al., composing questions may require students to be more active in initiating their own learning (Collins et al., 1990; King, 1994b; Palincsar & Brown, 1984; Rosenshine et al., 1996; Singer, 1978), engage more deeply in processing material (Craik & Lockhart, 1972), improve comprehension and enhance recall (King, 1994b), and become more sensitive to the text (Wong, 1985).

There are a number of self-questioning strategies. One of these strategies supplies students with signal words (*who, what, where, when, why,* and *how*) to help them generate their own questions (Brady, 1990; Cohen, 1983; Davey & McBride, 1986). The generic questions or question stems strategy (King, 1989, 1990, 1992; Weiner, 1978) gives students question templates (e.g., *How are . . . and . . . alike?*) to help them generate certain kinds of questions.

Corley and Rauscher (2013) reviewed other text-based self-question-asking strategies including elaborative interrogation (Martin & Pressley, 1991; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989), the K-W-L strategy (Ogle, 1986), and the question-the-author strategy (Beck et al., 1997). The elaborate interrogation strategy helps students assimilate facts by constructing a reason why each fact makes sense. The K-W-L strategy (Olge, 1986) teaches students to make three columns: *K,* to help them record what they *know* about the subject matter, *W* for predictions (or what they *want* to know) about the text, and *L* for what they have *learned*

once they have read the text. This strategy helps students prepare to engage in the text and creates a set of expectations that arouse their curiosity. The question-the-author strategy (Beck et al., 1997) encouraged students to create questions as part of the process of reading the text. The teacher also has to be actively engaged in this process: selecting the text; choosing points for questioning; creating thoughtful questions; creating questions to model the process for the students; using "think-aloud" experiences to help students create and explore their questions; and assigning students to read passages, think through the teacher-prepared questions, and use the question style that the teacher has supplied.

Other self-questioning strategies, reviewed by Humphries (2013), include Gallagher and Aschner (1963), who identified memory-based thinking as "convergent" and evaluative thinking as "divergent," and Pearson and Johnson's (1978) QAR (question-answer relationships), which were self-questioning strategies based on text-explicit, text-implicit, and script-implicit methods of generating question-answer relationships (see also Raphael and Pearson, 1985). Therrien and Hughes (2008), in a review of 18 studies from 1976 to 1990, asserted that self-question generation showed the strongest evidence for reading strategies that improve text comprehension. A later review of studies of reading comprehension by the National Reading Panel in 2000 reiterated this view, finding that self-questioning showed the strongest statistical results for reading comprehension.

An important aspect of self-questioning, according to Rosenshine et al. (1996), is the metacognitive approach to student self-questions (see also Palincsar & Brown, 1984; Wong, 1985). Harris and Hodges (1995) defined metacognition as the "awareness and knowledge of one's mental processes such that one can monitor, regulate and direct them to a design end" (p. 153). According to Yang (2006), "an example of a metacognitive strategy would be asking

yourself questions about text and noting how well you are able to answer them" (p. 315). Watts and Pedrosa de Jesus (2005) called metacognition an iterative cycle in which questions act as both cause and effect in transformative thinking. As they explained,

> Learners' questions can cause variation, or changes, in their thinking, and such revisions can then, in turn, prompt further questions; and learners' questions can invoke, and be invoked by, feelings, and these feelings can then, in turn, generate and shape further questions. (p. 438)

Investigation-based strategies. In addition to learning science from text-based questioning (e.g., Chin & Osborne, 2008; Koch & Eckstein, 1991; Pearson, 1991), science educators have also explored ways to help students to develop questions for more hands-on investigations (King, 1994b; Roth & Roychoudhury, 1993). Chin and Kayalvizhi (2002) devised a typology of investigable and noninvestigable questions to help students and perform their own science explorations. Such questions allow students to generate and collect original data and to draw conclusions based on available firsthand evidence. According to Chin and Osborne (2008),

> Investigable questions include comparison, cause-and-effect, prediction, design-and-make, exploratory, descriptive, pattern-seeking, problem-solving, and validation of mental model questions. Examples include "Which type of material is best for keeping water hot?" (comparison), "How does concentration affect the rate at which salt dissolves in water?" (cause-and-effect), "What would happen to the distance travelled by a toy car if I raise the height of the inclined plane?" (prediction), and "What kinds of insects live in our garden?" (descriptive). (pp. 11–12)

Other hands-on initiatives include Alfke's (1974)—who focused student investigation on operational questions to permit question-askers to manipulate variables through elimination, substitution, or increasing or decreasing the variable—and Allison and Shrigley's (1986)—who used his approach to improve student skills through modeling and written practice. In addition, White and Frederiksen (1998) developed an "inquiry cycle" intended to scaffold the development of student inquiry with a cycle of questions that helps students formulate an investigable research question, generate alternative hypotheses and predictions, experiment, model the outcomes, apply them, and return to question-formulation.

In an attempt to help students ask deeper questions, Chin and Brown (2000) and Chin et al. (2002) used what they term a "depth-dynamic" model to distinguish between surface questions and deeper learning approaches, which focus on comprehension, prediction, anomaly detection, application, and planning questions. Chin et al. called the latter questions wonderment questions, a term coined by Scardamalia and Bereiter (1992) to indicate questions that reflect curiosity, puzzlement, skepticism, and knowledge-based speculations. In the Chin et al. (2002) study, open-ended problem-solving activities led to more wonderment questions, which, in turn, stimulated more discussion, explanation, and prediction and also stimulated students to generate answers.

According to Chin and Osborne (2008),

> These studies suggest that students can be explicitly taught how to ask researchable questions for science investigations with some degree of success. Teachers can design instructional tasks that involve the posing of operational questions, as well as teach students the characteristics of researchable questions. In addition, they need to model the asking of these questions, provide students

> with exemplars and non-exemplars of such questions, and have students practice generating such questions. (p. 16)

Lindfors (1999), however, provided us with a provocative critique of these kinds of strategies for training in question-asking. According to her, highly controlled treatments may increase the numbers of questions the students ask, but unless they emerge out of the students' desire to know, neither the questions nor the stimulus have anything to do with authentic inquiry. If students are not trying to understand anything and not seeking anyone's help, they are not participating in inquiry. In one study, Chin and Kayalvizhi (2002) found that students were more enthusiastic about exploring their own questions. They reported feeling "happy," "excited," or "proud" about generating their own questions and described the research of their own questions as "thrilling," "fun," and "interesting." In addition, Cuccio-Schirripa and Steiner (2000) found, in testing the relationship between knowledge, skills, and student interest, that students' high-interest question levels were higher than their low-interest question levels, even without instruction. Taboada and Guthrie (2006) have asserted that examining the role motivation plays in student questioning "may be the next step" in understanding question-asking (p. 28).

Problem-based learning. Problem-based learning is another initiative that pulls students into inquiry by providing hypothetical or simulated problems for students to solve with the hope that, in the process of solving the problem, they will raise questions (Barrows, 1985; Savery & Duffy, 1996). Merrill (2002) defined his problem-based instruction as a "pebble-in-the-pond" model for instructional design. It allows learners to keep redefining problems in an ever-increasing circle of competence. Other inquiry learning environments such as the web-integrated science environment (WISE) provide students with scientific problems and the research materials that students examine in order to reach a conclusion about the problem (Linn & Slotta,

2006). Some problem-based learning situates the problems in text-based resources and provides the data for question-based investigations (see Hmelo-Silver, Duncan, & Chinn, 2007). According to some researchers, these initiatives show how questions act to bring about "shifts in student thinking" during problem-solving experiences (Doerr & Tripp, 1999, p. 231).

The social approach. According to Chin and Osborne (2008), propositions that have emphasized the social (Hodson & Hodson, 1998; Howe, 1996; O'Loughlin, 1992; Vygotsky, 1986), distributed (Pea, 1993), sociolinguistic (Carlsen, 1991), and situated (Brown, Collins, & Duguid, 1989; Hennessy, 1993; Wenger, 1998) aspects of learning have made impacts on the practice of question-asking in classrooms. For example, guided reciprocal peer questioning (Palincsar & Brown, 1984) focuses on helping peers ask one another open-ended questions. In reciprocal peer questioning, students take the role of teacher and implement strategies for discussion (King, 1990, 1992). Van Zee (2000) took a radical approach in her university research seminar by letting students talk about their own learning. Her guiding framework included indicators of student inquiry, student questions, and collaborative sense-making to help students develop independent inquiry. Van Zee, Iwasyk, Kurose, Simpson, and Wild (2001), pursuing this initiative, set up discourse situations to elicit student questions. They encouraged student conversations about their own observations and created environments to encourage students to try to listen and understand one another. They cultivated strategies of silence, wait times, and reticence.

Watts and Pedrosa de Jesus (2005) adopted what they called an interpretative research and a posture "where participants can be both informed—and transformed—by the inquiry process itself" (p. 440; see also Kemmis, 1991). Rop (2003) explored high school classes to listen to student questions, which, she said, "are seldom heard" (p. 16). She asked students to

discuss their own questioning, describe the reasons for their questions, and explain the impact of teacher response to their questions. Thus, a social lens for viewing question-asking changes not only the practice in the classroom but the methodology necessary for exploring that practice.

Critics of social and problem-based inquiry approaches, some basing their arguments on cognitive ideas of working memory and processing, suggest that there is no body of evidence to support student-centered, inquiry-based (which they term "constructionist") approaches that employ "minimal guidance" techniques (Kirschner, Sweller, & Clark, 2006). Some critics claim that the bulk of research does not support student-centered learning in general (Roblyer, 1996). However, defenders suggest that with support and scaffolding, social, inquiry-based, and problem-based learning are essential parts of a complete education and that educators should focus not only on content but also on learning that requires a broader view of educational goals (Hmelo-Silver et al., 2007).

Computer-based initiatives. Recent initiatives in integrating student questioning include a number of online initiatives (Yu, 2009). They include Piazza, a site that allows students to ask questions, answer each others' questions, and post notes based on classroom content. PeerWise, a web-based system, allows classrooms to integrate question-posing and peer assessment (Yu, Liu, & Chan, 2005). Some course management tools allow students to post questions to their online discussion forums (Colbert, Olson, & Clough, 2007). Some classrooms send students to Yahoo Answers, a question-and-answer website that answers questions submitted by users and allows members of the community to submit their answers.

Questions as a lens for assessing classroom practice. In addition to seeing question-asking as a classroom practice, a number of researchers have proposed questions as a tool for assessing instruction (Dori & Herscovitz, 1999; Maskill & Pedrosa de Jesus, 1997; Stevens,

1912). Van der Meij (1994) suggested that questions can be useful for diagnosis. Graesser and Olde (2003) remarked, "An excellent litmus test of deep comprehension is the quality of questions asked" (p. 524). According to Wong (1985), questioning helps students monitor the state of their own comprehension. Chin and Osborne (2008) suggested that student-generated questions can be an important part of peer assessment as well as self-assessment (see also Black, Harrison, Lee, Marshall, & William, 2004). Keys (1998) showed that student questions were important indicators of learning problems. Watts and Alsop (1995) found that students' science questions indicated their frames of reference, problems in understanding, and search paths. Susskind (1979) found that student questions were a measure of student interest and curiosity as well as their ability to influence class discussion.

Other ideas for using student questions in assessment include Eisner's idea (1965) that a way to assess student learning would be to elicit questions about material studied and score them according to the number and quality of the questions, relevance, and centrality to content. Taking a similar approach, Zoller (1987) developed the "Examination Where the Student Asks the Questions" (ESAQ), wherein university chemistry undergraduates invented questions about the topics they had studied, some of which were used in a take-home examination. Zoller reported that this activity increased student interest and active involvement.

Conclusion

While research on student question-asking is rich and diverse, there are important gaps in the literature that warrant further exploration. Researchers are beginning to focus on student perspectives regarding their own questioning practices (Chin et al., 2002; Pedrosa de Jesus et al., 2003; van Zee, 2000; van Zee et al., 2001), but there is still much work needed to follow up in upper-level and graduate classrooms. Only a handful of studies of student question-asking have

focused their study on university classrooms (Koch & Eckstein, 1991; van Zee, 2000; Zoller, 1987), and only two of them were located in graduate classrooms (Dukes, 1982; van Zee, 2000). In addition, none of the studies of student questioning have explored the dynamics of meaningful change in relationship to past practices or future projections. Although several researchers mentioned the moral dimensions of student questioning (Dillon, 1990; Malthouse et al., 2015), no studies have used these insights as a platform for further research on the moral dimension of questioning practices. And while some studies have looked at teacher-to-student and student-to-student relationships, only Candela (1998) explored the classroom context as an ecology, where students' questions, values, choices, and perceptions interacted with each other in meaningful, developing, and complex patterns. Moralist realist concepts espoused by theorists such as Taylor (1989), Brinkmann (2004), Hatab (2000), Yanchar (2016), and Yanchar and Slife (2017), have taken into account important aspects of practice including the role of personal agency, moral configurations, classroom interactions, and narrative accounts. This study has been an attempt to apply this moral realism approach to student questions and questioning from a hermeneutic perspective.

CHAPTER 3

A Methodological Framework for Exploring the Moral Realism of Question-Asking

A number of scholars have argued that practices studied from a hermeneutic perspective can reveal their inescapably moral nature and that the contexts of practices can be interpreted as moral ecologies (Brinkmann, 2004; Hatab, 2000; Stigliano, 1989, 1990; Taylor, 1989; Yanchar, 2011, 2015, 2016; Yanchar & Faulconer, 2011; Yanchar, Spackman, & Faulconer, 2013; Yanchar & Slife, 2017). In order to provide background for the hermeneutic, moral realist methodology that was used in the study, this chapter will clarify the hermeneutic approach to the study of practices and explore the implications of viewing classrooms as moral ecologies and learning as a moral becoming. This chapter will also seek to lay the groundwork for the research methodology by clarifying the research implications that Yanchar and Slife (2017) have suggested emerge from the moral realist inquiry framework.

The Hermeneutics of Practice

Hermeneutic theorizing, according to Bruns (1992), follows from Martin Heidegger's idea that "understanding is not an activity of consciousness but a condition of belonging to a world" (p. 2). Yanchar and Slife (2017, p. 4) explained:

> Rather than presupposing a closed, mechanical universe in which phenomena are taken to be the necessary consequence of natural laws and cultural history, theorizing of this sort treats the lived world of meaningful human activity and possibility as ontologically primary.

Heidegger's ontology moved theorizing about human activity away from the detached Cartesian model of scientific objectivity toward a focus on being immersed in a world where we are "shaped by everyday concerns, practical involvements . . . inherited customs and traditions,

social relations and language uses" (Hatab, 2000, p. 11). Exploring human action from this perspective, therefore, is not a search for objectively specified generalizations that demonstrate initial states and outcomes; it suggests the exploration of situated, fully embodied integration in a lived world of practical significance.

Heidegger's concept of "belonging to the world" implies that individual activities are not complete in themselves and should be viewed as an integral part of everyday practices (Westerman, 2006). Practice in this sense is, as Guignon (1983) suggested,

> First and foremost a matter of hands-on engagement in practical activities within familiar worksites and equipment. . . . Prior to any being as a "self," and prior to any attempt to hook up mind and material world, we exist as the unified totality of meaningful involvement in a shared field of practical significance. (p. 103)

This position assumes that people are born into practical configurations and learn to participate in increasingly sophisticated ways in meaningful activities (Dreyfus, 1994; Yanchar et al., 2013). Thus, one encounters people and equipment as already meaningful within a context of action in the world. Such practical involvement entails the ability to use the language in this shared, familiar world, and as Bruns (1992) suggested, "taking as naturally intelligible (not needing explanation) the ways of acting, thinking, and feeling that are local and current" (p. 3).

In exploring human activity, Westerman (2006) asserted that "practical activity is bedrock" (p. 226), and inquiry into a shared space of practices should seek to create accounts that, though they might be incomplete, reveal important insights into configurations of human life (Guignon, 2002; Taylor, 2006; Yanchar, 2011; Yanchar & Slife, 2017). Such inquiry into practice needs to start from the ordinary, everyday meaning of human involvement in situated contexts (Yanchar & Slife, 2017).

