How teachers use structure-based learning in their practice:

A case study of Question Structure

by Lesley A. Elliott

A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy in Education, Department of Curriculum Teaching, and Learning, Ontario Institute for Studies in Education, University of Toronto

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Abstract

A major thrust in assessment reform is the instructional use of assessment (Ministry, 2010). Assessment for learning (AFL) has, however, proven challenging for teachers to implement (Brookhart, 2004; Swaffield, 2011; Tierney, 2006). Researchers have called for studies of classrooms that show how AFL works in practice (Bennett, 2011; Shepard, 2000). This study gathers images of practice from classrooms where teachers have been implementing a structure-based approach called Question Structure. Although a key premise of AFL is that assessment can be used instructionally to support learning, Question Structure’s constructivist-information-processing approach is rooted in educational measurement traditions usually juxtaposed to AFL theory and practice (Broadfoot & Black, 2004). Images of practice were drawn from classroom observation, teaching artifacts, and interviews from teachers who had been implementing the system for three to six years in three Ontario school boards. Data were analyzed through sub-questions emerging from the literature and through grounded theory. The study found that Question Structure supported AFL principles and practices. It also supported a Tylerian, backwards-design approach to program design, but not to excess. Technical revisions tended to evolve into significant change in practice, including program reconceptualization and increased
focus on students’ learning. The structure-based approach functioned in a variety of ways, for example to support task clarification, (re)reading and comprehension of text, writing process, open-ended collaborative work, and student-generated questions. Teachers were able to clarify the meaning of ‘structure,’ to distinguish structures from instructional and cognitive strategies, and to use universal structures and strategies as subject-specific pedagogy in Language Arts/English. The role of the technical interest and implications for professional learning are also discussed.

**Keywords:** assessment for learning (AFL), taxonomy, structures-based learning, strategy instruction, subject pedagogy, constructivist information processing, task clarification, reading comprehension strategies, informational writing, instructional design, professional learning, teacher change, teacher practice, learning strategies
To Mona, who knew the best and worst,

and

Bob, who lives in my heart of hearts
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Gratitude is the memory of the heart. ~ Jean Baptiste Massieu, translated from French

No one singly authors anything in this life, including a thesis.

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Chapter 1: The nub

1.1 Introduction and overview

Commeyras and DeGroff (1998) wrote that “there is a relationship among what people find interesting, what they understand, and what they are apt to do pedagogically” (437).

Teachers in my school board were excited about a “learning system” they referred to as Question Structure. As a staff developer, I wondered why it interested teachers and how they used it in their classrooms.

In 2003, I was seconded from a position as a classroom teacher and English Department Head, to a temporary position as ‘literacy’ consultant to support the implementation of Ministry of Education’s literacy resources in my school board. This work, which occurred as part of the Ontario Ministry’s grades 7-12 Student Success initiative, included supporting teachers of the
Ontario Secondary School Literacy Course (OSSLC) (Ministry, 2003a). This new grade 12 course provided students who had failed the high stakes provincial literacy test (OSSLT) an opportunity to build skills and obtain their literacy credential. It included the Ministry’s (2003b) Think Literacy strategy resources, and encouraged use of commercially developed professional resources (for example, Beers, 2002, and Tovani, 2000). The latter prompted us to explore a wide variety of approaches. It was during this work for Student Success that the questions driving this study emerged.

My observation, as I watched teachers work with Question Structure, was that it seemed to answer a need, capture their professional imaginations, problematize instruction, and catalyze informal professional inquiry and conversation about teaching. That is not to say that Question Structure was embraced by all—there were challenges and questions.¹ Still, I caught glimpses of colleagues’ insights and practices—snippets of possibilities. I wondered:

- How did teachers understand it?
- How did they use it instructionally?
- What difference did it make to their teaching?

1.2 Question Structure

Question Structure is traceable to “a new conception of reading literacy” (Kirsch, 2003, p. 182). This conception was central to the theoretical framework developed at the Educational Testing Service (ETS) for large-scale literacy assessments, such as the International Adult Literacy Study (IALS). According to Jones (personal communication, July 6, 2011), the “power”

¹ For example if the four structures indeed addressed the heart of all disciplines and if all learning and knowing were represented on the Question Structure taxonomy.
of this information-processing theory was such that it explained even the results of assessments for which it wasn’t designed.²

Although the purpose and context of Kirsh and Mosenthal’s original research was the development of large-scale literacy assessments,³ Mosenthal and Kirsch (1989a) expressed interest in using their research instructionally. Kirsch and Mosenthal’s article sets on document structure and strategies (for example, Mosenthal & Kirsch, 1992a⁴)—including the illustrative accounts of the inimitable Ms. Chalker—provided some indication of their thinking.

Kirsch (personal communication, July 6, 2011) indicated that one instructional application was subsequently developed by ETS and used in classrooms with some success. Mosenthal and Hardt developed the Question Structure learning system for their for-profit, educational consulting business, Performance by Design. (See Appendix A for Hardt’s description of his

The whole idea was to make a difference.
The algorithm’s intellectual property. As soon as the first contract is signed, the value of that intellectual property is the value of that contract.
Publishing wouldn’t have as much effect. We held off intentionally, incubating, so it really became intellectual property.
The real deal was: Pete would always say, “Do you know the difference this makes? Do you know the numbers of students we’re helping with this? I mean, hands-on students? Do you realize how much we’re able to accomplish in one month compared to anyone else right now?”

Hardt (2010)

²Jones (personal communication, July 6, 2011) commented that the framework explained results of the National Assessment of Educational Progress (NAEP) and the Iowa Test of Basic Skills reading components, both of which were built on a different design, indicating that the theory “capture[d] something fundamental about reading.” Kirsch and Murray (n.d.) wrote that the theory explained an “unprecedented amount of the observed variance in proficiency” (p. 14) in test takers’ responses to assessment items—over 80 per cent (Kirsch & Mosenthal, 1990a; Kirsch, Jungeblut & Mosenthal, n.d.).
⁴In addition to Mosenthal and Kirsch’s article sets, see Evetts (1996, 2002).
and Mosenthal’s work. This appendix—and the blue sidebars in this study—are poetic transcriptions of an extensive interview. ‘Pete’ is Peter B. Mosenthal.)

Simplistically put, the system consists of the following:

- a taxonomy (the Mosenthal Taxonomy, referred to as The Periodic Table of Learning in the United States)
- structures (structural elements, such as Parts, Functions and Connections; and List, Question, Agenda/Narrative, and Expository Structures)
- a question-answering strategy (The Four-Step Strategy)
- a theory of instruction and learning; that is, a theory about how particular knowledge is related to instruction and student outcomes. (See Wayne, Yoon, Zhu, Cronen, & Garet, 2008.)

The official name is the A.I.M. Learning System (A.I.M. is the acronym for Assessment, Instruction, and Management). However, Ontario teachers—who were not involved in systemic implementation of A.I.M.—referred to it as Question Structure. (See Appendix B Scope and Sequence and Appendix C The Mosenthal Taxonomy. These summarize graphically the structures and constructs.)

1.3 Performance by Design in Canada

In Canada, Question Structure has a longer history in workplace literacy than in public education. (See Appendix D: The workplace literacy—Question Structure connection.) Briefly, the learning system informed resource development, including item development for the Test of

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5 The Taxonomy is also available on the Ministry GAINS website: [http://www.edugains.ca/newsite/index.html](http://www.edugains.ca/newsite/index.html). Select Literacy GAINS, Learning Materials, Cross-Curricular Learning, and then Periodic Table of Learning.

6 In addition, Question Structure is the basis of adult learning computer-adaptive programs being developed nationally and internationally (Fownes, 2011; Hardt, personal communication, March 27, 2010). Hardt (personal communication, March 20, 2010) cited Mosenthal’s (1998) article on computer-adaptive testing as key to the development of Question Structure and indicated interest in computer-adaptive applications.
Workplace Essential Skills (TOWES) and development of workplace literacy (Essential Skills) resources (Fownes, personal communication, June 2, 2011). SkillPlan (the B.C. Construction Industry Skills Improvement Council) recently published an introduction to the question-answering strategy and taxonomy (Lew and Hardt, 2011). These publications are the most accessible and direct sources of information about Question Structure.