Practice as a Moral Ecology

MacIntyre's (2007) definition of practice claimed that "goods" and standards of excellence are not only inextricably embedded in practices but also partially define the form of the activity (p. 187). As Brinkmann (2004) has posited, "We cannot describe the human world adequately without at the same time describing values, goods and reasons for action" (p. 57).

According to Taylor (1989), human moral perception emerges from frameworks or horizons that are oriented in moral space. Like having the ability to tell up from down, or right from left, these horizons constitute the space from which we see the world and are defined by what we identify as good or valuable or what we think we ought to do or what we should oppose. As Taylor suggested, "To know who I am is a species of knowing where I stand . . . doing without frameworks is utterly impossible for us" (p. 27).

Taylor (1989) further discriminated between strong and weak evaluations. We make strong qualitative evaluations because we are oriented by "what is good or bad, what is worth doing and what not, what has meaning and importance" (p. 28). Weak evaluations are more short-term evaluations made not on the basis of what is of intrinsic worth but of what choices might be convenient in the moment or of choices between competing desires. One might decide not to eat even though she might be hungry, for example, because she is calculating how she can both eat and swim (Taylor, 1985).

Yanchar and Slife (2017) have argued that these moral values, which can be seen as moral reference points, are inescapable indicators of how one ought to practice, what is worthwhile, and what should matter. These reference points and the "goods" that they lead toward, while often implicit, are not subjective constructions, ones that exist only in the mind, nor are they merely social. Rather, from a hermeneutical perspective, according to Yanchar and

Slife (2017), “moral goods and reference points exist in the world as real (though contextual) parts of practices (Brinkmann, 2004; Hatab, 2000; Stigliano, 1990; Taylor, 1989),” and “because of their reality, they endow practices with a moral thrust of real consequence” (p. 150).

Brinkmann (2004) asserted that the moral nature of practice can be understood as a moral ecology, made up of a “web of moral understandings and commitments” (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985), which provide practitioners with “moral reasons” for action. The metaphor of ecology calls up a powerful image of practice in its picture of the biological world with the overlapping and intersecting lives of inhabitants as they go about cohabiting a shared space in the world, where their own pursuits both give and take from each other and from the environment that sustains them. The view of a moral ecology as a complex web of intersecting moral understandings and choices provides a unique and potentially insightful framework for exploring the nature of classroom activity and can provide a rich understanding of how students in classrooms are learning as they interact in the web of moral choices that open before them.

Researchers assuming a moral space of practice, according to Yanchar and Slife (2017), need to formulate questions from a moral realist perspective, which allows researchers “to see moral reference points as giving shape and purpose to practices, and thus to see the practical and the moral as fundamentally inseparable” (p. 157). Such moral realism allows researchers to explore the moral space of practice and take into account the many-tiered, complex, and potentially conflicting layers within practitioners themselves, between practitioners, and between practitioners and their larger communities. Accordingly, bringing complexities and perplexities to the foreground makes visible the often unstated and tacit web of moral reference points and offers an opportunity to explore the “goods” and reference points associated with the problem

(Yanchar & Slife, 2017). Thus, exploring the accidents, turns, mistakes, problems, and unintended consequences of experience not only provides opportunities for insight into learning but also creates important threads for research into the moral space of practice. Bringing these threads together is a critical task of interpretive research as researchers work at describing and understanding what Brinkmann (2004) called moral topography—a view of how the organization of values and goods are embedded in social practices (p. 59).

Participational Agency

Involvement in the moral world of practice emerges from the understanding of human agency as a "meaningful engagement in the world" (Yanchar et al., 2013, p. 218). This understanding, which Yanchar (2011) called "participational agency," is not founded on an appeal to "the workings of an isolated, subjective mind" or "rational powers working on an objective world" (p. 283). It is best viewed as a contextually engaged phenomenon, as Yanchar et al. (2013) asserted: "We wish to be clear . . . that the meaningfulness of this in-the-world existence is characterized principally and most fundamentally by participation that matters or makes a difference in one's everyday life" (p. 218).

This meaningfulness involves both "a vague *existential concern*" about the general concerns with questions of living and dying—how one lives life—and a more "dispositional action," characterized by a more "purposive, situation-specific form of involvement" (Yanchar et al., 2013, p. 218). Yanchar and Faulconer (2011) explained that dispositional action encompasses the value-laden, purpose-filled ways in which agents specifically engage in, value, and commit to certain activities and goals, and what they decide is worthy of their time and attention. This means "life and the myriad details of everyday living, matter . . . they make a difference to people" (p. 281).

Williams and Gantt (2002) define this concernful involvement as a moral participation:

> Any activity in which a person might engage, whether it be solitary reflection or public speaking, writing prose or poetry, apathetic indifference or selfless service, is a moral activity in that it fundamentally makes a meaningful difference in the lived experience of real human beings, the actor as well as others. (p. 11)

Human agency can thus be thought of as an "ethical dwelling" (Hatab, 2000) in value-laden practices in a world in which moral goods and values are realized as part of the milieu in which agents participate (Yanchar & Slife, 2017).

Learning as a Moral Becoming

In applying assumptions of participational agency and moral realism to theorizing about learning as a moral ecology, Yanchar (2016) emphasized that (a) learning is a kind of embodied familiarization, a practical in-the-world involvement, (b) learning as embodied familiarization occurs in a moral ecology of practice, and (c) learning is a kind of identity formulation and moral becoming which derives from pressing forward into possibility and position taking. This identity formulation is, in fact, what learning is, as beings saturated in an historical context and situated in a cultural setting press forward into increasingly effective engagement in meaningful cultural practices.

Learning as embodied familiarization. Embodied familiarization refers to the capacity of an agent to become increasingly familiar with and capable of performing meaningful activities such as problem-solving, relationship building, use of equipment, and other capacities for meaningful living (Yanchar et al., 2013). Learning as an act of embodied familiarization is a shift from relatively uninformed or unskilled engagement toward increasingly smooth, capable, often self-aware action (Yanchar et al., 2013, p. 219). Lave and Wenger (1991) have described situated

learners as moving from the periphery of practice to a central position as they become embedded in the goals and culture of a practice. A hermeneutic approach to learning in practice overlaps in many ways with this situated learning approach; they both emphasize relational and cultural ways that learners go about their involvement in communities of practice (Yanchar, 2016). Thus, both hermeneutic and situated learning approaches focus on how learners negotiate the complexities of practices in order to participate more effectively, and both focus on the identity of learners as they progress in terms of their cultural involvement. Yanchar et al. (2013) reiterated, "In this sense, we conceive of learning as meaningful engagement that involves a change in embodied familiarity" (p. 219).

Learning in a moral space of practice. Although the situated engagement of Lave and Wenger (1991) shared a concern for embodied familiarization, the moral realist approach (Yanchar, 2016) focuses more on moral ontology as "a form of participation in which one presses forward into possibilities that inhere within the moral spaces of practices" (p. 25). Such participation is an extension of learner agency as learners meaningfully engage in new ways in a situated setting. Yanchar (2016) suggested that the moral and practical aspects of learning are overlapping, "perhaps identical" concerns and that seeing how the moral and practical merge creates a richer platform for investigation:

> Moral-practical considerations . . . pertain to how newcomers and old timers alike endeavor to achieve standards of practice taken to be cultural goods within that community, if only implicitly. . . . Newcomers are gradually coming to take stands on those practices or the cultural goods inherent within them and will do so in their own ways as they project and press forward into cultural possibilities. (p. 509)

Thus familiarization is a deep part of the learning process and deeply morally embued.

Learning as a temporally embedded identity formation—a moral becoming. An important aspect of learning as a practical, moral engagement is the Heideggerian concept of temporality. Heidegger (1962) viewed inherited customs and traditions and language uses as situated historically. From our past we are imbued and saturated with meanings, even before we are aware of them. Thus, our interpretation of the world takes place from the standpoint of past experience from which prereflective understanding emerges (Linge, 1976). Guignon (2002) has characterized this historicity as a happening or "event" that occurs between birth and death that takes on the form of a life story (p. 329).

To suggest that the past is a meaningful context for the present is not to say that the present is determined by or follows predictably from past events (Faulconer & Williams, 1985; Slife, 1993; Slife & Fisher, 2000; Yanchar, 2011). To see human experience as narratively oriented includes not only the meanings of the past and present but also possibilities in the future (Hatab, 2000; Yanchar, 2011). Heidegger (1962) argued that we exist temporally and that we project our future being from a range of present possibilities. According to Taylor (1989), "This is the structure of any situated action. . . . I project the direction of my life in relation to it" (p. 47). Narrative understanding, then, emerges from a reflection of past and future situated in the present, or as Heidegger (1962) worded it, "The unity of time's three dimensions consists in the interplay of each toward each" (p. 15). According to MacIntyre (2007), without such historical understanding, changes through time would be unintelligible. Taylor (1989) added, "In order to have a sense of who we are, we have to have a notion of how we have become, and of where we are going" (p. 47).

Yanchar (2016) suggested that the temporal and moral nature of being-in-the-world is intertwined with the process of disclosure and identity formulation at the heart of learning. Involvement in practice, as Yanchar and Slife (2017) have argued, can be thought of as a "moral becoming," a "moral trajectory toward or away from moral goods and reference points (Brinkmann 2012)" (p. 162). That happens as the meaningfulness of the past is disrupted through various forms of "breakdown" in the form of equipment failure or unmet expectations (Heidegger, 1962). Such disruptions promote understanding, as one's capacity and familiarity are disrupted and regained, as Yanchar (2015) described, "in a progressively familiar and refined way of being involved with some aspect of the world (Dreyfus, 1994; Yanchar et al., 2013)" (p. 111). Thus understanding proceeds as a temporally based activity of disclosure as meaning evolves into a new sense of significance (Yanchar et al., 2013).

Applied to learning, this suggests that learning itself is "fundamentally a kind of moral action" (Yanchar, 2016, p. 498)—a practice of moral becoming in a trajectory of moral self-interpretation. Yanchar (2016) explained:

> Learning, then, is the becoming of one's moral self-interpretation in this hermeneutic sense and entails how one is increasingly able to fit comfortably and effectively into practices that entail standards of conduct and excellence, that is, moral ecologies. . . Moreover, motivation to learn is a matter of the extent to which one implicitly or explicitly cares about becoming a certain kind of person, involved in certain kinds of practices . . . and making certain kinds of contributions. What one is willing, or desires, to become—that is, the practices with which one may become at-home—are thus part of one's moral orientation toward cultural goods and situationally present possibilities. (p. 508)

Implications for research into a moral ecology of learning should take into account the moral nature of practitioners' temporal involvement in the world. Thus, this research agrees with MacIntyre's (2007) claim that "narrative history of a certain kind turns out to be the basic and essential genre for the characterization of human actions" (p. 208). Yanchar (2016) added that research into a moral ecology of learning can include ethnographic and hermeneutic methods that disclose the tacit and dispositional nature of the phenomenon—how facets of practice matter to participants, how practitioners relate to each other, how they frame their moral decisions and actions, what stand they take in relationship to the practice, and how their perspectives change over time (p. 512). This inquiry should include an expression of moral goods and reference points that point to other related and overlapping moral ecologies that practitioners bring to practice.

A Hermeneutic Moral Realist Interpretive Frame

Yanchar and Slife (2017) suggested that research into moral ecologies of learning should provide fresh perspectives on how participation shows up in practice, how practitioners act on configurations of the specific practice, and how new understandings are disclosed in practice. Such research would reveal the configurations of participation, including the values, both explicit and implicit, about what constitutes excellence and merit in everyday activities.

Yanchar and Slife (2017) indicated four key concepts that orient research to the moral dynamics of ordinary life: (a) moral significance; (b) distinctions of worth, evaluations, and moral reference points; (c) moral becoming; and (d) moral complexities (p. 159). Yanchar (2017) concluded, "Such inquiry would provide a conceptual structure for interpreting the values, assumptions, tensions, ironies, dilemmas, and whatever else may be encountered when participation is studied in this moral realist light" (p. 1).

In summary, qualitative research into the moral space of learning practice would rely on a number of assumptions about methodology:

1. Methods are needed that are adapted to the nature of the study rather than a preset adoption of rigid methods that might blind the researcher to critical moral phenomenon.
2. Methods should focus on the ordinary rather than the extraordinary phenomenon of practical involvement in order to explore what matters to practitioners in everyday practice as well as their meaningful sense of the goods that their choices might lead toward.
3. The research approach should be designed to reflect moral realist phenomena, including goods, reference points, perplexities, and disruptions, as well as the agentive stance of the participants in relation to their moral horizons, goods, and reference points.
4. Methods need to be employed to bring to the fore the perplexities and conflicts which provide a window into the moral horizons and goods of the practice and the tacit set of assumptions and goods that are embedded into the lives of the participants.
5. Narrative accounts should reflect the meaningful development of choices in light of goods and moral horizons in the past, present, and future.
6. The hermeneutic process of analysis needs to include a circling back and forth between general and specific. Such back-and-forth iterations also need to be applied between research and analysis; between past, present, and future perspectives; and between individuals and the developing character of the group ecology.

Conclusion

This moral realist interpretive frame has provided a rich lens for exploring question-asking practices. The research questions it addressed can be stated as follows: How does the practice of question-asking fit into the moral ecology of a graduate classroom? And what is revealed about the moral goods and reference points of learning and the process of becoming when learners and what they learn are disclosed from this moral realist perspective?

This study explored the first question about the moral nature of the graduate or upper-division ecology from the perspective of the questions that arose in and out of class within and among the students. Thus, it asked, in what ways does question-asking facilitate or hinder excellence in the practice of being a graduate student? And what complexities are revealed in a study of these phenomena? The study also explored the second question about the moral goods, reference points, and contextual complexities in relation to the problems and processes of learning. It asked, what do these phenomena suggest about question-asking in these learning contexts? Thus, this study focused on the moral realism expressed in student question-asking practices in a graduate classroom ecology. It explored how the reference points and goods of practice show up in student questioning activities and how they contribute to the moral realist picture of classroom practice. A study of this type provides insight into the moral nature of learning, the student experience of moral becoming, and the promises and problems of how moral ecology functions in a graduate classroom.

CHAPTER 4

Method

In light of the methodological framework outlined above, question-asking practiced in a classroom can be thought of as "a moral phenomenon configured within [a] moral space" (Yanchar & Slife, 2017, p. 158). In order to create a hermeneutic analysis of question-asking practices within the moral configuration of a classroom ecology, I employed a case study approach as articulated by Stake (1995) to produce a single case of a graduate seminar. As I describe below, this case was developed in the vein of moral realist inquiry (Yanchar & Slife, 2017), which included an ethnographically oriented (Mills & Morton, 2013) approach to developing a rich description of the classroom context—a case description and accompanying thematic structure. Interview techniques emphasized the meaning of everyday question-asking practices (Kvale & Brinkmann, 2009; Murray, 2008) and the stances that students took as a part of their unfolding moral participation and becoming in the classroom (Yanchar & Slife, 2017). Institutional review board (IRB) approval was obtained before any data were collected.

Case Selection

The case selected for this study was a graduate seminar in design theory in a department with a graduate program on the campus of a large, private university. As Stake (1995) mentioned, case selection is an important issue for qualitative research. A case is a "specific, complex, functioning thing" (p. 2). It needs to be an integrated system, it needs clear boundaries, and it needs to be chosen with an eye to "maximize what we can learn" (Stake, p. 4). A class makes an ideal case with a clear set of parameters: it has a specific location, it has a clear set of members, it is defined institutionally, and the members are engaged for the time in shared learning experiences.