Use of Question Structure in these contexts, which are fundamentally different from the grades 7-12 public schooling context (Fownes, personal communication, June 2, 2011), fuelled my questions about how teachers were using Question Structure in intermediate and senior classrooms.

1.4 Provincial context

In the 1990s the Ontario government initiated standards-based reforms. A longitudinal study commissioned to evaluate the impact of the shift from a five- to four-year secondary school program, found “a pattern of apparent inequities” (Zegarac & Franz, 2007, p. 5). Specifically, the Double Cohort Studies found that the public education system did not support “the best educational interests” of all students (Zegarac & Franz, 2007, p. 5). The Ministry’s Student Success / Learning to 18 strategy, grades 7-12, sought to address these inequities—and in so doing, work towards achievement of the government’s three overarching education goals: increasing student achievement, decreasing gaps in achievement, and increasing public confidence in public education (Ministry, 2008; Ungerleider, 2008).

In addition to providing innovative program pathways to postsecondary destinations and supporting successful transitions from elementary to secondary school (Ungerleider, 2008), the strategy aimed to provide all students with foundational knowledge, skills and values, including literacy skills (Ministry, 2008). The expert panel report that launched the literacy component of
the initiative stated: “Literacy instruction must be embedded across the curriculum” and “All teachers of all subjects, from Kindergarten to Grade 12, are teachers of literacy” (Ministry, 2003c, p. 10).

Consequently, in Ontario, as in other jurisdictions, considerable resources have been directed to teacher in-service (Cochran-Smith, 2003; Cochran-Smith & Lytle, 1998; Desimone, 2009; Elmore & Rothman, 1999; Garet, Porter, Desimone, Birman, & Yoon, 2001; Guskey, 1986, 1995, 2002b; Malouf & Schiller, 1995; McLaughlin, 1990; Nielson, Barry, & Staab, 2008; Richardson & Anders, 1994; Ungerleider, 2008; U.S. Department of Education, 2006; Wilson & Berne, 1999). Initially, literacy-centered staff development focused on Ministry-created anthologies of ‘research-based’ strategies. These included Think Literacy: Cross-Curricular Approaches, Grades 7-12 (Ministry, 2003b) and a library of subject-specific examples (see http://www.edu.gov.on.ca/eng/studentsuccess/thinkliteracy/library.html#subjects). The Ministry also identified a range of commercially developed supplemental resources. In general, strategies in Ministry resources described structured activities in which students construct textual understanding using processes of productive talk, reading, and writing. The resources also included cognitive strategies, such as visualizing, making inferences, and summarizing. That is, the resources suggested that teachers explicitly teach students cognitive strategies used by proficient speakers, listeners, readers and writers (Bransford, Brown, & Cocking, 2000; Luke, 2006) and build the metacognitive strategy knowledge necessary for self-regulated learning (Bransford et al., 2000; Weinstein, Acee, & Jung, 2011).

Generally teachers’ instructional practice has been identified as a significant factor in the achievement of positive student outcomes. Ontario Ministry resources reflected this broad concern to encourage effective instructional practices believed to create effective student-
centered learning environments, particularly for students traditionally underserved by the education system (Ministry, 2008; Zegarac & Franz, 2007). In other words, the literacy focus nested within a broader agenda to obtain “improved” instructional practice, increased student engagement, and a shift to a “highly intentional focus on the learner as the focal point for the work of schools” (Ungerleider, 2008, p. 2; see also Zegarac & Franz, 2007). This focus emphasized the need to support traditionally marginalized subpopulations, including “struggling students” (Zegarac & Franz, 2007, p. 6).

1.4.1 Strategy Instruction

Support for strategy instruction dominated both the research literature (Alexander & Fox, 2004; Deschler & Hock, 2007; Duffy & Roehler, 2001; Kamil, 2003; Langer, 2004; Moore & Readance, 2001; Rohwer & Thomas, 2001; Rosenshine, 1997; Symons, Snyder, Cariglia-Bull, & Pressley, 1989) and popular professional resources (Allen, 2000; Beers 2002; Daniels & Zemelman, 2004; Fisher & Frey, 2004; Tovani, 2000; Unrau, 2004; Wilhelm & Smith, 2002). It was generally agreed that strategy instruction was effective for a range of students, for example learning-disabled as well as non-learning disabled students (Luke, 2006). Luke (2006), for example, wrote:

Not only does an impressive body of research exist with respect to strategy instruction, but that library of knowledge is also extremely broad and has direct and immediate application to practice in almost every area of the educational curriculum. The Ministry’s approach was to support ‘infusion’ of generic strategies, instructional and cognitive, into particular contexts—subjects, programs, classrooms.

Many of the strategies in Ministry and commercially produced professional resources
focused on strategy instruction for reading-to-comprehend tasks. These strategies reflected a “consensus of opinion” (“Research Supporting the Key Three Routine: Literacy Strategy Instruction,” n.d.) in the international educational research community about the effectiveness of strategy instruction to improve reading comprehension. Noels and Dole (2004) wrote:

Researchers have collected much evidence that supports explicit strategy instruction…

The teaching of strategies empowers readers, particularly those who struggle, by giving them the tools they need to construct meaning from text. Instead of blaming comprehension problems on students’ own innate abilities, for which they see no solution, explicit strategy instruction teaches students to take control of their own learning and comprehension. (quoted in Research Supporting the Key Three Routine: Comprehension Strategy Instruction, n.d.)

Numerous resources could be seen as responding to Alvermann’s (2002) statement “that comprehension is a complex process—one that should not be left to chance for its development” (p. 193), and to Kamil’s (2003) assertion that “[t]he research leads to a relatively simple conclusion: If professional development around literacy at the high school level could be conducted in a manner consistent with that described in the NRP [National Research Panel], the reading ability of students could be improved” (p. 26).

1.5 Personal context

My own classroom experience and then work with colleagues teaching the OSSLC suggested that we had additional, specific, literacy-related learning needs insufficiently addressed through comprehension strategies focused on traditional (prose) texts. One of these needs was workplace literacy. Addressing workplace literacy required knowledge about document literacy and reading-to-do tasks. While it could be argued that the revised English
curriculum in general warranted this inclusion (examples specify texts such as instructional booklets and catalogues (Ministry, 2007a, p. 59)), the OSSL in particular was exclusively focused on informational text, including but not limited to texts encountered in school. Furthermore, the OSSL was designed to correspond to tasks required on the OSSLT (see http://www.eqao.com/), which included information searches of authentic documents. The need to address matrix-format texts (Mosenthal & Kirsch, 1989a) is also pertinent to workplace destination courses and Locally Developed Compulsory Credit courses (LDCC) (see http://resources.curriculum.org/csc/library/profiles/gr9.shtml). At this time, policy regarding the credit status of LDCC courses changed and the Ministry developed Course Profile resources to support implementation of newly developed curriculum. It seemed to me that document literacy was pertinent to these contexts.

Personal experience developing resources for adult basic and workplace literacy suggested not only that reading-to-do tasks and texts significantly differed from school-based tasks and texts, but also that they are more complex than generally assumed (Evetts, 2002). Strategies such as visualizing, summarizing, and looking for transitional words didn’t map onto tasks such as using a schedule or schematic. A focus on document literacy would extend the range of texts used in classrooms to include authentic documents from work and daily life and complement traditional reading-to-comprehend prose tasks.

All of this is to explain initial interest in Question Structure and why my initial point of reference was workplace and document literacy.

I first encountered Question Structure in 2004 when OSSL colleagues and I attended a three-day workshop on document literacy called Improving Reading in the Workplace: An Information-Processing Approach. The late Peter B. Mosenthal provided this workshop to adult
basic literacy instructors—and several teachers of OSSL. In the workshop, Mosenthal focused primarily on document structure (list structures characteristic of matrix formats) (see, for example, Mosenthal & Kirsch, 1989a), and on a procedural question-answering strategy that focused specifically on document searches for reading-to-do tasks (see, for example, Mosenthal, 1996; Mosenthal & Kirsch, 1992a.)

The information on document structures and strategies seemed to complement reading comprehension resources recommending that teachers provide explicit instruction in organizational patterns and structural cues. While the “formula” for ascertaining document complexity seemed unnecessarily complicated for our purposes, it increased our understanding of the relative difficulty of documents and complemented readability formulas for prose. We speculated that this information might also be useful to teachers of workplace destination programs across the curriculum.

In the discussions that followed the workshop, however, teachers and I concluded that the question-answering strategy would be more broadly useful. For example, the analysis of questions (for example, for type of information) challenged teachers’ intuitive assessment of question difficulty and heightened their awareness of potential ambiguity. Furthermore, the strategy applied to both documents and prose, and also seemed useful for reading-to-learn and reading-to-comprehend tasks prompted by questions/directives.

Because questions are ubiquitous in teaching (Pollio, 1989; Raphael & Pearson, 1985), it seemed reasonable to assume that the strategy might be useful across programs, curricula, and grades—in other words, it seemed potentially a common focus for school staff, something that was important at the time. We (re)considered question-answering in the context of strategy

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7 For example, a science teacher, assessing whether students knew a particular formula, asked: “When do you see the tail of a comet?” She recognized the unintended ambiguity when a student replied “At night.”
instruction; that is, as a series of actions based on the cognitive processes used by proficient
users of documents to locate information (Luke, 2006). We also noted that one step of the
question-answering strategy (Match it) resembled Raphael’s (1982) Question-Answer
Relationships (QAR), which appeared to be easy to implement and effective in increasing
students’ ability to identify information sources and strategies for answering particular questions.

Mosenthal and Hardt’s strategy, however, added two dimensions: the kind of information
requested and the form of response requested by the task/question/directive, both of which
contributed to task clarity and explicitness. In other words, the strategy seemed to be more
comprehensive, multi-faceted, and precise than any other approach to questions that we knew of.

Although Porter, Garet, Desimone, and Birman (2003) argued that generic in-service and
generic strategies “did not appear to be effective” (p. 32), yet the Ministry’s focus at the time
was generic “cross-curricular” strategies. We thought, then, that this might be a strategy teachers
could add to their repertoire. Furthermore, in the reading sections of the OSSLT, students were
required to demonstrate reading comprehension (and document use) by answering questions
posed about a variety of short texts, including documents. We knew that the text-question
approach of the test was similar to that of international literacy studies, such as the *International
Adult Literacy Survey (IALS)*, which had been constructed using the theoretical framework on
which *Question Structure* was based.⁸

Finally, our experience and local OSSLT test data indicated that while students could
provide answers to questions, they often didn’t reply to the question *asked*. We believed that the
strategy would help students clarify the task (question, directive) and frame their responses. We
thought that the strategy could support students in these tasks—and if working with the strategy

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⁸ Jones (personal communication, August 19, 2011) later revealed that some of the test questions on the first OSSLT
had been modeled on IALS questions.
were embedded in content instruction, teachers could prepare students without diverting undue attention to test preparation.

So, in addition to continued work with other strategy resources, a group of us also concentrated on the question-answering strategy, using it to analyze teacher-created and commercially-produced questions, as well as explicitly teaching it to students to apply to classroom tasks and assessments. And during later work with Hardt, we began to refer to the body of work as *Question Structure*.

These experiences led to conjectures (I’ll call them ‘hypotheses’) about *Question Structure*. See Table 1.1.

Table 1.1 ‘Hypotheses’

<table>
<thead>
<tr>
<th>Hypotheses</th>
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<tbody>
<tr>
<td>- <em>Question Structure</em> could help teachers leverage the power of questions in instruction, assessment, and learning. Specifically, the Mosenthal Taxonomy could provide a framework for scaffolding questions, differentiating instruction, and assessing progress.</td>
</tr>
<tr>
<td>- While a strategy repertoire increases teachers’ flexibility and ability to support a wider range of students, sheer quantity doesn’t necessarily improve instruction. A framework and knowledge of underlying structure could make strategy use more intentional and selective.</td>
</tr>
<tr>
<td>- The taxonomic framework and “universal” structures could provide a nexus for linking various initiatives, such as assessment, literacy, differentiation, critical thinking, and informational writing.</td>
</tr>
<tr>
<td>- Universal structures and strategies might be connected to subject content and pedagogy.</td>
</tr>
<tr>
<td>- Because of its emphasis on learning, <em>Question Structure</em> could prompt teachers to rethink their beliefs about learning and therefore instruction.</td>
</tr>
<tr>
<td>- Many educational concepts solidify into poorly understood buzzwords (for example, ‘feedback’). The unfamiliar concepts and language of <em>Question Structure</em> could provide a fresh approach to concepts and prompt teachers to problematize their practice.</td>
</tr>
<tr>
<td>- Because of <em>Question Structure</em> emphasized points of reference and because analysis of teachers’ questions pointed to possible sources of confusion for students, <em>Question Structure</em> could increase teachers’ awareness of students’ perspectives and help teachers put “highly intentional focus on the learner” (Ungerleider, 2008, p. 2).</td>
</tr>
</tbody>
</table>
1.6 The research questions

1.6.1 The nub

As I thought about teacher learning in education reform, I was fascinated by one particular dimension: teachers’ interpretation and implementation of externally generated knowledge. In the case of *Question Structure*, this knowledge was theoretical and abstract, and unlike *Think Literacy* strategies, not instantiated in subject-specific examples. What were teachers learning from it? What did it look like when they made it their own? And so the overarching research question in this study was:

**How do teachers use *Question Structure* in their practice?**

My own teaching experience led me to assume that teachers were “craftspersons” who were continually “making and remaking” their practice (Lieberman & Miller, 2002, p. 95; see also Tang, 2010). I also thought that the instructional implications of the learning system went beyond adding the teaching of a strategy to students. Therefore, I thought of the overarching research question this way: What do classroom teachers *make of* (in the senses of understand and create out of) *Question Structure*? I took a psychological and cognitive approach to this question, asking what the teachers did, how they did it, and why.

Because the overarching research question assumed that learning about *Question Structure* prompted some teachers to alter their practice, I also asked:

**How do teachers believe their practice has changed?**

Embedded in this question were the following questions:

- What did they do before? What do they do now? What might they do next?
- How might this change be characterized?
1.6.2 Problems

These broad questions subsumed problems and perplexities specifically tied to the nature of Question Structure.

i. Images of practice problem

Although the overarching research question seemed to focus on what teachers did (their actions), how they did it (manner) and why (reasons), ultimately, my interest was less literal. Really, to ask “What’s happening?” is to seek an explanation and an interpretation. My purpose was to obtain some insight into teachers’ use—to conceptualize or theorize it.9

That said, conceptualizations are based on data. I wanted to know how teachers were interpreting the in-service and what they did with their interpretations. It was necessary first to gain some idea of what Question Structure looked like in practice.

• Which Question Structure components did teachers use?
• How did they use them?
• Why did they use them in this way?

I really did not know what I might find. While Hardt (personal communication, Mar. 27, 2012) said that he has a clear vision of the structures and how teachers might use them, this vision is nowhere illustrated by specific and concrete instantiations. A persistent challenge with Question Structure was describing to teachers, staff developers, administrators, researchers, and policy analysts what, exactly, Question Structure was. (Indeed, it was a challenge in writing this study.) Unpublished studies (Connor, 2008; Elliott-Johns, 2008; Kasian & Marsh, 2008; McVey, 2009) in Question Structure terms, I wanted to consider not only who (Zone 1), actions (Zone 2), manner (Zone 3), but also conditions (Zone 4), reasons (Zone 5), and themes, patterns, and procedures (Zone 6) (see Types of Information, Mosenthal Taxonomy, Appendix C). Considered another way, I wanted to understand the whole agenda (see Universal Agenda Structure, Scope and Sequence, Appendix D). And I wanted to know what Question Structure meant.