I chose this particular class for several reasons. The seminar approach provided an opportunity for students to ask questions as a part of their participation and engagement; thus it provided a rich opportunity for exploration of those questions. In addition, a class in instructional design has overlapping concerns with learning theory, and students in the class were given the opportunity to think about question-asking as a part of classroom learning. Another feature of this classroom is that the members had diverse backgrounds. Some were nontraditional students who had been engaged in the workplace before entering the graduate program. Some of the participants were graduates of this program sitting in on the class while employed in instructional design, some were students from other programs on campus, and some audited the class, thus providing a different rationale for participating in the seminar. The varied backgrounds of the students, as well as the commitment of the professor to provide disruptive challenges to student positions, created a setting in which perplexities were likely to occur and student questions were likely to play a key role.

Participants

Since the class size was relatively small (eight in total including the instructor), no selection criteria for individual participants were required and all members were invited to participate after two days of classroom observation were completed. All agreed to participate.

Below is a description of each participant, identified by a pseudonym to protect privacy:

- Harry was a postdoctoral student who had already graduated from the department and was taking this class as professional enrichment, sponsored by his work supervisors. He would have audited the class, but as a university employee, he was required to register for credit in classes funded by the institution. Harry commented that his position freed him from writing and participating with an eye to getting a good grade.

- Jacky was a doctoral student in the department with a background in curriculum design who concurrently worked part-time at the university as a curriculum design team leader. She took the course out of personal interest in and curiosity about design theory.
- Charles was a master's student, coming into the graduate program after years as a public school teacher and online course designer. He was concurrently an employee of the university's independent study program. He took the design theory course to fulfill part of his master's course requirements at the recommendation of his academic advisor.
- David was also a nontraditional master's degree candidate, with an extensive background in graphic design. He was also working part-time as a designer for online classes. He entered the classroom with a question about how his background in graphic design could be integrated and expanded by learning about design theory.
- Peter, who was a graduate of the graduate program, sat in on the class electronically. He worked as a professional course designer at another institution. Because he was not taking the class for credit, he did not participate in any of the writing assignments but was always more than well-prepared with the reading assignments. His purpose for taking the course was to fill in his gaps in design theory and explore the question of whether there was a professionally viable path forward in the curriculum design field based on his interests in agency and experiential learning.
- Jim was a doctoral candidate with a background focus on language acquisition and extensive teaching experience in foreign languages. His hope was to teach foreign languages at the university level.

- Anne had just received her undergraduate degree the spring before this class started. She entered the master's program in the fall semester previous to her participation in this design theory course. Anne's long-range goals included teaching supply chain management at a university business school. She entered the course with the goal of learning how to become a better teacher.
- Professor Smith was a fairly new faculty member in the department, with substantial professional experience in design outside of the university setting.

Data Collection

I collected multiple forms of data for the study. Course materials were collected and classroom observations were completed before interviews took place in order to minimize the impact of the study on the classroom context.

Course materials. Materials I collected included the syllabus and assignments, online interactions, and other materials, including written and oral responses to assignments, personal writing, class notes, as well as (from one student) a reflective matrix of personal questions compared to classroom questions. These artifacts helped frame classroom context, goals, and standards as well as student responses to assignments and personal interpretations of question-asking experiences.

Classroom observations. I documented eight class sessions (spanning four weeks) with personal observations, enriched by field notes based on my research into the assigned readings.

Recordings of class sessions. I made audio and video recordings of the eight sessions that I attended and used the transcriptions of those sessions to guide interviews. At first, audio recordings were used for transcriptions with video recordings used as aids to help clarify questions about individual participation. However, as video transcription technology became

available, the transcriber shifted to use of video recordings as the primary source for the transcriptions.

Extracted documents. Based on the classroom transcripts, I created a list of each student's questions over the one-month classroom observation period. However, my intention was not to provide a taxonomy of question types or catalog and analyze the details of certain kinds of questions. The purpose of creating these lists was to help me prepare for the interviews in which the students and I discussed those questions. Given my intention to ground the data in actual practice as much as possible, it was important to base interviews on what participants actually said and did in context. Thus, these lists of student questions provided a vehicle for discussing the lived realities of question-asking amid the goods and reference points of classroom practice.

Interviews. I conducted three semistructured interviews per student participant and two interviews with the instructor. In line with the hermeneutic interpretative frame underlying this research, each interview was conducted as a reflective experience (Mills & Morton, 2013; Fleming, Gaidys, & Robb, 2003) in which interviewer and interviewee engaged in conversations that produced shared interpretations of events (Kvale & Brinkmann, 2009). Interview questions were developed for each interview as the study progressed. Thus, a protocol developed for Interview 1 was largely the same for each participant. Based on the results of Interview 1 and some preliminary coding of transcripts, I created individual protocols for Interview 2 for each participant. After I analyzed Interview 2, I tailored individual protocols for Interview 3 based on prior interviews, the results of the coding of all the documents, and some preliminary thematic analysis.

Interview 1. I used a general interviewing template developed by my co-investigator and dissertation advisor as a protocol for Interview 1 (see Appendix A). Interview 1 was treated as a grand tour, including questions that focused on how students generally engaged in classroom learning, their academic and professional backgrounds, their reasons for taking the class, and their question-asking experiences in past as well as current classes. I also asked questions about participant views of other students' questions and interactions in the classroom.

Interview 2. In preparation for Interview 2, I used a generic coding scheme (see below) to pinpoint specific places in the transcripts and Interview 1 that, along with other data sources, would ground an ongoing discussion of student questioning experience. Using the general interviewing template (Appendix A), I created specific, individual questions for each participant tied to specific excerpts from the transcripts to create an individual interview protocol for each participant. Thus, Interview 2 focused on specific comments, questions, and interactions from the classroom experience, reflections on Interview 1, and also a response to some comments made by other participants and the instructor in their first interviews (see Appendix B for an example protocol for Interview 2).

Interview 3. Individual protocols for Interview 3 were created after I analyzed and identified preliminary themes based on the completed codes from all the documents (see Appendix B for a sample protocol for Interview 3). The purpose of this interview was to further explore the participants' activities and experiences in the class, follow up on their second interview, and see how they would react to the initial themes that were emerging at this point. It provided an opportunity for participants to share anything important that had not yet been discussed and to provide response and feedback about these proposed themes. My co-investigator participated in this final interview.

Data analysis. I carried out data analysis from the beginning of the study in a hermeneutic cycle of reiterative movement between the general and specific, emphasizing a hermeneutic moral realist interpretation of question-asking in this class setting (for more on this aspect of hermeneutic inquiry, see Addison, 1992; Fleming, Gaidys, & Robb, 2003). These reiterative analytical cycles included movement among all data types and the moral realist concepts underpinning this study. This process brought together various strands of data, which I used to produce the study's findings: a case description and an accompanying thematic structure.

The interpretive frame and specific procedures for data analysis were as follows:

- Generally speaking, throughout the data analysis, I explored the data for insights pertaining to (a) moral significance of phenomena, that is, how question-asking mattered and how it was facilitated and hindered; (b) appearances of moral realist phenomena in classroom interactions (moral reference points, distinctions of worth, evaluations, moral stances, moral sources, moral goods, moral becoming, and so forth); and (c) complexities that appeared in the classroom (dilemmas, tensions, binds, ironies, and so forth).
- My analysis emphasized part-whole interrelations among phenomena, with question-asking as the focal point. This part-whole analysis included identification and analysis of the part-part connections among specific events, experiences, documents, practices, reference points, and complexities, as well as part-whole connections between these aspects of the class context and the overall themes that I was developing.
- I explored temporal aspects of student questions. More specifically, I found that inclusion of the students' past experiences of question-asking as well as questions that

emerged from their projections of the future helped me to identify changes of perspective, student evaluation of their experience, and issues of concern in relation to classroom questions.

- Exploration of relevant phenomenon was taken in several steps:
  1. Initial coding: In order to familiarize myself with classroom transcripts, observations, artifacts, and Interview 1, I used a general coding scheme (also developed in conjunction with my co-investigator and advisor) for moral realist analysis that included:
     - P: Practical involvement of question-asking that implies the reference points of question-asking within the graduate classroom.
     - S: Strivings and self-evaluation—what participants strive for and how they assess their own performance in question-asking in the classroom.
     - V: Value judgments—statements of ought, good and bad, better or worse, or right or wrong regarding question-asking.
     - E: Enablement—what question-asking enables in the classroom and how.
     - H: Hindrance—what question-asking hinders and how it does so.
     - F: Facilitation—what facilitates question-asking.
     - I: Impediments—what impedes or obstructs question-asking.
     - T: Tensions and balances or other complexities, binds, ambiguities, ironies, paradoxes, etc.
  2. Expanded coding: After reviewing Interview 1, observations, and artifacts, I reread classroom transcripts and added several codes, including the following:
     - PF: Past and future phenomena that help interpret classroom questions

- OP: Other practices of participants that might explain classroom questions.

3. Initial thematizing: I began to formulate proto-themes that would help organize the many relevant student insights and statements that emerged from the coding.
4. Initial inferring: I began to make some inferences about moral reference points and possible tensions emerging from question-asking interactions in the classroom.
5. Data analysis in preparation for Interview 2: I prepared for Interview 2 by excerpting relevant sections from the classroom transcripts and Interview 1, creating questions for a collaborative conversation that would allow participants to elaborate and interpret the meaning of these interactions and comments.
6. Data analysis in preparation for Interview 3: In preparation for Interview 3, I finalized the coding of the class transcripts and Interview 2 transcripts and developed several small matrices to see which themes emerging from initial analysis would lead to fruitful collaborative discussions in the last interview. In addition, Dr. Yanchar and I created a master template of relevant interview questions, which I adapted for individual interviews.
7. Refined thematizing: Working with a final macro-analysis template that brought together the codes, themes, and specific quotations by the students as well as their specific location in the documents, I began to merge these themes into more generalized categories, split those that might fall into separate categories, and add relevant quotations from the original documents that would clarify or amplify these themes and lead to potential metathemes. In addition, I followed up on interactions that might provide insight for negative case analysis. Such thematizing included the exploration of part-whole and part-part analysis.

8. Structuring (and restructuring): The circular process of structuring and restructuring the overall results led to a more refined organization, which I continued to refine during several stages of analysis:
    - I narrowed themes into a manageable and illuminating set of findings that identified goods, reference points, tensions, and negative cases, organized by metathemes.
    - I selected examples and quotes from the body of artifacts and observations that best illustrate these themes, metathemes, and negative cases.
    - I defined the organizational structure of the findings.
    - I refined the overall set of findings to examine the internal unity of the parts and the clarity of the whole.

Trustworthiness

I attempted to follow the standards of trustworthiness from the beginning stages onward. Even before the development of the methodology, my efforts to establish trustworthiness began with the stance that Denzin and Lincoln (2002) have articulated: "The researcher is not an objective neutral observer. We know that this individual is always historically situated, never able to give more than a partial rendering of any situation" (p. xi).

Thus, the rigor and accountability of the methodology grew out of my recognition that the research would be informed by my own theoretical stance as well as my own personal limitations. The methodological framework in Chapter 3 addressed the need for transparency about the philosophical position behind the research. In addition, relationships with participants were set up and conducted as Denzin and Lincoln (2002) have suggested, as a "civic, participatory, collaborative project, a project that joins the researcher with the researched in an

on-going moral dialogue" (p. ix). I employed traditional activities associated with qualitative trustworthiness to provide rigorous practices for achieving meaningful findings. These standards, drawn from Lincoln and Guba (1985) and Denzin and Lincoln (2012), included the following:

- Member checking occurred as I used transcriptions of class proceedings as written artifacts in interviews and showed them to participants. Some aspects of analysis from earlier interviews were shared with participants as part of the discussion in subsequent interviews; that is, some of the results of the analysis of previous sessions were part of ensuing interviews so that participants could correct and clarify previous responses and contribute their insights to the ongoing analysis. The overall findings were shared with participants to check for any misuse of quotes or misconstrual of experiences.
- I triangulated data as I collected and analyzed multiple sources of data in relationship to each other. I compared my observations, class artifacts, video and audio recordings, and interviews to search for potential discrepancies, perplexities, and conflicts in the data. For example, I analyzed my personal observations using the transcripts to challenge the accuracy of my own comments and questions. On the other hand, I used my personal observations to augment and annotate the transcripts—a step that helped me find and focus on interactions of interest in the ongoing development of the codes.
- I kept an audit trail as part of the research process. This audit trail was composed of classroom observation notes, field notes, and a personal reflective journal. My field notes, observations, and reflective journal included thick descriptive details as well

as an account of the impressions I formed during the research process, my evolving sense of the direction of the project, and the decisions I made at strategic junctures.

- Negative case analysis was also part of the ongoing process of research. During this process, I searched for and took seriously the perspectives, insights, and observations that arose in participant encounters and in the literature that challenged the evolving themes and conclusions of the study. Negative case analysis was also part of the process of research as three important challenges to the presumptions of the study that were taken into account. First, there were challenges to the presumption that question-asking was going to be an inescapable part of the classroom experience: some students didn't ask questions in class, and some students said they weren't asking questions although others in the class thought they were. These perceptions and experiences were addressed in the interviews and the analysis. Second, the presumptions of the theoretical framework included a critique of cognitivist approaches to questions; however, several of the students talked about questions in a way that presumed that cognitive reality. Dealing with these presumptions was part of the collaborative dialogue with these students. Third, as themes began to emerge, it became clear that students and faculty took very different positions toward those themes, and these opposing judgments had to be represented in the findings. Beyond these three challenges, I generally remained open to instances in the data that did not fit patterns I was beginning to see, and I refined my eventual themes to accommodate those instances.

CHAPTER 5

Findings

The moral realist methodology and analysis used in this study sheds light on the moral nature of the question-asking in a graduate seminar setting. This chapter will first describe the classroom context and then provide a number of observations and insights about question-asking in this context, including seven themes organized according to three metathemes. The three metathemes involve the complexity, the sociality, and the temporality of classroom questions. themes that amplify Metatheme 1—"the complexities and virtues of classroom questions"—concern issues of theory and practice in classroom questions and the virtues of question-asking.

Metatheme 2—"the sociality of question-asking"—includes the themes of the questions of participation, convergent and divergent questions, and questions as challenges. Metatheme 3—"the temporality of questions in practice"—includes the themes of the temporality of questions that matter and the temporality of questions in hiddenness and disclosure. These themes are outlined in Table 1 below.

Table 1

Summary of Metathemes and Themes of Question-Asking in the Classroom

Metatheme 1: The complexities and virtues of classroom questions
Theme 1: Theory and practice in classroom questions
Theme 2: The virtues of question-asking
Metatheme 2: The sociality of question-asking
Theme 3: The questions of participation
Theme 4: Convergent and divergent questions
Theme 5: Questions as challenges
Metatheme 3: The temporality of questions in practice
Theme 6: The temporality of questions that matter
Theme 7: The temporality of questions in hiddenness and disclosure

The Classroom Context

The class under study was a graduate course in design theory in a department with a graduate program at a large, private university. The goals of the course were heavily focused on theory. Students were assigned to read the work of major theorists in the field of design, write weekly reflection papers, participate in classroom discussions, and create a personal design theory as a final project. The reading was challenging both in the amount assigned and the content, which ranged from Herbert Simon (1969), an early thinker in the field of systems design, to more recent thinkers like Nelson and Stolterman (2012) on design thinking, Dunne (1993) on the Aristotelian concepts of *phronesis* and *techne* in designing, and Krippendorff (2006) on the trajectory of artificiality in design products. The course was centered in classroom discussion. The professor expressed his preference for deep reading rather than superficial reading if students had to choose between the two.

Classes were held in the department conference room at a long conference table designed with a cutout running down the center for electrical outlets. The table was surrounded by large, comfortable, leather swivel chairs. At one end of the room, a large screen displayed the two participants sitting in on the course electronically from off campus. Occasionally, one class member or another would also participate from an off-campus site, and in one instance most of the members met electronically. At the other end of the room was a white board with remnants of student and faculty discussions from other classes or meetings. One day, for example, the whiteboard had a matrix labeled “Probability sampling procedures. B1, B2, X2, B3, X3; simple random sample; systematics sample; stratified sample.” It was an ironic contrast to the conversation that day in which students were referring to influential faculty members whose critique of traditional quantitative approaches to the study of human interactions had made

important impacts on them. The overlaying of the visual discussion on the white board and the referenced discussion about faculty members showed the kind of theoretical approaches the students were exposed to in their program.