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9 In Question Structure terms, I wanted to consider not only who (Zone 1), actions (Zone 2), manner (Zone 3), but also conditions (Zone 4), reasons (Zone 5), and themes, patterns, and procedures (Zone 6) (see Types of Information, Mosenthal Taxonomy, Appendix C). Considered another way, I wanted to understand the whole agenda (see Universal Agenda Structure, Scope and Sequence, Appendix D). And I wanted to know what Question Structure meant.
2009) not only tended to assume common understanding and self-evident uses,\(^\text{10}\) but also repeatedly cited teachers’ requests for examples of what *Question Structure* might look and sound like in particular subjects, grades and programs, and in various phases of implementation.

**ii. Repertoire-coherence problem**

Strategy resources like *Think Literacy* (Ministry, 2003b) were based on the premise that teachers’ flexibility and potential effectiveness with a diverse range of students increased as teachers developed a repertoire of strategies. The idea was that teachers would select strategies from this repertoire and ‘infuse’ them into practice. However, despite claims that strategy instruction produced “incredible results” (Rosenshine, 1997, p. 4), other voices were emerging. Conley (2008a), for example, argued that educators did “not yet have the research needed to adequately understand and maximize the potential of cognitive strategy instruction in secondary content-area classrooms” (p. 84). Colleagues and I could see that the reception and impact of strategy instruction in intermediate and secondary grades was temperate. We could foresee “only … isolated changes in practice among individual teachers” (O’Brien, Stewart, & Moje, 1995, p. 442). It seemed that we also might eventually concede that “the infusion model has struggled” (O’Brien et al., 2001, p. 30).

Ironically, a source of tepid response to strategy instruction seemed to reside in the teachers’ freedom to select (or not) any strategy from a repertoire of discrete strategies—a situation that promoted the idea that all strategies were equally effective. Further, single uses of strategies didn’t have power, in the sense of effecting significant change in practice and in student outcomes. Nor were strategies systematically and persistently implemented to build coherent learning systems and trajectories. Teachers complained of too many strategies and too

\(^{10}\) This was not an unreasonable assumption, given that the studies focused on first or second year of question-answering strategy implementation.
many reform initiatives. I wondered: How could we connect these? What framework might provide coherence and structure our efforts? I referred to this as the repertoire-coherence problem.

Unlike other resources to which we had access, *Question Structure* was a system of functionally interrelated components. Hardt (2010) argued that affecting student outcomes required a coherent and integrated approach, rather than a “patchwork” of theories and strategies. He said:

> In science you have to have a theory of everything, a unified theory, and that’s … the idea of this. Let’s get a unified theory. And when Pete did the work with Irwin and Jungeblut, they were looking for a universal definition of literacy that always worked, beyond languages and contexts.

While we were leery of any single theory or approach, our limited experience indicated that any questions, including sample *OSSLT* questions, could be mapped onto the *Taxonomy*, and some teachers indicated that they were making connections to differentiation and assessment for learning, two major emphases in reform. I therefore wondered:

- Might the *Taxonomy* provide a framework for strategy selection and use, and for instruction in general?
- Might *Question Structure* contribute to coherence in practice?

**iii. Universality problem**

*Question Structure* in-service focused on ‘universal’ structures and processes. Indeed, their universality is the point. Like strategy instruction in general, *Question Structure* assumed that explicit instruction in the psychological processes and strategies people use to process information (Mosenthal & Kirsch, 1989a) could increase students’ strategic and metacognitive
control of learning processes. The premise was that *Question Structure* identified fundamental psychological structures, strategies, processes, and procedures underlying all content, subjects, grades, and contexts; and that their universality made them more useful, transferable, and powerful. Because a central premise was that the structures and strategies underlay all content, *Question Structure* in-service was not differentiated by subject, despite teachers’ requests for differentiated learning and materials (McVey, 2009, 2010, 2011a).

The literature, however, pointed to the importance of subject content and pedagogy—of attending to how students learn particular subject matter and to how teachers’ content pedagogy skills could be developed (Shepard, 1991; Shulman, 1986). Indeed, O’Brien, Moje, and Stewart (2001) wrote:

> Literacy strategies promoted by content literacy theorists will be met with varying degrees of enthusiasm based on how a particular practice meshes with ways of believing, thinking, and acting within a subject subculture. (p. 33)

This situation may be a function of the contemporary view of curriculum as consisting of particular subject domains (Carr and Kemmis, 1986), domains that O’Brien et al. (1995) critiqued as “convenient systems of artificial control rather than as positive ways to organize and teach the curriculum” (p. 448). Nevertheless, there has been a shift away from “generalizations about teaching that transcend subject matter” to “a recognition of subject matter as a pivotal context for teaching” (Grossman & Stodolsky, 1995, p. 228). Cohen and Hill (1998) found that general pedagogy was “not related to student achievement” (p. 924). Porter et al. (2003) argued that generic in-service and generic strategies “did not appear to be effective” (p. 32). Shanahan and Shanahan (2008) observed that strategy instruction (in literacy) becomes “increasingly
problematic” as students move into the increased specialization of disciplinary studies (p. 56).

(See also Alvermann, Friese, Beckmann, & Rezak, 2011; Mayer, 2004.)

I referred to this as the universality problem, and I wondered:

- What is the relation of universal structures and strategies to subject-specific content and pedagogy?

**iv. The educational measurement problem**

Hardt (2010) asserted that *Question Structure* was more about assessment than literacy. (Ah yes. I confess to having wrestled mightily to shift my point of reference accordingly.) Hardt was trained in psychology as a psychometrician (Hardt, 2010). *Question Structure* derived in part from the constructs and scales developed for the IALS, Kirsch and Mosenthal’s “profile approach,” and Mosenthal’s (1998a) article on computer-adaptive testing (Hardt, 2010). The heart of *Question Structure* is a three-dimensional taxonomy, or ‘metric’ (Hardt’s term). A central idea is the alignment of goals, instruction, and assessment—an idea that emphasizes the role of assessment in accountability (Roach et al., 2008).

Educational measurement traditions ‘behind’ these examples developed out of “a naturalist conception of the social sciences” (Moss, 1996, p. 20; see also Maling and Keepes, 1985) and was grounded in educational psychology and behaviourist learning theory (Delandshere, 2001; Shepard, 1991). I believe that, in large part, *Question Structure* reflects a measurement specialist’s thinking about the central role of, alignment of, and interactions between instruction, assessment, and learning. However, although *Question Structure* constructs derived from large-scale assessment where the purpose was measurement of learning, Hardt’s goal was to use this theory instructionally. The purpose was pedagogic: using assessment to
support learning (see Bulterman-Bos, Verloop, and Wardekker, 2003). Hardt (personal communication, May 7, 2012) wrote:

The structure-based approach is an attempt to achieve Messick's ideal of the unitary concept. That all learning and understanding has relevance, interpretability, and comparability. Although his writings were specific to the psychometric principles of construct validity, they apply to all learning.

At the time of this study, assessment reform was an international focus, and a priority in Ontario, where the Ministry of Education (2010) released a new assessment, evaluation, and reporting policy. The new policy reflected an emphasis on assessment for learning: that is, on the pedagogical use of classroom assessment to support students’ learning (Bennett, 2011; Black, Harrison, Lee, Marshall, & Wiliam, 2004; Black, McCormick, James, & Pedder, 2006; Black & Wiliam, 1998, 2009; Bulterman-Bos et al., 2003; Rust, Price & O’Donovan, 2003; Sadler, 1989, 1998; Swaffield, 2011; Wiliam, 2011). As Wiliam (2000) commented, the movement was a response to the perception that “[e]ducational assessment …became divorced from learning, and [that] the huge contribution that assessment can make to learning has been largely lost” (p. 16, in Taras, 2007, p. 368). It was also congruent with a larger shift from traditionally oriented transmission theories of learning to social constructivist theories (Taras, 2007).

However, just as Question Structure was not part of the dominant conversation about adolescent literacy, it has not been part of the current conversation about classroom assessment for learning (AFL). Question Structure seems to have originated, in part, in an antithetical paradigm (see Broadfoot & Black, 2004). My question was whether the assumptions and values associated with the field of educational measurement (Moss, 1996)—which are unpalatable to
many teachers and vulnerable to the same critiques as the naturalist sciences (Madaus, 1994; Moss, 1996)—addressed and/or supported assessment reform.

In particular, I thought it important to understand how teachers negotiated this perspective and how it problematized their practice. Bernstein (1992) wrote:

Learning to live with (among) rival pluralistic incommensurable traditions—which is one of the most pressing problems of contemporary life—is always precarious and fragile. There are no algorithms for grasping what is held in common and what is genuinely different. Indeed, commonality and difference are themselves historically conditioned and shifting. The search for commonalities and differences among incommensurable traditions … is a primary responsibility for reflective participants in any vital substantive tradition….It is our genuine encounters with what is other and alien (even in ourselves) that we further our own self-understanding. (p. 66-67, in Moss, 1996, p. 28)

I referred to this as the educational measurement problem. I wondered:

- How do teachers implement an innovation derived from the educational measurement paradigm in practice?
- To what extent does teachers’ implementation support or complement principles and practices of the current assessment reform, particularly assessment for learning?

1.7 Conclusion

In his critique of formative assessment literature, Bennett (2011) contended that both a theory of action and instantiation were necessary. A theory of action describes the what (components and characteristics), why (rationale for these), and how (ways these interact to obtain pre-articulated outcomes). Concrete instantiation illustrates what the theory looks and works in a real-life context.
To a certain extent, then, this study was driven by a desire to illustrate *Question Structure*’s instructional possibilities. Such descriptions may be useful for teachers, staff developers, administrators, and researchers involved in, or considering, *Question Structure* implementation. Such descriptions may contribute to the literature on assessment reform and on teacher learning in the context of educational change.

More importantly, though,—and this is the nub of the study—I examined teachers’ use of *Question Structure* in order to conceptualize that use. What theorizations emerge from examining these instantiations?

1.8 Looking ahead

I review the literature in Chapters 2 and 3. Chapter 2 provides a brief introduction to the construct *Question Structure*, in part by juxtaposing it with comparable educational innovations. Chapter 3 focuses on the other concepts embedded in the research question “How do teachers use *Question Structure* in their practice?”
Chapter 2: Literature review

What is Question Structure?

2.1 Introduction and overview

Undoubtedly readers understand that my research question (How do teachers use Question Structure in practice?) assumes that teachers were using something called Question
Structure. (In Question Structure terms, this is the Given Information). That said, the assumption raises the question ‘What is Question Structure?’ Because this question is not easily answered, the first part of this chapter provides a brief introduction.

Unpublished studies of Question Structure (Connor, 2008; Connor & Sadai, 2009; Elliott-Johns, 2008; McVey, 2009, 2010, 2011a, 2011b)—all of which focused primarily on the question-answering strategy—positioned Question Structure broadly as an approach to answering questions in a literacy context (reading comprehension) and assumed that what the strategy was and how teachers used it were self-evident. Below, I provide a brief description of the learning system. To clarify further and position Question Structure with respect to the literature, I then make comparisons with relevant educational ideas and innovations. These connections also provide occasion to address relevant issues/debates and to discuss (unpublished) studies.

2.2 What is Question Structure?

2.2.1 Structures

Question Structure is a structural way of thinking. Phenomena (including learning) are viewed in terms of elements, their interrelationships, and the ways elements function together in a system. As Barthes (1963) wrote, “[t]he goal of … structuralist activity” is to “manifest … the rules of functioning” (Structuralist Analysis, n.d.). (Indeed, O’Brien et al. (1995) argue that content literacy strategies generally reflect a structuralist approach “compatible with … technical rationality” and teacher control of content and incompatible with “‘situated literacy’” (p. 450).)

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11 Lew and Hardt’s (2011) Controlling Complexity: An Introduction to Question Structure is the only published material. This booklet explains the structure of questions, the question-answering strategy, and the Taxonomy—not the other structures or theory of learning.

12 The literacy context was established by the Ontario Ministry of Education, which funded the research.
A basic premise of *Question Structure* is that all phenomena from pencils to human digestive systems to philosophical theory can be analyzed (parsed) in terms of the “elements of structure”: Parts, Functions, and Connections (hereafter PFC). These three elements can be elaborated by identifying Attributes (of Parts), Manner (in which parts function), and Levels (Connections, for example to a class). This chapter might be summarized as in Table 2.1 and elaborated by describing the Attributes of each Part, the Manner in which each functions, and the kinds of innovations and Connections authors developed (Levels).

<table>
<thead>
<tr>
<th>Parts</th>
<th>Functions</th>
<th>Connections</th>
</tr>
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<tbody>
<tr>
<td><em>Mosenthal Taxonomy</em></td>
<td>Facilitate learning by providing an interpretable metric</td>
<td>Bloom’s Taxonomy (1956, 2002)</td>
</tr>
<tr>
<td><em>Learning theory</em></td>
<td>Unify theories to provide a coherent approach, rather than a “patchwork”</td>
<td>Vygotsky (Chaiklin, 2003; Wertsch, 1984), Dweck (2006)</td>
</tr>
</tbody>
</table>

Hardt (2010) called PFC the “universal theory.” No elements are more basic: PFC is irreducible. In discussion of education, then, PFC is (metaphorically) described as “the learning code” (Hardt, GAINS workshop, winter 2010; workshop, spring 2005). I have also heard Hardt refer to PFC as “the DNA of learning.” Hardt (workshop, spring 2005) suggested that teachers could use PFC to analyze curriculum.

Hardt maintained that four structures (all of which can be analyzed in terms of PFC) underlie all phenomena and classes of phenomena. The four structures are the structure of

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13 Although Hardt (2010) sketched a conversation in which he and Mosenthal identified PFC, roots of a PFC way of thinking can be seen in earlier writing, for example Mosenthal & Cavallo (1987).
questions, and List, Agenda (also called Narrative), and Expository Structures. All have simple and complex forms. For example, Character-Action-Setting (CAS) is the simplest model of Agenda/Narrative Structure. Relative complexity of constructs used in question-answering is represented by the *Mosenthal Taxonomy* (Appendix C); developmental continua for the other structures may be found on the *Scope and Sequence* (Appendix D).

Like PFC, List, Narrative/Agenda, and Expository Structures are represented graphically. Simple Expository Structure, for example, takes the form of a T-chart. Because these graphic representations are based on *structure*, rather than content, and because they are believed to underlie all phenomena, the thinking is that they can be used across subjects, drastically reducing the number of graphic organizers teachers and learners use. Metaphorically, Hardt explained that instead of using “a different cognitive remote” in each subject, learners can use a “universal remote” (workshop, spring 2005).

Structures are intended to be used strategically. In this sense, structures *are* strategies (workshop, August 2006). For example, Hardt suggested that Agenda/Narrative Structure can be used for instructional planning and for analyzing narrative text (characters’ agendas). Agenda/Narrative Structure can also be used to analyze the agendas of authors of narrative and non-narrative texts, verbal and graphic texts. Expository Structure can be used to teach essay writing (constructed response). I can draw up an Agenda for each chapter of this study—as I did generically for my own students’ Major Research Project. (See Appendix E.) I can also frame sections or paragraphs of this study using Expository Structure. A T-chart for this paragraph would look like this:

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*I use Question Structure to refer to the learning system as a whole. The structure of questions, or Question Structure, is one of the structures in that system. The italicization marks the distinction.*
2.2.2 The question-answering strategy

Hardt’s (2010) premise is that because questions stimulate thinking, questioning and the question-answering strategy are central to learning—and to assessment for and of learning. The question-answering strategy consists of four steps: reading the question, identifying the Given and Requested information in the question, matching information in the question to information in the text, and formulating an answer (see also Guthrie & Mosenthal, 1987; Mosenthal & Kirsch, 1991g; Mosenthal, 1996). These steps are summarized as follows: Read it. Snap it. Match it. Answer it.