Ongoing participants in the class included six registered class members and one nonregistered class member who attended from a distance electronically. Other attendees included one person who had registered for the class but dropped out after one session, one auditing the class who dropped out midterm to work on a dissertation, and another who attended electronically and intermittently. Most of the participants were mature students, two who had already finished their PhD work and were employed full-time. Other students were involved at some level in curriculum design work, and two were full-time students in the program. On any given day the orientation of these students was evident in their dress. Most of the students working in administrative and design jobs at the university wore professional attire. Those teaching or just acting in their student role wore t-shirts, sweaters, or pullovers. Dr. Smith himself dressed as casually as these students.

Dr. Smith would usually start class by asking if students had questions regarding the readings. Practical questions usually came first, such as, “How do the print version pages line up with the online version?” Other questions and comments about the authors, about the larger context of the reading, or about concepts expressed in the readings would generally follow. Such questions would include requests for more information about the background of the theorists, questions about the meaning of a specific statement or example from a specific page in the text, questions about how a specific comment related to another comment in the text, or questions about how these ideas could play out in the practice of design. Student questions also included personal responses to the text or queries about how concepts being discussed might be related to

instructional design. Students often asked about how design issues would relate to religious or non-design historical developments or worldviews. Some questions were about how practical experience related to the theoretical propositions in the reading.

Dr. Smith would be actively engaged in generating discussions, responding, listening, and interjecting guiding questions and comments. Dialogues were vibrant and participatory, with comments bouncing back and forth between teacher and students, between the students themselves, and from students back to the teacher. Comments and questions were wide-ranging and sometimes far afield as students struggled to make connections between the theorists they were studying and their own experiences, values, and reading. During discussions, students generally had the text and their notes from the assigned readings in front of them or on their computer. They referenced specific pages, quotes, and diagrams, and Dr. Smith would often circle back to the texts if discussions moved too far off topic.

Student reflection papers were turned in electronically to Dr. Smith on a weekly basis, and he would respond individually. When he found a common problem with papers, he would bring it up in class. He wanted reflection papers to be more than a simple summary of the readings. He wanted students to be processing their questions, responses, and thinking in preparation for the final project of having each student create their own design theory at the end of the course.

The last day of class was set aside for student presentations of final design projects, which varied widely in form and focus. David presented a sophisticated graphic design that outlined his synthesis of design theory ideas, presented as questions, which would act as a guide to future design practice. Charles presented a history of the university independent study program and the potential for use of design principles in its development. Harry presented an

interactive PowerPoint detailing the new developments in his learning model that came as a result of design theory concepts. Anne presented a design of classroom teaching based on ideas she had gleaned from design theory. Jim presented a matrix of the design thinkers the class had studied, showing their major contributions and their progress through time. Jacky did not make a final presentation because she had a reduced enrollment arrangement for the class, and Peter did not make a final presentation because he was auditing the class.

Metatheme 1: The Complexities and Virtues of Classroom Questions

This study focused on what Taylor (1989) defined as an "orientation to the good" (p. 37) and how an orientation to the good played a role in the everyday questions of students in classroom practice. Interview discussions about what makes good questions or how questions might lead to learning showed how complex these issues were for students. As they encountered the challenge of the classroom purposes and goals, students brought from their past experience and their professional design background presumptions about graduate study that they used to interpret classroom challenges as they pressed forward into the classroom goods. Looking at how students pressed forward toward these goods through the questions they asked revealed at least some of the moral reference points, in this context, that the students used to orient themselves toward those goods. These reference points might be seen as contextual signs or expectations that show what might be considered bad—as leading away from the goods of learning—or good—what might lead toward the goods of learning as a class. How students positioned themselves—how they took stances—in relation to these reference points and goods reveals the moral nature of their participation in this classroom ecology with its confluences of practices.

Theme 1: Theory and practice in classroom questions. Inquiry into student questions in the moral reality of this complex ecology of practice revealed the important and sometimes

surprising ways that students acted in relation to the tensions they faced. One of the important dynamics that made a difference in the questions that were or were not asked in this classroom grew out of the theoretical focus of the class. The subject matter of the class was design theory. The reading assignments were challenging to the students because of the deeply theoretical and abstract focus on the technical aspects of design, competing design models, and the philosophical underpinnings of design. The reflection assignments and classroom conversations were designed to help students understand these theoretical approaches with the end goal of creating a personal design theory for the final paper and presentation. Students brought to this challenge their understanding from past experiences and the concurrent professional and personal practices they were engaged in. Each of these practices entailed their own unique goods and meanings that made a difference to students as they negotiated the demands of this graduate classroom setting. Tracking how students responded to the challenge of theorizing showed what presumptions emerged as they balanced and negotiated the complex demands of working toward the goods of the classroom while being simultaneous participants in other practices.

One of the students found the theoretical goals of the class particularly daunting. As a new student in the program, Anne found the readings (with their theoretical emphasis) hard to decode and the classroom conversations hard to follow. During the interviews, Anne confessed that the class was over her head. She might have needed a basic tutoring in instructional design and in theory. Because of that, she was unwilling to ask her basic questions in class. She felt that it was a matter of context, saying, “Informational questions [that] might be good in undergraduate classes” were bad in graduate classes because “in graduate school you are expected to already have content knowledge and background.”

Other students had similar views. David, who had extensive background in graphic design but little familiarity with theory, also had a presumption about what might be appropriate for a graduate setting. He expressed his feeling that his basic questions like "What is a theory?" were too simple to ask. As he said, "I'm going to ask a really basic question here that's almost like, you know, how do you use a pencil?" Most of the participants generally agreed that questions contributed more to this graduate class if they helped "create discussions," "synthesize information," and, as some defined it, participate in "deeper" theoretical thinking that went beyond what might be seen in undergraduate settings. Similar to Anne, David's way of asking, or not asking, questions was informed by his understanding of what a good student would do in this situation—that is, by what implicit moral reference points seem to suggest about appropriate question-asking in a graduate class such as this.

Ironically, student presumptions about the need to emphasize "higher-level," rather than informational, questions were problematic in Professor Smith's view. It is true that he was interested in deeper theoretical questions and valued creative, evaluative, and synthesis-oriented discussions in class. At the beginning of the term, for instance, he told the students that if they had to choose between reading everything and reading some things more deeply, he wanted them to choose the deeper reading. However, he suggested that informational and basic questions were also a part of deeper reading and of graduate study. He grew frustrated when students rushed to evaluate design theories in the readings before asking basic questions. He thought that students were trying to make connections before making sure that they understood what the theorists were saying in the first place. He wanted them to ask, "What question were the writers trying to answer?" In his view, they needed to understand those questions to gain an adequate sense of the authors' positions before shifting to critical analysis. Dr. Smith's ideas of good classroom

questions and the students' ideas were not so different in outcome but in the reference points that led to those classroom goals, or goods; for Dr. Smith, understanding basic issues, and thus asking basic questions, seemed to be a reference point that would lead to productive graduate questions and theoretical discussions rather than away from them, as some of the students had presumed.

Another aspect of how theory posed a challenge to students was in a tension between classroom theory and what they experienced in their work environments. The relationship between the abstract and philosophically oriented work of theorists in the social sciences and the everyday work of practitioners in their related fields has given rise to an oft-noted theory-practice divide. In this class, this divide showed up as students, who worked full-time or part-time in a related curriculum design environment, experienced a practical counterpoint to the classroom emphasis on theory. Questions that emerged from the back-and-forth between theory and practice revealed how students positioned themselves in relationship to the theoretical. Sometimes the divide between theory and practice showed up as a synergy, sometimes as a frustration. Jim, for example, would sometimes "be more practical" as he used relevance to second-language acquisition as his reference point to guide him as he learned, and other times he would be "very theory focused," as he pursued the classroom good of "trying to figure out how these ideas work together."

Charles and Peter, who both worked in online course development, were caught between workplace emphases on the goods of efficiency and economy, on the one hand, and theoretical propositions about learner needs on the other. Peter, however, grounded himself in the theoretical stance of the classroom to critique his professional curriculum design environment. In this sense, the good of the class—learning design theory—at times seemed to supersede goods intrinsic to his work practice—the efficient and economical production of instruction. Thus, his orientation

based in the principal good of the class invited him to reconsider a conflicting principal good of his work. On the other hand, Charles was trying to find answers to very practical questions about "how . . . this [would] be useful at work." And indeed, he said that he would "take something useful back to work after almost every class." For him, the practicality of work was the primary good—the reference point that guided his view of what aspects of theory would be meaningful to his practice. Thus, his questions, and any good that answers might offer to him, were informed by a commitment to the good of his workplace activities.

For Jacky, the theoretical challenge of the classroom was a matter of generalization versus concrete experience. Grounding her stance in the goods of her own lived experience, she used her professional background as a reference point, what she called "the litmus test," to make judgments about classroom theories. She commented, "I tend to distrust generalizations that aren't grounded in concrete experience." Thus she generated challenges and questions for the classroom as she compared the generalizations in the readings to the goods that emerged from her own experience. For David, this conflict with the theoretical emerged as a problem of context. His long experience in graphic design taught him that design should always be situated and tailored to local needs and problems. Thus, his commitment to the primary good of taking particular contexts into account in the process of designing led to questions for him about how much theory could, or should, be applied in practice.

Overall, it became clear that participants' efforts to learn were informed by notions of the good from past experiences and other practices that either helped them or frustrated their efforts to define and access the goods of the classroom practice; the influence of those goods showed up in how they did or do not ask questions. In that process, they used reference points, the positions or actions that pointed them toward the goods of practice, to guide them in judging how

questions might lead them toward the goods of the classroom. As they did so, they took stances in relation to those reference points and goods while they navigated the classroom ecology. Stance-taking is an act of agency, but these complex responses to theory show that student agency is not experienced as a *free agency* that allows for unlimited choice but more as a *boundaried* or contextual agency. Learners in this class questioned and responded in ways that were situated—enhanced or limited—by their past and the knowledge and questions that mattered the most to them in light of the challenge of theory.

Theme 2: The virtues of question-asking. Inquiry into student question-asking showed that questions, for the students, were not just about getting academic information, basic or theoretical; they were about how people presented themselves and their ideas to each other to receive feedback. Questions were about openness to others' ideas and academic growth and development. Thus, the stances students took with respect to question-asking suggested the importance of virtues like openness, humility, honesty, and courage—virtues that showed up as important as students pursued the academic goods of the class. These virtues were the reference points that showed how students oriented themselves as they questioned and projected into the possibilities of learning in this graduate ecology.

Questioning as a matter of what students intended to do in the classroom took the form not only of how students positioned themselves to one another but also how they positioned themselves in relationship to what and how they learned. Jacky suggested that questions included presumptions of openness to others and to new ideas as she said, "If I'm not changed, if my eyes aren't opened to a different thought or different viewpoints, then I'm not sure how rich my learning is." For Harry, it meant looking at what he was trying to learn about: "What do you want to get out, what kind of answer are you looking for? And it's not saying you're defining the

answer you're looking for, but you're trying to say, what's the response that's going to drive me towards what we're doing."

Embedded in the sense of learner intention in questioning interchanges was the sense of how these intentions led toward or away from the goods of graduate student practice in this setting—that is, how they served as commentaries on moral reference points. Some intentions were considered negative. Jim suggested, for example, that "some questions are power plays." According to Jim, these power plays might be about some students positioning themselves in class as more important or intelligent than others; he concluded that such positioning would be wrong, lacking in virtue, in an academic sense. Harry made a similar point as he elaborated the nature of the "bad" question. For him, bad questions come out of bad intentions, "trying to get people to give you the answer you want them to give instead of the answer that they have to give," and good questions come out of a "willingness to be vulnerable" and to be challenged. Thus, the virtues of questioning interactions have to do with how learners see themselves in relationship to each other—not as superior to one another and not with the intent to use others or bend others' needs to their own purposes.

In this sense, questions were deeply connected with questions of character and of being a good question-asker as a student. For example, students concurred that humility was an inherent part of true questioning. As Anne said, "Humility is huge." Jacky and Dr. Smith saw humility as a kind of reference point guiding toward greater learning, discovery, and openness. According to Dr. Smith, the humility of question-asking was "related to the question, do the students really feel a sincere desire to learn?" For Jacky, this desire included the consideration of honesty: "We are willing to ask a true question when we are humble." She added:

> I think a question asked . . . to gain validation of the answer you feel like you already have versus the humble question that's more like, I'm honestly open to where this discussion goes and discovering ideas or answers that I might not already have thought of. And so I think the humble question really opens us up to greater learning.

Peter suggested that humility had something to do with simplicity and a willingness to be not so sure about oneself: "Simple questions are the hardest to pull off, and often are, in my opinion, I think the most humble in their origins. But there's I think a little bit of humility just because of . . . tentativeness." Jim also made the connection between honesty, humility, and equality:

> Having constructive conversation requires humility in order to see what the other person is thinking, and your question should be like a bridge between perspectives, beneficial to you, but also mean something to the other person. . . . Humility and equality and honesty, not only learning from them, but contributing to them.

Peter's version of humility was akin to Jim's, a recognition of the value of the contribution of others:

> In a way, I think that humility is kind of inescapable, because to learn something. . . . I now know something that I didn't before, I have to kind of assent to that being the case. . . . It's something that I didn't come up with, something that I learned from somebody else. . . . And there's a kind of deference in that, at a very basic fundamental level.

David's final paper, which identified attributes of a good designer, suggested that this humility was part of a trajectory of improvement:

> If you are setting out to be a designer, then you can deliberately learn some of those different attributes and nurture them . . . it becomes something you're actually trying to improve on. And be better at. And so, and I think it takes a bit of humility too, because you've got to be able to identify where you're falling short and where you can improve.

Harry's comment on humility added that a sense of courage allowed one to cope with the vulnerability of questioning:

> I loved the kinds of questions where a student indicated what they didn't know but wanted to know. And that opens up a lot of vulnerability in asking the question, because in front of the group, you're admitting, I don't know this, or I don't fully understand this.

Although participants coupled the intentionality of questioning to the virtues of sincerity, honesty, humility, and equality, most of the students in the class admitted to having participated in questioning interchanges that did not quite live up to those standards. Harry told stories about asking questions to others that he wanted them to ask him so he could give them his answers or asking others questions "to convince them to come to my point of view."

Another problem might be what Dr. Smith termed showboating:

> There is a norm that students are not going to showboat. . . . I think if students feel that another student is showboating or trying to monopolize or draw attention to them or their views, I think that they tend to react poorly to that.

Several students identified these kinds of questions as "posturing," where the communication might be in the form of a question, but the intent would be to communicate something other than

the content of the question. Although Peter said this kind of "impression management for its own sake is low," he admitted to having asked questions as a way to impress others.

Such posturing might not always be a bad thing. Jim recounted times in which he would ask a question so that the teacher would know that he had read the assigned readings. Jacky suggested that questions might be asked "to make a certain impression, not 'oh, she's smart' but impress a certain perspective on people." As Harry and Peter both suggested, sometimes their questions hid their own strong answers but they were presented in a way that seemed less brash. In addition, Jacky defended the use of questions to manage conflict in ways that might contribute to a social good. In work situations she might put questions to people as a way to get them to reconsider or soften their stances. In this sense, she used questions "as a tool to drive conflict to a meaningful output. So, sometimes it is minimizing the conflict and sometimes it's just directing it." In Jacky's sense, this kind of question would function as a tool to soften and ameliorate communications that might otherwise be taken too negatively to be productive.