This strategy is largely based on constructs in Mosenthal and Kirsch’s information-processing theory of reading. When Mosenthal and Kirsch examined how respondents answered questions on texts, they found that respondents matched the information in the question to the information in the document using four strategies: locating a single piece of explicit information, locating multiple pieces of explicit information, manipulating or combining information (for example with prior knowledge to make inferences), and generating relevant information. These strategies are summarized on the *Mosenthal Taxonomy* as Type of Match: Locate, Cycle, Integrate, Generate.
For example, to answer the question “How do teachers use \textit{Question Structure}?” I searched ‘texts’ (classroom observation, teaching artifacts, and teacher interviews) to ascertain the ways in which teachers used \textit{Question Structure} components. I used all Type of Match strategies to answer the question. Occasionally teachers explicitly identified what they did (Locate and Cycle). Often, I drew inferences from comparing data sources and extended my thinking beyond those sources (Integrate and Generate).

Mosenthal and Kirsch also found that in addition to using knowledge of text structure, respondents used knowledge of the \textit{structure} of questions to facilitate matching. The structure of questions refers to the identification of the two structural parts of a question: the Given and the Requested Information. In the question “How do teachers use \textit{Question Structure}?” the Given is that there is something called \textit{Question Structure} that teachers use. In other words, the Given provides specific information that focuses, or sets parameters on, the task. In my question example, the Requested Information is the manner, or way, that teachers use \textit{Question Structure}. To answer the question asked, I have to understand that “How” refers to a way. One of the \textit{Question Structure} constructs, Type of Requested Information, focuses on how information is structured; ‘manner,’ or ‘way,’ is one type of information.

Thus, strategies are based on structures—the structure of questions and the structure of information. This idea that structure and strategy are related is important in \textit{Question Structure}. Indeed, one of the central conceptual images represents the relationship of structure and strategies to content. The three are inextricably related, structure lying at the heart, content on the surface, and strategies mediating between them.
2.2.3 The Mosenthal Taxonomy

The Mosenthal Taxonomy\(^{15}\) lays out the dimensions of question-answering: information (Type of Requested Information), matching strategies (Type of Match), and processing (Type of Processing). The last of these—developed by Mosenthal and Hardt in their work in classrooms (Hardt, personal communication, March 27, 2010)—lays out how the response to the question is to be formulated, or processed. For example, is the respondent required to describe, summarize, or justify? In other words, this dimension deals with directives. For example, I asked participants in this study questions such as “Describe how you introduce PFC to your students” and “Explain how you use the taxonomy in instructional planning.”

The taxonomy is a “metric” that can be used to ‘measure’ the relative difficulty\(^ {16}\) of questions. Each dimension is scaled in an implication hierarchy from simplest to most complex.\(^ {17}\) For example, taken literally, the question “How do teachers use Question Structure?” is a Zone 3 question in terms of Type of Requested Information. Answering requires Integrating and Generating in terms of Type of Match. Because it is expressed as an

\(^{15}\) Conley (personal communication, September 24, 2010) commented that Question Structure is an example of a “taxonomic way of thinking.” Domains are conceptualized as hierarchical categories that structure knowledge of phenomena. See Mosenthal (1985) for a taxonomic approach to expository structure and Mosenthal & Cavallo (1998) for similar thinking with respect to knowledge models.

\(^{16}\) The Taxonomy consists of ordinal scales. The regular grid is not to be taken literally: the difference between Locate and Cycle is little; the difference between Cycle and Integrate significant.

\(^{17}\) I was struck in my reading by similar ways of conceptualizing complexity. See for example stratification and connections in Koopman, den Brok, Beijaard, & Teuné’s (2011) thinking about deep (information) processing (“quality of knowledge” p. 428). See also Commons’ (2008) and Commons, Trudeau, Stein, Richards, & Dause’s (1998) mathematical theory of hierarchical complexity; and Roach, Niebling, & Kurz’s (2008) depth-of-knowledge levels.
interrogative, not a directive, I need to use prior knowledge of genre to infer Type of Processing. Based on my knowledge of research studies, I conclude that the task is to Persuade—which includes all simpler types of processing (because the scale is an implication hierarchy). As Mosenthal and Kirsch’s (1993b, 1993c) work on profiling suggests, the Taxonomy could be used, not only to design assessments, but also to profile students’ responses: where do responses ‘fall’ if plotted on the taxonomy?

2.2.4 Learning theory

These components function together in a learning system. As Mayer (1996) pointed out, information processing (like behaviorism) implies a theory of learning. Based on Mayer’s historical overview of learning theories, Question Structure is most aptly described as constructivist information processing. Although understanding is socially constructed and the intelligence of the collective exceeds that of any individual, the model of learning is essentially cognitive: it focuses on the individual and on the individual’s cognition, not on “individual’s participation in social practices” (Borko, Romagnano, Knuth, & Willis, 2004, p. 69).

Hardt (2010) contended that because the information processing constructs laid out on the taxonomy keep ‘coming up behind everything,’ Question Structure is about learning, not only reading. Broadly speaking, Question Structure components might be classified as learning strategies, though they do not fit easily into commonly used learning strategies categories (for example, West, Farmer, & Wolff, 1991; Swan, 2008).

Hardt has attempted to pull together numerous theories. For example, his ‘Zones’ in Types of Requested Information point to Vygotsky’s Zones of Proximal Development (ZPD) (see Chaiklin, 2003; Wertsch, 1984) and he has also drawn on Dweck’s (2006) work on fixed
and incremental learning. As indicated in Chapter 1, key ideas derive from measurement and evaluation—for example, Messick’s (1996) thinking about washback (Hardt, personal communication, March 27, 2010) and Mosenthal and Kirsch’s (1993b, 1993c) thinking about profiling.

Hardt has also developed conceptual metaphors to explain learning to teachers. For example, he uses a ‘cognitive carpet’ metaphor to talk about limited capacity processing and cognitive load, a ‘pixelization’ metaphor when talking about brain plasticity and learning as increasing cortical density, and a Dials of Difficulty metaphor for conceptualizing how teachers and test designers can control the difficulty of each variable.

Hardt’s thinking about teaching and learning is nowhere summarized explicitly and comprehensively. However, it was immediately apparent in the study interviews that theory about learning and compatible principles of teaching were central to teachers’ use of Question Structure. These principles are discussed in Chapters 5-7.

2.3 Positioning in the field

I believe it helpful and necessary to make connections between Question Structure and prominent, relevant educational innovations. Doing so highlighted issues that pertain to Question Structure and provided opportunities to discuss Question Structure studies.

2.3.1 Structures

One of Mosenthal and Hardt’s premises is that using structures in instruction and teaching students to use structures in learning facilitates learning and improves achievement. However, the word ‘structure’ is used somewhat differently in much of the literature, making it difficult to find support for their cause-effect premise.
The idea that questions provide and request information appears in the literature (see for example, Bingham, 2008) and is acknowledged in processing models (for example, Guthrie & Mosenthal, 1987; Singer, 1990), but to my knowledge is nowhere as clearly formulated as a structure (the structure of questions) as in Mosenthal and Hardt’s work. Singer (1990) did, however, note the conceptual challenges involved in understanding questions, such as identifying the “question focus” (p. 263), which is essentially the purpose of Snapping questions in the question-answering strategy.

Singer’s (1990) componential analysis of question answering identifies components in the psychological process and how these function together. Singer’s analysis identifies steps (for example, identifying question category, selecting a strategy, comparing information in the answer to the question, formulating a response) that are roughly comparable to the steps in the question-answering strategy in Question Structure. Kirsch and Mosenthal (Mosenthal, 1998a) found that the same processing model applied to prose, document, and quantitative literacy domains. Singer notes that his analysis is a simplification that does not acknowledge non-sequential and iterative use of steps. Similarly, Hardt (2010) indicated that Performance by Design’s model is “additive”: refinements and exceptions are introduced as teacher learners master foundational understanding.

Mosenthal and Kirsch’s article sets on List Structure in documents (see for example Mosenthal & Kirsch, 1989b, 1989c), have been extensively used in workplace literacy contexts (see for example Evetts, 1996; Fownes, 1999), and for prose, document, and quantitative literacy (Mosenthal, 1998a). In the reading comprehension literature, however, lists are understood as

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18 Hogan (2006) distinguishes between componential and functional analysis. The former refers to “the distinction of the elements and operations that comprise a system—thus the parts, but also the ways in which those parts change and interact.” A functional analysis examines “why the components … are the way they are, what purposes they serve” (p. 67).
series of isolated surface (content) details, and as a weak way for readers to structure understanding (Meyer & Poon, 2004). Alley and Deschler (1979) argue that learning how to structure and restructure information (as opposed to “an endless list of facts that must be learned separately” (p. 211) is of major help to learning disabled students. They refer primarily to organizing information into categories. This conceptualization of lists lacks the structural connections of Kirsh and Mosenthal’s List Structure, which is hierarchical and possibly complex.