Whether or not students always lived up to their ideals of question-asking, the morality inherent in their questioning highlights the social virtues in their view of how learners should stand in relationship to each other and in how they should learn; learners should be respectful of others, they should be open to others' contributions, and they should be sincere in their own intention to learn. The major demand seems to be that students have a responsibility to facilitate and not hinder the learning of themselves and others. Although layered and nuanced, a more or less right and wrong way to participate as a question-asker became apparent in this class setting. And these virtues of, for example, openness, humility, and honesty operated in the background as reference points regarding how questioning should be done and how the goods of classroom practice, in this setting, could be appropriately pursued. That students' ways of questioning were

informed, in one way or another, by these reference points seems to locate question-asking at the center of the goods of learning and implies a certain kind of meaningfulness in students' social interchanges, that is, one in which these virtues matter. It is in this sense, then, that questions and ways of questioning showed up as a kind of moral stance-taking by the students as they positioned themselves in relationship to one another.

Metatheme 2: The Sociality of Question-Asking

Important themes in this study of question-asking, as part of graduate student practice, pointed to the social goods of the classroom ecology. It was not the intent of this study to analyze the conversational style or language of the social interchanges, but the moral ecology in which these interchanges were situated. However, it is clear that social goods toward which students pressed were as important if not more important than the academic goods of the classroom. These findings include the ways that students chose to participate in the question-asking interchanges, the stances they took in relation to convergent or divergent questioning, and how various kinds of challenges can contribute to the classroom good. These themes show how the complexities of practice presented themselves to students and how students oriented themselves as they pressed toward classroom goods. What became clear through this exploration is a complicated picture of students taking differing stances in relation to the reference points that pointed them toward or away from what, in general, were shared understandings of the social classroom good.

Theme 3: The questions of participation. How students participate in the sociality of question-asking is an important part of the classroom ecology. In this class, as in most classes, a pattern emerged in which some students talked a lot and others didn't. Exploring participation in question-asking interactions revealed unexpected nuances about the reference points that shape

the moral terrain of this classroom ecology. These reference points of participation in questioning interchanges included issues of fear and judgment, moral considerations about the student sense of fairness or courtesy or awareness of others, and an evaluation of one's position before others in the classroom. As students considered and explained their varying stances in this regard, they discussed what made a difference for them as they engaged in question-asking interchanges with one another. These considerations were the reference points that pointed them toward or away from the classroom good.

An exploration of classroom participation necessarily includes the issue of nonparticipation. In one sense, nonparticipation in question-asking was part of a bigger pattern of all kinds of classroom participation—that is, students who were quieter in general participated less in question-asking interactions. For some of these students, fear was a major obstacle to asking questions. As the most junior member of the class, Anne felt daunted by her own lack of experience and her perception that the other students were much more mature and familiar with design principles. In class, she said little and deflected the questions that were put to her by the professor. She generally characterized herself as a very outgoing person and a very vocal contributor; she indicated that in other classes she was often a dominant force in discussions. Some of Anne's reticence in this class was explained by her own perception of others' judgments:

> You know, there's a lot of stigma that goes with not participating. So you need to be heard, but if you are being heard in a way that is asking these bad questions that we have talked about, then you are seen as equally kind of stupid or slow, or you're not, you're just not there, and you're taking up class time, and you shouldn't be. Maybe I'm just a really judgmental person. I don't know. But I

> think that every time you open your mouth, in a classroom setting, there's going to be some form of those dynamics happening under the current, whether you're conscious of them or not.

Anne was thus silenced by her concern regarding the possible judgments of others. David articulated the profound way in which his own judgments and his presumptions about the judgments of others influenced his ability and willingness to articulate questions: "They say there are no stupid questions, but there are questions that make you feel like an idiot. . . . And people are going to say, 'Why is this guy in this class?'" Peter made a similar observation, that if he were mystified by a course reading, he would be very unlikely to reveal that in class. As he said, "I didn't want to look kind of incompetent."

Harry also suggested that questions must be asked even in light of the possible judgment of others: "If I ask this question, it's going to make me look stupid, I don't care." For him, the fear of looking unintelligent to others did not necessarily lead to silence. Nonetheless, the fears these students expressed suggest something about implied reference points of this classroom. Students should be smart. They should not be ignorant. They should know what is going on.

Lack of participation in classroom interactions did not always imply fear of others' judgments. Anne told the story about watching Charles in class. Because he was so quiet, she assumed that he was as lost and afraid as she was. But when Professor Smith called on him, she was surprised to see that he always seemed to be tracking the conversation, and he always made some appropriate response before lapsing back into silence. Charles's silence sprang from other motivations. For example, he claimed that he was quiet because that was his nature. He wasn't afraid to speak up. He was just happy to let other people take the floor. As he said, "Sometimes I

have something to contribute, and sometimes I can sit back and let others make a contribution." Indeed, as Harry suggested, "Sometimes silence *is* a question—[asking] what do you have to say?"

Even Anne's fear was mixed with moral considerations. For one, she sensed that there was a standard of excellence necessary for a graduate classroom and that it would be wrong of her to sidetrack discussions for her own very basic informational and conceptual needs. Here, she felt that her questions would not contribute to the good of the class. Moreover, Anne showed a striking awareness of the emotional dynamics among students and felt that the most vocal participant in class, although appearing confident on the surface, was emotionally vulnerable. If her own questions constituted a challenge to him, she reasoned, it could be personally hurtful. She refrained from challenging him in order to give him the latitude she felt he needed. Thus, Anne's conspicuous silence was situated within a confluence of reference points—the value of understanding, the value of contributing, the value of emotional sensitivity, and the value of academic appropriateness in a graduate setting—that ultimately interfered with her question-asking.

Just as lack of participation is sometimes a problem in the classroom, so also is too much participation. Jacky, Peter, Jim, Harry, and David all articulated some form of the demand that students participate as a part of giving to the classroom but at the same time not take up more than their share of time. As Dr. Smith said, "There is a norm that students are not going to showboat" or monopolize the discussion. Most of the students in the class showed some self-conscious awareness that they might be talking too much. Harry said, "I am dominant," but "I want to hear from other people." Jacky said in several forms, "Sometimes I ask too many questions," and "I'm still learning how to evaluate when I might be too strong or asking too

many questions in class." Peter too expressed his uneasiness: "I hope I'm not talking too much in class." As Jim said, "A good student would realize, 'I need to stop talking like this right now because everyone is tired of hearing from me.'" David's practice of participation was aligned with this. As he said, "I tried to be aware of how long I'm talking."

Peter and Jim both viewed this sensitivity to sharing time as a social expectation. As Peter explained, "I guess I'd call it more of an etiquette thing, more than anything else." He suggested that this form of etiquette flows out of a notion of fairness: "It's about fairness. . . . It wouldn't be appropriate for me to hijack the class discussion." On the other hand, Jacky felt that allowing time for others to share was more than etiquette; it was a moral-social obligation. As she asserted, "Asking questions and learning in a group environment isn't only about my curiosity or my desire to learn more. . . . Honoring and respecting other people's learning matters."

Peter referred to a unique moral point of orientation that guided some of his restraint in class. He saw himself playing a different role than other students because he was not taking the class for credit and did not have to complete the written assignments. According to him, "they [the registered class members] have a claim on class time to direct to more of their concerns. As an auditor, I am allowed a limited amount of that, in my opinion."

Querying into class participation also raised the issue of what actually constitutes participation in questioning and how question-asking interactions were related to other, non-interrogative kinds of classroom interactions. Indeed, as classroom observations and student reflections suggest, questions can be asked in a variety of ways. In interviews, for instance, there arose conversation about what did and did not fundamentally constitute a question. At first, both David and Peter said that they weren't asking many questions in class; they didn't view their

interchanges with others as driven by question-asking on their part. Yet the professor and several other students had identified them as active questioners. Professor Smith suggested that while they weren't admitting ignorance or asking directly for information, they and other students in class sometimes asked questions in a propositional manner in order to obtain feedback. As Dr. Smith remarked:

> I think both of them and all of the students in the class would make statements, but they were questioning statements. They were statements where the tone of voice that they used or the way that they kind of rhetorically dropped it in the conversation didn't feel to me like they were making a definitive point or that they were defending a position, it felt to me like they were just sliding something across a table to see what people thought about it. And to me, that's questioning. It's a form of questioning. It may not have a question mark at the end of it, but by their tone of voice they probably put a question mark at the end of it.

When confronted with this challenge to the presumption of questions as explicit requests for information, students recognized that their propositional statements could be construed as a form of questioning. They admitted that their comments often constituted a search for feedback—an invitation for others to respond to them. As Peter remarked, a student might "opine to try out opinions and see how they fly." Or as Harry verbalized it, "I present my positions as a question to ask 'Is my understanding correct?' to make sure I've understood it correctly. . . . [I'm] inviting them . . . to say something about it." Expressing questions in the form of assertions appeared to be important in a graduate class such as this because of a shared expectation that graduate students should be "smart"—that is, they should know about things and not be ignorant. Floating propositions in class as a way to ask questions seemed to be a way of trying out ideas

and getting feedback about their accuracy without admitting ignorance. Students might also be floating propositions to get social feedback on their standing in class. As David shared, "I would always run anything that I would say through the filter of 'is this going to raise me in his esteem or lower me?' And then I would wait for [a] response after I asked the question."

Just as question-asking sometimes came in propositional form, assertions and opinions were at times expressed in the question form. David, for instance, recounted that at times he would articulate a claim as a question so as to soften the tone and avoid coming across as too brash. Both Peter and Harry told stories about asking questions to others that they really wanted to answer themselves or so they could articulate their own answers. Sometimes it might have been to just have the floor, or, as Harry suggested, assertions might be cast in question form in order "to convince them to come to my point of view." Thus, ironically, just as students in this class sensed that graduate students shouldn't demonstrate a lack of knowledge, they also sensed that students, even graduate students, should not demonstrate too much confidence, put their ideas forward too confidently, or come across as know-it-alls.

Overall, these observations suggest that participation in question-asking can show up in different ways, based on how students position themselves with respect to the instructor, other students, and their attitude toward learning. For these students, it was sometimes more safe or appropriate to hold back from questioning, to limit their question-asking time, or to be indirect in one way or another in asking questions. Some questions were stated as propositions, and some propositions were stated as questions. Thus, in this class, there was more than one way to participate as question-askers, and questions showed up differently depending on one's sensitivity to implicit reference points and classroom social dynamics. This sensitivity to a number of "unwritten rules" of class participation and the variety of question-asking styles also

suggests an important point about student involvement in the moral space of this class. Students had to take stands in relation to these diverse reference points and, perhaps implicitly much of the time, seek balance among them as they pursued the good of class participation. While there might be some agreement regarding expectations or moral reference points in this setting, students moved toward or away from those expectations in different ways.

Theme 4: Convergent and divergent questions. One issue that divided opinion among participants concerned the value of convergent and divergent questions in learning. Convergent questions were those that focused on the readings and tended to lead to agreement and closure. Divergent questions led away from the topic at hand and created new questions, or they led to a sense of ambiguity or questions that took the conversation in new directions, suggested alternative perspectives, or challenged the ideas. Students agreed that both kinds of questioning could foster learning. However, they also agreed that too much of either kind of question could hinder learning. Too much closure would be restrictive or stifling; too many divergent directions would end in chaos. However, no consensus emerged about some golden mean of convergent versus divergent questioning. Individual participants expressed a distinct preference for more of one kind or the other, and these preferences suggested differences in how students responded to reference points and social goods associated with convergence and divergence.

In the complexity of convergent and divergent questioning, Harry's role was pivotal. Harry's questions seemed to be the most divergent of the group. His questions continually reached beyond the bounds of course content, trying to make his own historical, social, political, and religious connections. He commented that many of his questions were attempts to get back to his own learning model. Admitting that he was "very aware that my purpose for this course was quite a bit different from most everybody else taking this course, on a number of levels," he

concluded that “it’s nice to fly off on a tangent, and just to discuss things and let the conversation flow and go where it’s going to go.” According to Harry, the professor would sometimes do the following:

> [He would] stop the class and say “Okay, this has really been fruitful and good, but we need to go back because I want to cover these points.” . . . But there’s other times [he] would let things go . . . and he was very open about this at the beginning of class, that he’s like, it may go someplace that I didn’t expect it to go. And that often happened in this class with insights and comparisons and in that case it was really helpful. It stimulated thought, it’s what helped me flesh out my model; it’s what stimulated my thinking.

Jacky, in particular, found Harry’s tangents interesting and invigorating. She found that “negative closure is dogmatic,” adding, “I think my personal learning is enriched through . . . thinking in new ways about things. I don’t want a learning experience that just confirms my preconceived notions.”

Several students, however, mentioned that these types of conversations were somewhat unpredictable. Jim particularly found this questioning and accompanying discussion unsettling. Although he was not looking for classes with preconceived answers or that limited perspectives, he was looking for convergent conversation in which participants moved in similar directions, asking synergistic questions. As he stated:

> My best questions tend to come when I’m talking to someone, with whom I can have a conversation, where I bounce ideas back . . . because I’m on the same wavelength as that person. We have a mutual understanding up to this point and then especially if it happens multiple times where each of us have come up with a

> question or two and we keep on finishing each other's thoughts or asking similar questions, then I'm confident that the direction is the same and the questions that I'm going to ask are what they're interested in as well. So I think that's one, that's like ideal learning for me.

Peter suggested that the issue of convergence and divergence was complicated by the fact that students were bringing various background interests into the classroom. As he observed, "It was not so much that there were good and bad questions in the classroom, but just questions that were more or less relevant to me." But he also added that, in his view, there were moral considerations (reference points) about how a class visitor needed to act. "An auditor [Peter was auditing the class] should not hijack the class discussion to ask questions that were deeper or more idiosyncratic questions, unique to me and to my situation." Harry's sense of his role in class also influenced his position on convergent and divergent questions. His questions were often coming from a post-student position of pulling ideas together into what he called "the one great whole," the unified, ultimate end of divergent exploration. He believed that there are right answers to questions and that ultimately all knowledge will fit together. His seeming divergence was, in his own eyes, an attempt to connect all the dots between what he was learning in class and everything else that might be relevant to his own search for truth. His taking the class on tangents, then, was really part of his quest to pull things together and in that sense could possibly be thought of as abiding by a particular reference point for mature students who independently pursue the goods of learning.

Other students, however, were using the final class project to gauge how much convergent or divergent questions might be appropriate in class. They needed to produce a final paper focused on the design thinkers and theories that constituted the core subject matter of the

class readings and thus were somewhat less inclined to revel in divergent questioning. Their desire for tighter, more focused answers formed a basis upon which to judge the appropriateness of divergent or convergent questions. In this regard, student responses to the issue of convergence and divergence revealed often conflicting reference points, namely, those that guide toward exploration and debate and those that guide toward academic clarity and comfort.

Challenges surrounding convergent and divergent questions show how complex the classroom ecology was as students took various stances in relationship to diverse classroom reference points and goods. And indeed, these issues mattered to the students as they viewed themselves in relationship to the goods of learning. Thus, different responses regarding the divergence or convergence of classroom questions revealed differing reference points, orienting students toward or away from particular views of the goods of this classroom experience. These differences regarding convergent and divergent question-asking challenge the idea that there is some ideal way of asking questions to facilitate teaching and learning. Judgments about when to let go and when to hold back, from this perspective, would need to be made in light of the particular combination of student needs and classroom purposes. And in those judgments there is not likely to be an optimum solution for every student at the same time.

Theme 5: Questions as challenges. Inquiry into how often, or how intensely, students should challenge each other and the professor revealed several references points and goods of practice in this class. Students tended to agree that questioning others' views and class material can lead to learning, one of the obvious goods of classroom practice. However, in practice, students took widely differing stances regarding how much challenging was appropriate. Queries regarding challenges to others in the classroom brought up issues pertaining to mutual respect, attitudes toward authority, and personal learning preferences. An exploration of these issues

showed different reference points by which students considered the actions that might lead them toward or away from social goods in this classroom.

Dr. Smith and most of the students agreed with the idea that challenging questions are helpful to learning. They open up new perspectives. They help you grow. They expand your way of seeing the world. As Dr. Smith articulated, "Challenges in general I think are healthy and positive, and probably should be an expectation in a university education, especially in a 600-level class." In Jim's view, questions and challenges reinforce each other. He explained that helpful questions "are the ones that challenge ideas and the assumptions behind them." And he explained, if people aren't willing to critique the way they understand things, "they will ask superficial questions."