In the reading comprehension literature, lists are to a large extent structure-less.

It has been argued that answering questions about text “is the strongest possible demonstration” of comprehension (Lehnert, 1978, p. 47), more so even than paraphrasing or summarizing text. Hardt (personal communication, March 27, 2010) assumes that authentic questions (those closest to a learning trajectory leading to complex understandings) point to a desire to make meaning of text. Reading and learning are conceptualized as goal-oriented problem-solving—as Agendas. This may be construed as consistent with Rapp and van den Brock’s (2005) description of a constructivist perspective of reading, in the sense that readers “actively” and “strategically” try “to satisfy their search for meaning” (p. 277).

The literature has tended to distinguish between meaning making and information search and retrieval. Researchers (Dreher & Guthrie, 1990; Kirsch & Guthrie, 1984) distinguished between prose comprehension and information search, seeing the latter as “cognitively different” from reading comprehension (Guthrie & Mosenthal, 1987, p. 263). Certainly Hardt has acknowledged that search strategies (Locate and Cycle) can be examples of “cognitive fetch”

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19 An agenda is understood as an example of procedural knowledge, which is more complex than pictorial, diagrammatic, or process knowledge (Hardt, 2010). Agendas were important to Mosenthal’s thinking about literacy research and reading. See for example Mosenthal (1987a, 1995, 1999, 2002). Setting an agenda, meant specifying goals. Mosenthal (2002) saw reading research in terms of agendas and reading in terms of goals (function, or purpose). Hardt (2010) said, “If you’re setting an agenda, what’s your GUS [Goal Set-up]? You know. It’s I want to help kids. All right, but you want to help kids to be better workers? To be better citizens? To be self-actualized?”
that may not indicate understanding. Integrate and Generate strategies, however, require more complex processing. Processing is understood as transforming information into knowledge, which is characterized by connections, relevance, and understanding.²⁰

*Question Structure* has not been part of the dominant conversation about reading-to-comprehend or reading-to-learn. For example, it does not explicitly address reading comprehension issues such as genre structure, congruence between surface structure of text and conceptual structure, structure of hypertext (see for example Goldman and Rakestraw, 2000), or word-level competencies, and building prior knowledge (Pressley, 2000). I believe, however, that *Question Structure could* be linked to reading comprehension frameworks and strategies. (See discussion of QAR, below.)

Reading (comprehension) research indicates the important role of text structure in reading comprehension contexts (Englert & Thomas, 1987; Goldman & Rakestraw, 2000; Meyer, 1980; Meyer & Poon, 2004), but ‘structure’ in these studies refers to *surface* structures in (it is implied) prose texts. Generally, the focus is on content organization (methods of development, such as lists or cause and effect) and interpretation of cues (such as transition words). In contrast, *Question Structure* claims to focus on ‘deep’ structures. This focus, of course, does not preclude teachers from teaching students rhetorical structures.

There are similarities between Agenda/Narrative Structure and story grammars (Black & Wilensky, 1979; Mandler & Johnson, 1980; Rumelhart, 1980; Smith, 1986), but Hardt (2010) traces the distinction between Agenda/Narrative and Expository Structure to Bruner’s (1985, 1990) distinction between the narrative and paradigmatic.

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²⁰ Hardt’s distinction between information and knowledge differs from Feldman’s (1997). Feldman defines knowledge “as batches of information” (p. 766) and understanding as situated meaning-making.
Hardt theorized that the difference between the narrative and paradigmatic lay in structure. His thinking was that while one can ask questions and answer questions about a narrative, narrative is constituted of structural elements. In contrast, expository writing of all lengths (sentence, paragraph, and essay) is understood as framed by an explicit or implicit question. This calls to mind Dillon’s (1986) suggestion that instead of answering questions about a text, students should imagine the question to which the text is the answer. In fact, any statement or text might be construed as a response to an implicit or explicit question. Structure in the rhetorical, organizational sense of much of the literature is included in the developmental continuum for Expository Structure. (See Appendix B.)

Hardt has noted that knowledge of structure is particularly important when content knowledge is low (workshop, August 2006), an observation consistent with the literature on reading. Goldman and Rakestraw (2000) regard text processing and knowledge acquisition as a dynamic process in which readers strive for local and global coherence: readers’ knowledge of structure can help or hinder meaning making in that it is congruent or incongruent with the structure (coherence) of mental representations. While Hardt’s definition of ‘structure’ does not focus on methods of development/organization of content, I wondered if

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21 This is consistent with Mosenthal’s (1985) observation that while there was agreement about “prototypical story macrostructure” (p. 387) there was no agreement about an expository macrostructure.
Question Structure structures might satisfy both local and global coherence demands in that readers need to understand lower and higher types of information (from Zones 1 to 6, Types of Requested Information).

The closest comparable to graphic representations of PFC and Agenda/Narrative Structure I could find in the literature was graphic organizers (for example, West, Farmer, and Wolff, 1991), but the literature on learning strategies did not really address structure except as an organizing principle for content. I revisited West et al.’s frames after analyzing the data; the contrast between frames and structures is discussed in Chapter 11.

2.3.2 Raphael’s Question-Answer Relationships

i. Task clarification

As Hare (1982) noted, questions are often used to teach reading comprehension—though she conceded that most questions either prepare students to read or assess comprehension. Others similarly contended that teachers’ questions encourage readers to access prior knowledge and use comprehension strategies (Raphael & Pearson, 1982; Pressley, 2006). The implication is that questions help students process texts more deeply. A difficulty, however, is that these functions depend upon students understanding the task (question or directive)—an issue separate from whether or not they know the answer to the question.

Both Raphael’s (1982) Question-Answer Relationships (QAR) and Hardt’s question-answering strategy address this problem of task clarification. As Raphael (1982) stated, QAR was explicitly intended to support students’ reading comprehension by helping students respond to a range of question types and by increasing their control of their learning processes (Raphael, 1982).22 Similarly, Hardt’s question-answering strategy is intended to clarify the task by helping

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22 More recently Raphael (1986) has positioned QAR more broadly in the reform context, claiming, for example, that QAR can “[help] teachers guide all students to higher levels of literacy” (p. 206), address the achievement gap.
students identify what a question is asking for and how they use sources of information to find/create the answer. Identifying QARs resembles Match it, the third step in Hardt’s question-answering strategy. Both approaches require students to classify questions. As Burger and others (2001) argued, the cognitive process of classifying questions may be unconscious, but necessary for understanding questions.

**ii. Images of practice**

Raphael (1982) provided fulsome description of how teachers can instruct primary and middle-school students in QARs. Her systematic approach was built on “principles of instruction” (Raphael, 1982, p. 11), such as giving constructive feedback; building from identification of information sources to constructing responses; building from shorter to longer texts; and gradually releasing responsibility to students. Noting that teachers should adapt these instructional approaches to their own contexts, Raphael (1982) also described sample lessons, follow-up “maintenance activities” (p. 13), and acceptable variations.

In contrast, Hardt did not publish descriptions of what the question-answering strategy might look like in various grades or subjects. He did, however, provide (and has modeled use of) generic “Skillstarter” packets directed to elementary grade students—none of which teachers in this study used or recommended. That said, my own experience in workshops indicated that his approach is explicit and systematic, and incorporates the same principles of instruction as Raphael.