For Jacky, challenges lead to good questioning. She said, "I love being challenged because it makes me question my assumptions. . . . I kind of feel that mortality is inquiry . . . this distilling down to something I can change. . . . That matters." For Jacky, such challenges and questions are the nature of learning itself:

> My personal learning is enriched through . . . challenging of ideas and thinking in new ways. . . . I don't want a learning experience that just confirms my preconceived notions. If I'm not changed, if my eyes aren't opened to a different thought or different viewpoints, then I'm not sure how rich my learning is.

Although Harry's approach to challenging was similarly enthusiastic, he was not so much motivated by a willingness to receive challenges as he was by the willingness to challenge others. His was a tougher approach:

> When I worked on my doctoral program, I worked with a friend . . . and he and I on some points would adopt a very adversarial position. We would really go at

> each other, back and forth, arguing our points, like deep down dirty dog arguing. But neither of us took it personally. And it was the kind of thing that somebody walking in would take a look and go, "These two people shouldn't work together and don't like each other," but in fact, [he] and I had a great friendship and really liked each other and it was because of that friendship that we could go at each other like that. If, I wouldn't be able to do that with some people in the class, because they haven't commented as much or I don't know as much about them, and it may not be their style. So, I have had that style, it's very abrasive and confrontational one, . . . I don't see it as a negative thing . . . because it makes me stronger, you know. It's kind of like that phrase "you don't always make my life easier, but you do make it better."

For Harry, this kind of challenging and being challenged made for better lifelong learning. In the end, Harry's turning point for engaging in or not engaging in challenge came down to how well he knew the person he was confronting. As he worded it, being "abrasive" and "confrontive" was not in itself wrong for him, but it became wrong if he didn't know how people might take his forceful questioning. Facing off was an acceptable learning enterprise when all the parties involved found it edifying.

Jacky too was aware of the risks that accompany challenges to others. If "challenging became personal," that is, might be considered by someone to be a personal attack, then it would be wrong: "Honoring and respecting that creating a threatening environment inhibits other people's learning matters to me. . . . For sure I don't want to hurt people or offend people with the questions I ask."

Differences in student considerations about what challenges point toward or away from classroom goods suggested the need for students to make judgment calls regarding when to challenge and when to hold back. Jacky admitted that for her this judgment was not always easy to make. She said, "I shouldn't say I'm an insensitive person. . . . It's just that I'm not always so good at picking up on 'this might create discomfort for other persons.'" Jacky's comments suggest that she didn't mean to be abrasive or confrontational; for her, challenging was about ideas. However, others had sometimes felt personally threatened by her questions and challenges. So she had learned to be more cautious, suggesting a need for balance among reference points that simultaneously point toward challenging others in order to learn, on the one hand, and being concern about the feelings and academic security of one's fellow students, on the other. Similarly, Jim explained that, for him, when challenges became like a debate, they moved away from the goods of learning together. He explained:

> [When it is] like a debate instead of like a discussion where this is my position, and this is my position and we are going to stand here. There's no edification in just stating your viewpoints if no common ground is found or attempt to understand each other.

The limitation on challenging others was for Charles a matter of kindness. "If it isn't kind, don't say it," he stated. For others, also, the dilemma of when to challenge and when to hold back was a matter of context, of who else was in the group and how they might perceive a challenge. Jacky recounted that she had learned to watch out for signs that others might be uncomfortable with her challenges, then to take time to personally communicate with someone outside class time to make sure that this fellow student was not offended or made uncomfortable. She also talked about "listening to the spirit" so she would know when to sit back and be quiet.

These reference points show how the participation in practice demands a juggling of learning and social demands as different reference points cross each other, and it suggests that practice demands ongoing judgment in context.

There were reasons besides social awareness that restrained student challenges. Peter defined his moderate stance on challenging interchanges in terms of respect for authority. In relation to the professor, he suggested that there might be an "authority of knowledge" that called students to take a respectful stance in relationship to not only the professor but also leaders in the field—the authors of class readings—who surely were more experienced and knowledgeable than students in the classroom. Much of Peter's participation in class was based on his acknowledgement of and commitment to the expertise of the instructor; Peter wasn't out to challenge but to learn from him. Peter might have been willing to challenge a professor if he felt that he had access to and understanding of the same knowledge base, but he would be careful in doing so. Reference points regarding challenges to the course professor seemed to lie in the background of other participant comments as well. As Charles stated, "Challenges to authority are okay *if* they are respectful." Harry said that challenging a professor can be beneficial, "like when you are saying I've had experience that differs from that . . . or I don't see how this fits into your perspective." For him, bad challenges were those that might be construed as insulting. These discriminations about when challenge is permissible might be seen as a confluence of reference points (i.e., those associated with the value of learning and growing vs. those associated with respect and recognition of expertise).

On the other hand, David's ambivalence about challenging the readings as well as others in the class was based on his holistic approach to learning in general. As he said, "I am looking for holistic answers rather than analytic ones." As a creative designer, his approach was synthetic.

He was trying to build a picture for himself and would underline the readings and focus on the ideas that he agreed with, that he was familiar with, and that he thought applied to him. In addition, Charles felt that practicality, as discussed in Theme 1, was also an important consideration in making the decision to challenge. Though he rarely challenged others in class, he said that he did present challenges at work. But even then he calculated what changes were important for him to make and what were possible given contextual circumstances. Then he would select the change he felt he could really effect and strategically reserve his challenges for those points. Even then his challenges would be quietly stated.

The study of the reference points as they emerged in the way students challenged, or did not challenge, one another reveals the complex way a moral ecology functions. Students bring to the learning situation a sense of the good of learning together, and they interpret and act on the questions and challenges that are presented to them in practice, making judgments and choices about what to do and not do. Indeed, they are drawing from and seeking to balance many moral reference points; what leads to good action in one situation doesn't necessarily lead to good action in another that involves different people, a different intersection of practices, or different expectations.

Metatheme 3: The Temporality of Questions in Practice

Following from hermeneutic theorizing (Gadamer, 1993; Heidegger, 1962; Slife & Christensen, 2013), questions exist in the midst of the temporality of human existence, situated in the past, present, and future. As examples in Theme 1 suggest, students bring with them a set of tacit, and sometimes explicit, presumptions grounded in the familiar circumstances of the past. Questions about these past experiences, and what Heidegger (1962) called "projections" into possibilities of the future, were important phenomena in this study. Heidegger's ontological

approach challenged the view that the past is fixed and *causes* a present, which in turn *causes* events that will occur in the future. In Heidegger's view, the past, present, and future are in and part of each other aspects of a temporal unity. The insights garnered from inquiry into these temporal aspects of questions provide what might be the most important results of the study. They are explorations of the temporality of questions and question-asking as part of the classroom questions that matter to students. Looking at the temporality of student questions also shows how problems present themselves to students in class and how students respond. Inquiry into the temporal nature of questions also reveals how the past, present, and future unfold in each other in a moral process of disclosure and hiddenness.

Theme 6: The temporality of questions that matter. The temporality of student question-asking showed up in what mattered to these students. As Gadamer (1993) noted about the importance of the past, "A person who has to make moral decisions has always already learned something" (p. 316). Taylor (1989) and Brinkmann (2004) suggested that explaining human behavior in terms of the "telos," or future of practical action, means "understanding the normative and moral dimensions of human life" (Brinkmann, p. 60). Thus, exploring the past and future of questions is an essential task for seeing how the morality of questioning showed up for students in this moral space of practice. What emerged was a moral view of why some things mattered to students and some didn't, and why some things bothered them and others didn't, and what kind of stances they took as they responded to the problems that were presented to them as they pursued learning in this environment.

It should be noted that, as Heidegger (1962) proposed, "Projecting [into the future] has nothing to do with comporting oneself towards a plan that has been thought out. . . . On the contrary, any Dasein has, as Dasein, already projected itself, and as long as it is, it is projecting"

(p. 185). Thus, a tacit anticipation of the future is always and already there, a part of how people experience projection as part of their everyday lives. The findings in this theme, then, are based on my effort to articulate and thematize the moral aspects of participants' prior classroom involvement as well as tacit (sometimes explicit or made explicit) student anticipations that played a role in specific question-asking interactions in the classroom. I do not suggest that these findings represent an exhaustive or overall account of how these participants experienced their historical embeddedness; rather, they provide clues about how questions mattered in the temporal unity of past, present, future for the students in this study and how the temporal unity of past, present, future provided a context in which these questions could matter. Moreover, given my intention to explicitly study question-asking in a moral-temporal context of practice, these findings are presented in a more thematized way than they would be experienced by the participants in the everyday conduct of being graduate students. What I report here is not identical to what hermeneutic thinkers have theorized but is instead an inquiry-based reconstruction and thematization of temporally situated phenomena.

Analysis of classroom question-asking suggested that a moral orientation about what mattered to students became apparent as they recollected past events and articulated some of their future anticipations. Peter connected his past experiences with his current classroom challenges and his future questions. He had been interested in experience-based learning since he participated, as a graduate student, in an undergraduate class on experience design offered by the recreation department. That class had served as a practical counterpart to Peter's theoretical interest in student agency in his graduate program. Thus, in the context provided by his prior classroom practice, Peter had come to agree that experience-based events were important to effective learning and that learner agency was critical to effective instructional design. However,

while he wanted to be true to what he considered a right way to practice instructional design, he also wanted to be professionally authoritative. He wanted to know if his commitment to experience-based design and student agency would facilitate his career aspirations. As he noted, "Always a background concern of mine was 'what's the viability of this kind of talk [about student experience and agency] in our field?'" In practical terms, he wondered about "the question of what . . . my life [would] be like if I were to be a scholar of instructional design . . . [this] matters for my life because we just bought a house . . . how long I plan to be here . . . how it affects our children. All that stuff." Although an inspection of the transcripts shows that Peter articulated his questions of professional possibilities only once in class during the term, he said that it was a "pretty important question for me to figure out" and "probably behind almost every other question I asked in class." These present questions mattered to him within a temporal matrix of prior experiences and possible future trajectories.

Jim's response to inquiry about his questions shows how he understood one of his current classroom challenges in terms of his past. Analysis also suggested how Jim's anticipation of his professional future offered some indication of why that challenge mattered so much to him. More specifically, Jim experienced frustration with some of the social interactions in class that interrupted his questions. To explain his concern, he used a past story to contextualize this frustration. He told the story of his social transformation in high school where he learned how to engage in mutually productive conversations. Jim's high school experience thus became a pivotal reference point that helped him judge the propriety of the classroom social atmosphere. Thus, what was sometimes missing in this graduate class, in his view, was a collaborative conversation of learning together. He explained:

> I think it [my sense of appropriateness for questions] is tied to where other people in the class are and where the class is going, where the teacher wants it to go. . . . It should be a discussion of ideas and which ideas make sense and which don't and everybody comes away feeling edified.

A consideration of Jim's anticipated future also suggested something about what he saw as right or wrong in this moral space. His was not just a concern about social impropriety on the part of other students. Given his professional desire to teach second-language learning at the university level, he saw this course as a stepping-stone toward his future projects. As he said, "My purposes and the course purposes were closely aligned." Thus, the theoretical goals of the classroom mattered to him. To be a good academic, he felt that he needed to understand not only the major ideas in the course but also the subtleties and nuances of the subject matter. He wanted to make connections among thinkers and track the historical precedents behind their contributions. He thought that this background would help him enter the field as a professional and make a significant contribution. And he felt that the class should enhance his ability to pursue this academic goal. Thus, diversions in class that obstructed his learning were not only a frustration; they were, to him at least, a kind of moral infringement that would block him, as well as other students, from learning what was necessary for professional success. Along with other members of the class, Jim shared the sense that student learning ought to enhance professional possibilities and that diversions might detract from that good. However, for Jim, the particular combination of past events and future projections that showed up for him had intensified his response to events that might point away from a good of practice.

Jacky's classroom questioning showed a unique interplay between past and present orientations. Based on her past practice, she sometimes challenged classroom theories, and yet at

other times, based on her theoretical experience in class, she challenged her own past actions. Jacky suggested that she had critical questions about some theoretical propositions in class because she was matching them against what she called “the litmus tests” of her past professional experience. Jacky had already had a rich background of practical experience in design when she entered the instructional design program. She had gotten started through involvement in her children’s school district, found herself designing curriculum there, and then landed a job in the university’s independent study program, all before she started her graduate program. Jacky thus entered the design theory course with a sense, shared with other practitioners, that practical engagement in curriculum design was the basis of good curriculum design work. As she clarified, “I distrust generalizations” not grounded in practice. Many of her classroom questions emerged from this reference position as she explored the generalizations of design theory.

However, in light of her design theory experience, Jacky also found herself reevaluating her own practically minded actions of the past. Jacky told the story of being in a class discussion when she suddenly realized that she had previously misunderstood her work colleagues who advocated a concept that she was now studying in class. Her response was to apologize. As she recollected: “I’ve gone back to some people and said, ‘I need to apologize. My behavior was based on limited understanding and I acted ignorantly and that caused you more work, and I can see that now.’” Basing this stance in the classroom orientation toward theoretical goods, Jacky had reinterpreted her past. And along with her social commitment to honesty and consideration of others, this reorientation turned into a self-evaluation that placed a moral demand upon her. She came to see that what she had done was wrong, in this practical-moral sense, and that she needed to make it right from the basis of her new perspective.

Theme 7: The temporality of questions in hiddenness and disclosure. Not only does the temporal perspective tell us something about how these students' questions mattered to them but it also highlights the hiddenness and disclosure of their questioning experience. That is, as these learners asked questions, certain perspectives were opened to them while others were obscured. In other words, the present showed up or was disclosed in terms of the past and the future. Sometimes it also worked in other ways where the past showed up differently reflected through present experience and future expectations

Exploration of student disclosure shows how complex orientation in temporal terms might be. Students sometimes took classroom stances because they were oriented by past events. And sometimes it was the past that was called into question by classroom orientation. Jacky shared an instance when, during a classroom discussion and based on her practical orientation from the past, she took a strong stand that challenged the classroom theory of "breathing together." This idea suggested that teams can work together in extraordinary unity if they bring themselves to a common vision for work—that is, "breathe together." In the classroom discussion of this topic, Jacky took strong exception to this theoretical notion, saying that she had never seen it happen in her experience on design teams. Her experience on teams had usually been trying to cope with strong divergent personalities that made working with a common agenda very difficult. The idea of breathing together sounded much too idealistic and impractical to her.

However, some time after this classroom discussion, while sitting in on a difficult design team conversation in which conflict was threatening the team's ability to produce, Jacky said she found herself explaining this concept to her team and saying, "We need to be breathing together." Afterward she laughingly remarked, "I can't believe I just said that." Jacky realized

through her subsequent practical experience something she had not realized in class—that the concept of breathing together provided a goal for teams to work toward, not a description of typical teams. Thus the theoretical idea of breathing together showed up differently for Jacky after a new experience disclosed a new dimension to her. She still used hands-on practice as her guide toward good curriculum design. However, past practical experience showed one aspect of the theory to Jacky, and subsequent practical experience showed another. Jacky's story highlights how, hermeneutically speaking, the past is not fixed and determinant, and it does not, unidirectionally and unfailingly, determine the present. This understanding showed up in how Jacky reevaluated the classroom discussion, as ensuing experience disclosed something to her that she had not perceived while she was participating in the discussion of breathing together.

Disclosure can be seen as a simple matter of growing understanding. Evaluating past performance for Harry was a seemingly simple case of disclosure about the inadequacy of his past questions from his current and more mature sense of what the reference points of learning seem to demand. Reflecting on what he called his past "immaturity," Harry said that as a young undergraduate learner, his approach to his fellow students was "I don't care about your perspectives." . . . "I just want to know what I need to know for the test." As an undergraduate, Harry had judged the value of his questions in relationship to how they led to getting good grades, and getting good grades seems to have been his measure for good learning—what he took to be *the* significant reference point en route to, or definitive of, good learning. However, from the vantage point of his postgraduate status, in which grades were disclosed differently—as not particularly important to the practice of learning—he judged that "the point of the class is to ask questions" and that the goods related to learning questions were "to grow and to be able to either discover new knowledge or create new knowledge." It is not clear if his former

"immaturity" meant that the goods of learning were not part of his participation in undergraduate classroom practice or if his commitment to grades served as a possibly false reference point that oriented him away from those goods. What does seem clear is that after his development of a learning model and his participation as a postgraduate student, he judged the stance of his former questions to be wrong.

Inquiry into disclosure as informed by the past, however, sometimes shows how layered a reference point might be (i.e., what considerations might make up how a reference point shows up). David's disclosure—a changed notion of what counts as bad and good questions—suggests the sophistication of his orientation to both classroom and professional goods alike. David's initial hesitation to ask his basic questions about theory seemed to emerge from his sense that graduate students should possess basic knowledge and that questions should be built on that understanding (i.e., that a certain competence was a necessary reference point that pointed to learning in the practice of being a good designer). From that position, his lack of background in theoretical aspects of design meant that his basic questions were bad questions. However, his growing familiarity with design theory disclosed his basic questions in a new way.

As he explained:

> I wouldn't show up the first day of class and say, "Dr. [Smith], what is a design theory?" Because I'm like, okay, this is what the class is about, we're going to learn about it in this class. . . . On the opening end it's part of that naïveté I guess with me as a student coming in thinking that everybody else already knows all of this, and I'm the ignorant one. And so to open up the first day of design theory class saying, "So what's design theory?" you know, would probably reveal that I didn't know as much as everybody else. But I think that by the end of the class I

> realized that this—What is the design theory?—is the question that all of the readings and the whole class and people back to WWII have been asking. So you know, it turns out that it is really the pursuit of that question that makes everybody's design theories, theories. So that by the end I realized that that question wasn't necessarily a bad one to ask. That's one of the driving questions of the whole program.

What had changed for David was not so much that he was asking better questions. It was that his classroom experience had disclosed to him the value of his own basic questions. In this case, David's sense of goods in a graduate class remained consistent: he still thought that expertise mattered—that familiarity with the subject matter was important in evaluating what made a good question. What had evolved was David's evaluation of his own expertise based on his increasing familiarity with the design theorists. What he judged as a bad question at the beginning of the class, when he didn't know much, turned out—with greater familiarity—to be a fundamental and important question that the important thinkers in the design theory field were themselves trying to address. Thus, this reference point had to do with the expertise of the question-asker rather than the questions themselves. David's real evaluation was of himself as better and, having been changed by his practical involvement, better able to ask good questions.

Inquiry into the temporality of questions in this classroom revealed not only how questions disclose certain aspects of past and current experience but also how questions both disclose and conceal at the same time. Anne, for example, shared the two questions that had intrigued her ever since she was a high school student:

> I had two questions that I used to ask just blatantly to people's faces. Like throughout high school I would just ask people these questions, but now I more do

it through observation I guess, but the first one is “why do people do what they do?” And “what is happiness?”

Like Jim, Anne’s questions emerged from her high school social interactions, and as such, they became moral references pointing her to the social goods of learning contexts. These two lifetime questions provided a background for the question that Anne brought to class, “How do I learn how to be a better teacher?” Anne anticipated a future of teaching business classes at a university, and her two social questions provided the basic standard by which she could measure the success of her teaching. The problem was that teaching, for her, had little to do with principles of design and more to do with the social goods of how teachers touch and are touched by the lives of their individual students.

Given this frame of reference, it is easy to see why she often felt lost and bewildered by the discussions in class. They did not address questions that mattered to her. Professor Smith had quipped in his interview that he would have preferred the class to probe deeper into the questions that had motivated the design theorists they were reading. That would have been a good discussion for Anne. Her questions about people as individuals were one step away from questions about curriculum design and two steps away from those about course design. How to teach was not the question of the class, but it was her main interest and reason for taking the class in the first place. Thus, in this respect, important aspects of design theory were obscure to Anne in ways they were not for other students with different concerns. Her two guiding questions worked to conceal what many other people in the class saw, or came to see, quite vividly—the potential value of design theory in their work.

However, if Anne’s basic questions hid a major function of the class for her, they disclosed to her other more social aspects of what was happening. Of all the students, it was

perhaps Anne who was most oriented to the social reference points of the classroom and most acutely sensitive to all the personal and social nuances taking place in student-to-student interactions that moved students toward or away from the social goods of the class. Peter, on the other hand, who asked the theoretical and professional questions that disclosed for him the theoretical nuances of the class, didn't ask about and didn't seem to be aware of the personal tensions that were percolating through the social mix of the classroom.

Jacky's anticipated future also showed how a future orientation, though imprecise, might conceal or disclose aspects of the present. Jacky's anticipations were not so much clear images as a faith in "mortality as inquiry." Her religious faith taught her that her current experiences were meaningful, even if she didn't presently understand that meaning, and that she was being led by a higher power toward an expanded destiny, even though she had no clear idea what, specifically, that destiny might be. Thus, Jacky's questions in class reflected her lifelong pursuit of an expanding, eternal self. Her moral stance in asking questions was rooted in this belief in her ongoing learning potential. It gave her a security from which she could enthusiastically embrace challenges and ambiguity; it gave her an orientation based in an expected future, that, though it wasn't specified, disclosed the future potential in her present experience. Such future potential meant that challenges themselves showed up in a particular way for Jacky as evident in her fearless thirst for inquiry and change.

Jacky's faith and fearlessness, however, might have blocked her from perceiving the fearfulness that others can have regarding questioning and inquiry. As part of her enthusiasm for challenge, as related above, she said, "I shouldn't say I'm an insensitive person. . . . It's just that I'm not always so good at picking up on, that this might create discomfort for other persons." Thus, it was the very power of her moral orientation of faithfulness that might have closed off,

for her, the reticence, fear, or vulnerability that might arise in others. This finding suggests that as students took stances that oriented them toward the good, the future and past of their question-asking made certain aspects of the classroom ecology, such as social relationships or theoretical considerations, show up as important or meaningful, while at the same time it obscured or concealed other aspects of classroom events.

Harry's comment provides a fitting explanation of what the moral narrative of questioning through time meant to him:

> There's a poem called "Ulysses" . . . and in it there's a line [that] says, "I'm a part of everything that I have met." And I can't remember the rest of it, but it talks about how each time I step through a new doorway, it extends the horizon of my vision in what I can see, and where I am. And, I believe in that, that everything that you've done, everything that you've learned and gained, builds on who you are. And what you're going to do and how you're going to do with what you have.

Conclusion

Taylor (1989) told us:

> Making sense of one's life as a story is also, like orientation to the good, not an optional extra; that our lives exist also in this space of questions, which only a coherent narrative can answer. In order to have a sense of who we are, we have to have a notion of how we have become, and of where we are going. (p. 47)

In harmony with this statement, this study offers qualitative evidence about the moral reality of practice as graduate students engage together in the pursuit of learning. From this perspective, the practice of being a graduate student, including asking questions, involves reference points that lead to the moral goods that define the space of practice. The social

interactions of the students show that they took stances in relationship to the goods of the classroom and that these stances were complex and sometimes conflicting. Finally, as these learners acted on these goods and took stances, they revealed various reference points that shaped their experience in a morally infused temporal trajectory of change, judgment, and action.

CHAPTER 6

Discussion

The purpose of this study was not to focus on classroom questions themselves, their formulation or wording, or the relationship between questions in the conversations of the classroom. It was to explore, from a hermeneutic perspective, how questions fit into the moral reality of the students and to collaboratively analyze the significance of their participation in question-asking as part of a graduate school setting. From this research I was able to develop a number of themes that identified how layered and complex the ecology was for the students and how the goods and reference points of learning showed up in question-asking interactions. These themes included the complexity and virtues, the sociality, and the temporality of their questions. They showed the different ways students participated in question-asking interactions, different approaches they took to divergent and convergent questions, and different stances they took in relation to questions as challenges. The themes also pointed to how questions from the past and the future showed up in the questions that mattered to students in the classroom and in the ways that classroom events were disclosed or obscured for them. The study findings showed how integral questions and questioning were to the practice of learning and how much can be gleaned from the interpretation of learning through a moral realist perspective. The findings suggest that as they took stances in their question-asking, students were guided and limited by perspectives grounded in the past and the future in the complex challenges of the classroom ecology. The findings also add insights into the kind of growth the students experienced as they pressed into the goods of practice in a graduate setting.

Contributions to the Literature on Question-Asking

Literature on student questioning has pointed out the paucity of student questions in the classroom (Dillon, 1988b; Susskind, 1969; Van der Meij, 1988). A number of studies explored the reasons that this might be so. Findings of this study pointed to some of the reasons that students didn't ask questions in class: fear (Dillon, 1988b; King, 1994b; Wood & Wood, 1988), awareness of others (Shell & Eisenberg, 1992), and inability to formulate questions (Glenberg et al., 1982; Graesser & McMahen, 1993; Pedrosa de Jesus et al., 2004). This study also suggested other reasons that might keep students from asking questions in class. It showed how moral considerations played a role in student reticence to ask questions, that is, considerations such as fairness to others, courtesy, or humility.

Many investigations of student question-asking in the classroom rest on cognitive assumptions (Collins, Brown, & Newman, 1989; Otero & Graesser, 2001; Palincsar & Brown, 1984). At the beginning of this study, several students talked about questions in this vein—referring to questions as an academic process of gaining mental information. And when they did so, they downplayed their question-asking experience in the classroom, suggesting that it didn't happen that much. However, when asked about the moral aspects of their questioning interactions with others, students had a lot to say about the many questioning interactions in the classroom. Thus, studies of question-asking as a social experience (Chin & Brown, 2002; Goffman, 1981; Lindfors, 1999; Pedrosa de Jesus, Teixeira-Dias, & Watts, 2003; van Zee, 2000; van Zee et al., 2001) were affirmed and augmented by the rich and complex ways that students explained their experience with questions in classroom relationships. The moral realist frame of this study added to this social perspective. When students were asked about how these experiences played into their sense of the good, they were more than responsive. They had

already been interpreting and evaluating their own and others' questions in relationship to reference points and were able to clarify their perspectives with specific instances and insights.

This study accepted the assumptions in the psychological literature about learning as situated, embodied, and a matter of familiarity (Dreyfus, 1994; Lave & Wenger, 1991; Yanchar, Spackman, & Faulconer, 2013). And when questioned about these aspects of learning through questions, students shared their varied and rich experience about the complex, and sometimes conflicting, practices that were brought to bear in the classroom. The students did not articulate their questioning experiences in hermeneutic terms. However, when presented with propositions about questioning as a way of encountering challenges (Gadamer, 1993), students were able to reflect on their own experience and add fruitful insight about how they encountered challenges from a questioning perspective.

In a similar way, students did not use ontological language (Heidegger, 1962) to frame their perspectives; however, when asked about questions that they brought to class from their past or questions that arose from their projections into the future, students were able to verbalize detailed examples from their own experience to explain how and why that perspective was true to their experience. Thus, the hermeneutic and ontological propositions underlying the study provided a framework for asking questions that elicited authentic, nuanced, and insightful responses.

Limitations on the Generalizability of the Study

In the planning stages of this study, I assumed that after data collection, I would be able to construct a visual representation of the classroom ecology. However, even though the classroom was a small and fairly homogeneous group, the complexity of the analysis turned out

to be too dense to create a single interpretive picture of the class. Such visualization would provide, in effect, a misrepresentation.

Take, for example, the issues of challenging questions discussed above. I attempted to create some loosely constructed visual groupings of students that would show their relative stances regarding their willingness to engage in challenging questions. But once I tried to configure a coherent picture of how and why students might take that position, it soon became apparent that actions and interactions in the ecology weren't based on a consistent line of logical reasoning that could be visualized in that way. Indeed, any student might have several considerations that played into his or her position at any one time. A diagram of how all the layered issues behind any given student stance at any given moment was complex enough that the attempt to connect even two or three of them looked much more like a jumbled pile of pick-up sticks than any meaningful picture.

It is important to clarify that this complexity did not stem from the fact that a lot was happening at one time. This would be the kind of complexity that a computer might help simplify and clarify. The kind of complexity I encountered in this study meant that a position that any person might take in one instance might not be consistent with where that person might stand at another time with a different configuration of issues. For example, Anne says that in the context of this graduate class, she asked few challenging questions, but in different contexts, in undergraduate classes or one where she might be more familiar with the subject matter or where there could be a different chemistry of student personalities, she might take a lead position in challenging students, teachers, and materials. Thus, the current picture can't be seen as representative of a past experience or a future picture of individual stances about the issue of how much challenge might constitute a reference toward the good. In another example, Charles's

commitment to kindness was such a strong point of reference that, though he made several positive statements about challenge as a virtue, he never did challenge anyone in class. He said that challenges must never be unkind. However, in the interviews, when he thought the question or proposition we were suggesting might imply a criticism of another class member, he would challenge that proposition. Thus, when Charles was put into a context where kindness required him to challenge the statements being made by others, he readily did so.

As any particular student stance is analyzed in relationship to some good, a visual representation might be created that would show some relative positioning of students on some particular issue. However, such a configuration could not represent the complexity of issues that make up an individual position. Nor would an individual's position at any one moment be a stable representation of where a student might be positioned in the future. Thus, any picture of even a fraction of the classroom interactions would not be a useful or predictive representation of a living moral ecology.

Potential for Generalizing the Results of This Study

If we cannot generalize from singular instances of classroom behavior or predict student changes with much accuracy, the question arises about what we can generalize and how this study could be useful. According to Brinkmann (2012),

> Generality can be attained in everyday life analyses, even if it does not have to be a goal in all cases. It is true that we cannot work with statistical averages, but we can find what Denzin (following Psathas) calls "instances" . . . . When faced with an instance in this sense, we should ask "How is it possible?" . . . What relationships and theories of self must obtain for this material, this instance, to make sense? . . . And if these questions are answered thoroughly and faithfully, we can obtain

> knowledge about the general features of cultural life that bring a certain instance into existence. If done well, readers will not even feel a need to ask "But how do you know that this can be generalised?" . . . When no one wants to raise this question, we have a good pragmatic indication that a certain analysis has given us an insight into social life with some generality. (p. 53)

I understand this to mean that we can't very well generalize about the actions of the people involved in the traditional sense of a scientific law. Any particular individual in this study may make different decisions tomorrow or change his or her mind about something he or she said. Neither can we can extrapolate from one student what another student might think or do. This study doesn't provide generalizations that would help presume from an action the underlying concerns and commitments that led to it. But this study does propose some meaningful insights based on the results: that inquiry into the interpretation of human action needs to take moral considerations into account and that interpretation of present situations needs to take into account past experience and future projections. This study can show how inquiry into what these students brought from the past and how they projected into the future might enhance inquiry about what mattered to them and why. This study does propose that these students were involved in a constant process of making judgments in the activity of practice and that a moral realist account of those judgments will render an account of learning more understandable. These are situations that readers themselves might recognize and insights that could help them interpret more profoundly their own experience in their own context.

The Hidden and the Obvious

Brinkmann (2012) has suggested a way of looking at the results of this kind of study that might contribute to the kind of generalization that would be useful and meaningful. According to

him, “What brings rigour *[sic]* and scientific quality to small-scale projects is a disciplined and analytic awareness informed by theory” (p. 23). One of his suggestions about analyzing the value of that analytic awareness was to look at how the study makes use of the relationship of familiarity and strangeness as Gadamer (1993) has defined it:

> Hermeneutic work is based on a polarity of familiarity and strangeness; . . . Here too is the strangeness and familiarity to us, between being a historically intended, distanciated object and belonging to a tradition. *The true locus of hermeneutics is this in-between.* (p. 295)

Brinkmann’s version of this relationship used the language of obviousness, hiddenness, and dubiousness. He proposed that we analyze how a study might make the obvious obvious; how a study might make the hidden obvious; and how it might make the obvious dubious.

Make the obvious obvious. Making the obvious obvious is a matter of looking at the familiar and making us more familiar with it—fleshing it out, describing it in detail, and showing it in context. An example of this obviousness is a commonplace notion quite familiar to learners and teachers: some people participate more than others. This study takes that commonplace occurrence and gives us insight into the student considerations that are involved in their decisions to participate or not. And it shows how students might be shifting their usual positions in varying contexts. Another commonplace experience is that classes, even those with the same class plan, never quite happen in the same way. Every class has its own chemistry. This study looked at the chemistry of this particular seminar to show some of the themes that emerge from student interaction, experience, and reflection.

Make the hidden obvious. Making the hidden obvious is a matter of exploring what doesn’t always reveal itself and bringing it to light. This study did this by exploring the

interacting goods of background practices that were not obvious but that provided an explanatory context for some of the interactions and outcomes of the class. This study also made the hidden obvious by exploring how the past and future projections of students interact with the present expression of concerns, mattering, and decision-making in the classroom. For example, some of the students expressed future projections of themselves in an understated way or never expressed those projections at all. Peter mentioned only once that he was concerned about the professional curriculum design possibilities of issues of student agency and experiential learning. Charles never mentioned at all his plan to incorporate student activity into curriculum design. However, when we asked about the importance of these considerations, both participants made strong statements about what these topics meant to them. They thought about these questions almost every class period. Thus, student questions about the future showed what they thought was important. As Peter said, "It was the reason I took the class." In the end, inquiry into issues of how past and future mattered to classroom questions or how other practices interfered with or enhanced classroom participation allowed for examination and explication of issues that turned out to be important to the question-asking experience of these students, and thus important to this study.

Make the obvious dubious. Making the obvious dubious is about showing the kind of ambiguities and complexities that lurk in even the most ordinary human activities. This study showed how complex and deeply layered student participation, challenge, judgments, evaluations, and stance-taking might be. If the silence of some of the students, for example, was sometimes fear, it was also sometimes an openness to the questions of others and sometimes an expression of discontent or boredom. Sometimes that silence was also a way of questioning—as

one student suggested. Or it might constitute, for someone like Charles, an expression of approval.

This study also suggested that interactions which might cause stress for some students can be invigorating or fascinating to others. For example, one of the students in the class asked some questions that another student found very stressful for several reasons. However, another student mentioned how much she enjoyed those very same questions. Another complexity in the study arose as the students took various paths to stake out a position on a given topic or evaluate the possibilities for practical application. For example, two students took very challenging positions in class but did so for very different reasons. Harry liked challenging dialogue because he wanted to share his perspectives and persuade others to agree with his conclusions, and Jacky liked challenging dialogue because she wanted others to challenge her and help her change her perspectives.

Future Directions

As is appropriate for a hermeneutic study of this type, the findings provide some insight while at the same time suggest new research questions. Future studies could concentrate on any one of the themes and explore it in more depth, asking, for example, if there are other ways that temporal concerns show up in question-asking or if temporal concerns show up in other aspects of learning. In addition, future inquiry could usefully concentrate on the interaction of learner and teacher questions or interactions that might lead to more awareness of teaching issues. Similar studies could be conducted that explore question-asking in other practices with different goods at play.

This study focused on a graduate classroom. Studying student question-asking at different levels and in different settings might show how these issues would manifest for younger learners.

A study of undergraduates, high schoolers, grade schoolers, or preschoolers, for example, could answer some questions and raise others about the development of moral stances vis-à-vis moral goods and reference points. It would also be instructive to follow up with the participants of this study as they practice learning in other classes to learn what stances might shift and what stances might remain constant. Such a study might show the change in or development of student moral stances and the influences of new practices and goods on their choices. Repeating the same study in the same class with the same professor, although with a different set of students, would probably show a different set of thematic emphases as well. That kind of study might highlight the ways a different ecology would develop with different students from different backgrounds and with different projections. An exploration of questions in the context of different kinds of practices might raise issues about what kind of question-asking experiences nonstudents would have in a nonacademic environment, for example, in adult workplace learning settings. A nonacademic environment might tell us about the differences between the morality of question-asking to learn academically and the morality of question-asking with a more production-oriented goal.

Personal Perspectives

Mills and Morton (2013) claimed that "ethnographic work should aim to be an 'uncomfortable science" and that the ethnographer "struggles with his own inner worlds" and puts himself "at risk" (p. 4). An account of researcher discomfort and risk may constitute an important aspect of the credibility of this study. My discomfort and risk in this project surfaced in various ways over the course of the project. I became aware, even during the preliminary pilot study, that my interactions with the graduate students were providing for me an uncomfortable mirror of my own behavior. One student in the pilot study in the statistics class, for example, in

explaining the reasons that he asked few questions, explained the political makeup of the class and the learning needs of some of the other students. He thought his questions might make learning difficult for these students. His comment shocked me. I was also a student in that advanced statistics class, and even though I was the "researcher," I was not as aware of the others in class in the way he was, and never as a student had I expressed the deep moral humility and humanity he exhibited. I was revealed in not only my insensitivity to the other students but my ignorance of them. I used the word "humiliating" in my reflection journal. The experience taught me a lot about why researchers would want the safety of an objective view in which they could hide themselves behind a screen while they explored the vulnerabilities of others.

In addition to this discomfort, interacting with other graduate students asked me to confront the limitations of my own scholarly abilities. Some students in the design theory class, as well as in the pilot studies, were more capable than I was. Some were more disciplined or more well prepared. Was it possible, I asked myself, for a researcher to understand or explain the experience of someone who was broader, deeper, or more talented—just plain smarter? My journal records the question "Am I going to be able to understand what these students are saying and doing?" I backed into the position that Denzin and Lincoln (2002) had staked out: "Today we understand that the researcher is not an objective neutral observer. We know that this individual is always historically situated, never able to give more than a partial rendering of any situation" (p. xi).

In the end, I was able to confront my own limitations, and that experience grounded my personal participation in this study and, I think, added to my ability to participate in what Denzin and Lincoln (2002) called the "civic, participatory, collaborative" nature of the "ongoing moral dialogue." This positioning helped me to

establish trust from the beginning with the participants. I was inviting them into the conversation about student questioning, a topic almost everyone found personally and professionally interesting. The study was about learning from them about their experience with their own questions and checking with them within the context of every discussion about my own understanding of what they said. I established a pattern of saying, "You said this a minute ago. Did you mean . . . ?" or "In your last interview you said . . . and I interpreted that to mean . . . . Is that what you meant?" The quality of these conversations could be measured in the ongoing dialogue with the participants. When I was off-target, their body language and demeanor told me as much about my mistakes in perception as what they said. How they followed up would often be so informative. "No, no," they might say, "I think I was trying to say something like. . . ." And then they would give me additional insight into their practice and practice-based reasoning. When I was on-target, they would light up and respond with additional stories, more insight, and specific examples of what they were trying to say. It was a stimulating and affirmative experience to engage in such meaningful dialogues with these capable and thoughtful participants as we collaborated together.

In some ways our attempts to augment the standards for qualitative trustworthiness as articulated by Lincoln and Guba (1985) by grounding the interviews and triangulating the analysis were clumsy. The process involved some blind groping, some trial and error, and many back-and-forth iterations as I struggled to refine rough ideas about grounding the interviews in the transcriptions and other documents and about triangulating my analysis. However, what we ended up with may constitute one of the most meaningful contributions of the study. The "Method" chapter documents how I arrived at a structured set of protocols for the three

interviews that provided direction and rigor and that still allowed the flexibility to take the conversation in unexpected ways at the same time.

The iterative nature of the analysis from the beginning of the study was a back-and-forth process of reflecting on the general and specific as hermeneutic thinkers have suggested, but it was also a back-and-forth analysis of participants and documents, analysis of classroom interactions and interview results, analysis of classroom practices and background practices of the students and the faculty member, and analysis of group consensus and individual differences. In many ways, analysis *was* a constant triangulation of input. The process explained in the "Method" chapter could be a helpful start to someone embarking on a similar kind of study.

I believe that this moral realistic approach opened up a rich avenue for studying student practice. It showed the stances students were taking on matters of moral significance in their questions and questioning interchanges. It showed the moral conflicts in the dilemmas they experienced as a part of question-asking in the classroom. And it showed the moral nature of their inescapably temporal trajectory of growth and change. I would hope that this study would act as a challenge to reductionist ideas about questions and about learners and learning. I think this kind of study could open up new ideas about how to recognize student agency and respect student responsibility in the process of learning and teaching. Such a trajectory might open up some creative thinking about ways students could collaborate with instructors and institutions and share in the process of planning, experiencing, and evaluating their own and one another's learning.

Conclusion

Taking a hermeneutic, moral realist approach, this study explored question-asking as it unfolded in the everyday practice of learning for graduate students. It focused on the complexities of classroom practice along with its moral goods and reference points as well as the temporality of the questions students brought to class and the stances they took in relationship to their questions. This study added to the research about student questioning by providing an in-depth look at facets of questioning that have emerged in past research: student reticence in questioning, the sociality of student question-asking interactions, and the relationship of questioning to learning. However, this hermeneutic approach rendered the ordinary student practice of questioning in a new light. It offered a look at the complexity of goods that merged in the classroom from their background practices. It looked at the ways students evaluated the virtues of their questioning interactions and the importance of their questions. It analyzed student stances taken in relationship to participation in questioning, divergent questions, and questions of challenge. It included insights into how the temporality of student questions were reflected in how questions mattered to them and how questions disclosed and concealed insights to students in the process of learning. As such, this study suggests that moral realist-oriented inquiry can provide a nuanced account and range of insights regarding student learning.

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APPENDIX A

Interviewing Guide and Question Prompts

Interviewing Guide, Stephen Yanchar, June 2017

Interview 1.

History.

- Participant stories to this point
- Rationales, what mattered, why, evaluations
- Enablements
- Hinderances, struggles, complications, coping
- Underlying values

Becoming.

- How participant performances, skills, views, dispositions have changed over time
- Why there were changes over time
- The significance of those changes
- What participant values, strives for, seeks to become
- Underlying values

Interview 2.

Everyday practices.

- Discuss everyday participation in context
- Rationales, what matters, why, evaluations
- Enablements
- Hinderances, struggles, complications, coping
- Underlying values
- Gentle challenges; what would you say to someone who disagreed?

Phenomenon of interest.

- Stories
- Difference it makes, why
- Enablements
- Hinderances, struggles, complications, coping
- Underlying values
- Gentle challenges; what would you say to someone who disagreed?

Interview 3.

Demands of practice.

- What good practice accomplishes, looks like, why
- How the phenomenon fits within these demands, helps and hinders
- Underlying values
- Gentle challenges; what would you say to someone who disagreed?

Follow-up from prior interviews.

Potential themes.

Example Interview Question Prompts
Use these prompts with moral realist concepts in mind—trying to dig them out:

Practices.
- Tell me your story, how you got to this point.
- How did you get involved in _____?
- How did you find out about _____?
- What's it like to _____?
- Tell me about a typical _____.
- How do you go about _____ in your workplace, family, school, etc.?

Digging deeper into practices.
- Can you say more about _____?
- Why do you say that?
- Why did you do that?
- Describe what _____ is like.
- Can you give me an example of _____?
- A minute ago you said _____; what does that mean? Clarify?
- How is _____ related to _____?
- How is ____ better than _____?
- You mentioned _____. How does that fit in?
- What, if anything, helped you to _____? Did _____ help? Why?
- Why did you _____? (rather than _____?)
- How would you do it (or not do it) next time? Why?

Artifact querying into practices.
- Artifact: Can you show me _____?
- Artifact: Why did you do _____ at that point?
- Artifact: What did you mean when you said _____?

Complexities of practices.
- What was challenging about _____? Why?
- What, if anything, made it harder? Did _____ make it harder? How so?
- What, if anything, helped or made it easier? Did _____ help? How so?

Mattering.
- What difference did that make? Why did that matter?
- What was the significance of _____? Why were you concerned with _____?
- Was that important to you? Why?
- What were you trying to accomplish? Why?
- What does better look like? What are you striving toward?
- Why did you not _____?

Gentle challenges regarding mattering.

- What would you say to some who said _____?
- Some might argue that _____. How would you react?
- Do some people do _____ differently? What do you think about that?
- Are there other ways you could have _____?

Becoming.

- Have your views, dispositions, purposes, etc., changed over time?
- Have your skills, performances, capabilities, etc., changed over time?
- Why the changes over time?
- Are those changes significant? If so, in what ways?
- What do you strive for? What do you seek to become?

APPENDIX B

Sample Protocols for Interviews

Sample Protocol for Interview 2: Prep Sheet for Jacky

1. In Interview 1, you talked about going back to apologize to people after class. Can you tell me more about that?

2. You mentioned that you like [Harry's] challenges? Why do you like them?

3. These are excerpts from the transcripts. Are these statements connected for you?
   - 5/09, p. 17, overstatement
   - 5/16, p. 2, overreaching
   - 5/23, p. 23, why not use everyday words—desiderata

4. Can you tell me more about what you meant when you challenged these statements?
   - 5/16
   - p. 2, agreeing with [David]
   - p. 33, who's ever been in a design relation like that? Like here.

5. Were there tensions with other class members on these questions?
   - 5/23
   - p. 10, still working on this [who is she checking this out with, McDonald or others?]
   - p. 12, [lets Dennis interrupt]
   - p. 16, talking to _____ about adequate
   - p. 33, interacting with _____

6. What did you mean here?
   - 5/09, p. 48, trouble with concept/can't control outcome (Schon)

7. Were you disagreeing with other students in the class about these issues?
   - 5/16, p. 6, teaching easy if it weren't for people—expected and unexpected outcome

8. Did you feel strongly about these issues when you made these statements? Why?
   - p. 7, valuing tension like not egalitarian or hierarchical relationship
   - p. 12, question about value of research AIDS! Come on.

9. Were you challenging this vision?
   - 5/23
   - p. 32, so utopian—not real world
   - p. 38, love that distinction emergence/not vision

10. You talk about honesty here. Is this an important quality?
    - p. 39, honesty about what we care about

11. These are interesting statements. Can you tell me more about you were saying?

5/23
p. 9, holistic flux
p. 10, still working on this
p. 13, proposing metaphor
p. 14, connecting to last week's question
p. 25, encapsulating concept
p. 30, example of tithing

Sample Protocol for Interview 3: Prep Sheet for Jim

1. You have this important goal of learning about design theory in order to be part of second-language instruction conversation on learner agency. How much do you think that ontological question played a part in the questions you asked in class?
2. In our conversation about violations of the contract for learning and questioning conversations being violated, how did you manage the trade-off? Like going to iPhone or reading (like when you said you needed to save your energy for addressing the class at large)?
3. It's a power play if question is not an attempt to learn? Please respond.
4. Have you come up with any insights since our last conversation about your response to the violation of considerate question-asking practices in class? Have you thought of any other kinds of trade-offs that would have helped you more?
5. What helps you ask good questions?
6. How do you feel about questions that challenge the instructor? OK? Why or why not? When?
7. How often were your questions directed toward [Dr. Smith] as opposed to the other students in the class?
8. Role of humility in question-asking? Can a lack of humility impede your question-asking or classroom learning?
9. Does current technology affect the kinds of questions you ask? How?
10. Do you ever ask questions in order to help another student who is struggling to ask a question or be understood? Explain.
11. Do you ever ask questions to make an impression on others? Explain. Or perceive others doing so? Your reaction?
12. Your experience with being helped by other students' questions? Common? Explain.
13. Claim: Question should help tie diverse concepts together, provide a clear and final answer, achieve closure. Your reaction?
14. Claim: Helpful questions challenge ideas, assumptions, theories, etc. Your reaction?
15. Claim: Helpful questions facilitate dialogue among students and instructor. Your reaction?
16. Claim: Helpful questions challenge ideas, assumptions, theories, etc. Your reaction?
17. What does a good learner look like or do? What do you strive to become as a learner? And how do questions fit into that?