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identified in national literacy assessments, support changes in teachers’ instruction that move students from lower to higher-order skills, and prepare students for high-stakes testing without undermining a focus on higher-level thinking. This positioning makes explicit the technical interest that QAR serves. This positioning is similar to how Hardt positions *Question Structure* in general and the question-answering strategy in particular, although he makes no claims about developing students' literacy, per se.
iii. Differences between QAR and Question Structure

Hardt’s question-answering strategy is more comprehensive than QAR in that there are three other steps—three dimensions along which questions may be classified. The second step\textsuperscript{23} in the strategy (called ‘Snapping’) is the analysis of the question for Given and Requested information, a step not included in QAR. In this step, respondents clarify \textit{what} the question is asking for: that is, what \textit{kind} of information the question is requesting. Snapping involves understanding the meaning of ‘Requested Words’ (interrogative pronouns). The matching strategy (the third step) is built on Snapping, in that students connect information in the question to information in the text.

The question-answering strategy attends also to the constructed response—particularly with respect to directives. Raphael (1982) indicated only that students should be able to provide a complete and accurate answer to a question. Hardt’s question-answering strategy goes further, focusing on Type of Processing, for example summarizing or explaining.

In addition, the question-answering strategy leads directly to the teaching of Expository Structure, as indicated in the T-chart example (Figure 2.2), above.

iv. Integration into programs

Both Hardt and Raphael recommended \textit{integrating} the question-answering strategy into existing programs. Raphael (1982a) argued that the QAR program should be easy to merge with existing developmental reading programs, for example by exposing primary grade students to the two basic QARs and middle school students to the four specific QARs. Raphael also linked QAR to reading pedagogy. For example, ‘In the Book’ QARs are connected to reading strategies

\textsuperscript{23} The first step is reading, or attending to, the question.
such as skimming and scanning and ‘In My Head’ QARs to making predictions/inferences based on clues such as chapter headings.

In addition, Raphael and Au (2005) suggested that QAR can be connected to strategy instruction. For example, QARs are related to a **before, during and after framework**. Raphael (1986) suggested that questions prompting students to access and make predictions based on prior knowledge (On My Own) could be used for pre-reading, questions directing students to text structure or making inferences could be used for during reading (Think and Search QARs), and questions encouraging students to make connections between text and personal knowledge/experience (Author and You QARs) could be used as post-reading prompts. Raphael (1986) suggested that this overall sequence “build[s]” (p. 521) and helps teachers avoid posing too many lower-order, literal Right There QARs. She suggests how teaching QAR might be mapped across primary and middle grades.

**Question Structure** has not been connected in this explicit and systematic way to reading comprehension frameworks or strategies. Unlike QAR, the question-answering strategy is one component in a *learning system* (workshop, spring 2005). The constructs and structures all trace a developmental trajectory from simple to complex, but the particular levels of complexity have not been connected to grade levels.

While the question-answering strategy has not been systematically connected to reading strategies and to reading comprehension frameworks, it *could* be. In part, this study is about what that might look like. This study of how teachers use *Question Structure* therefore included look-for’s such as the following:

- How are teachers using the question-answering strategy to support reading comprehension?
• How are teachers using Question Structure to support writing?
• Are teachers developing using Question Structure systematically across a program?

v. Studies of student achievement effects

Much of the research on questions attempted to identify links between various kinds of questions and students’ achievement. Cotton’s (1998) review summarized general findings from this research,\(^\text{24}\) writing for example, that questioning can be more effective than lecture, that oral questions are more effective than written questions for focusing learning, that questions that focus on salient elements are more effective than those that don’t, that questions posed prior to reading support learning and achievement of older, high achieving or interested learners than of younger, average or low-achieving, or uninterested learners.

The overall focus of QAR effectiveness studies was whether students could be taught to answer particular types of questions and whether that affected achievement in answering questions. A series of carefully designed studies (Raphael & Pearson, 1982; Raphael & Wonnacott, 1985; Raphael, Wonnacott, & Pearson, 1983) examined whether proficient readers used this strategy, whether struggling readers could be taught to identify question types and to use appropriate information sources to generate answers, and whether students trained in the strategy did better than those who hadn’t been trained. Raphael’s (1982) description of teaching students QAR indicated that students should be able not only to identify (label) question types, but also correctly to “match” (p. 10) types to a strategy/task, and to provide a complete and accurate answer to the question. A similar set of studies could be devised for Question Structure, although its multiple dimensions and emphasis on multiple uses makes this more challenging.

Raphael & Pearson’s (1985) study found that QAR training increased students’ ability to identify types of questions, consistently provide an answer from the source associated with the

\(^{24}\) Linking findings like these to Question Structure might be useful to teachers.
type of question, and write better quality (complete and accurate) answers. The last finding was particularly salient for average and lower-level students, though authors hypothesized that these students also needed explicit instruction in integrating prior and text-based knowledge. The authors concluded that training increased students’ awareness of tasks demands and encouraged active processing of text (Raphael, 1982). Raphael (1982) suggested that using a shared language and making internal processes ‘visible’ contributed to the strategy’s success.

*Question Structure* has not been studied as systematically. The similarity between the matching strategy and QAR suggests that it might be reasonable to assume that explicit teaching of this step might also be effective. Nevertheless, studies evaluating the impact of teachers’ explicit teaching of the four-step question-answering strategy have not found any notable effects on student achievement.

Connor (2008) and Elliott-Johns (2008) each piloted a quantitative component using pre-post-test design. Grade 7 and 8 students wrote comprehension sub-tests of the Gates-MacGinitie Reading Test, which the consultant (Hardt) recommended as compatible with *Question Structure* constructs. No significant improvement in comprehension was found. Authors suggested that neither teachers nor students had had sufficient time to learn and practice the strategy (it was their first year of use), and that insufficient time had lapsed between pre- and post-assessments. These comments reflected awareness of Loucks-Horsley et al.’s (1998) warnings that “[i]t is foolhardy to either expect or focus on measuring student learning when teachers have just begun to learn and experiment with new ideas and strategies” (p. 222, in Desimone, 2009, p. 186). It was evident that teachers—and perhaps students—required considerable time to understand and develop a practice incorporating the question-answering strategy.
Connor and Sadai (2009) followed up with a quasi-experimental study of students in Language Arts and Science and Technology classes. Teachers were in their first or second year of Question Structure use. Researchers opted to use the Developmental Reading Assessment (DRA), already mandated in the district, as pre- and post-tests. The authors also examined report card marks for English reading and writing and for Science. All data were disaggregated for gender. Almost 1400 students from seven elementary schools were included, either as sub-groups instructed by teachers in year one or year two of Question Structure use, or as a sub-group with no known exposure to Question Structure.

The authors found no significant DRA differences for any group or interaction. They suggested the following possibilities: because the DRA comprehension component could not be disaggregated from the DRA total score, any possible differences had been averaged out; gains in student achievement lagged behind teachers’ learning and teaching of the strategy and so was not yet evident; the instrument was insufficiently sensitive to Question Structure; and some teachers had simply not yet implemented the strategy in their practice. Hardt suggested that teachers’ approach to assessment—which included generation of report card marks and assessment of DRA—may have shifted systematically, obscuring any change in achievement; however, authors were unconvinced by this argument. Study authors did find significant difference in report card grades: female students with a teacher trained in Question Structure did better in English writing and male students with a teacher so trained did better in Science. However, it is unclear that these differences resulted directly from Question Structure, which was but one of numerous variables in play—and in any case, the reliability and validity of report card grades could not be determined. As the authors pointed out, the curious thing was that

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25 The subject focus was based on the pilot study’s findings that teachers wanted time and collegial support to develop subject-specific applications.
despite these findings, teachers overwhelmingly believed that students were more successful as a result of their use of *Question Structure*.

McVey (2009, 2010, 2011), also constrained by logistics in a complex educational setting, introduced a quantitative component into her studies by examining data already collected by the school district: provincial grade 9 math and grade 10 literacy assessments; Comprehension, Attitudes, Strategies, Interests (CASI) assessments in senior public schools; and the Ontario Writing Assessment (OCA) in secondary schools; and report card grades. McVey found no effects for any of these measures. She noted that the number of uncontrolled variables and students’ strongly negative attitude towards CASI likely affected results. In addition, it might have been that none of these measures was sensitive to *Question Structure*, which is complex, and which was not in any case evaluated directly.

Elliott-Johns (2008), who focused on responses to multiple choice standardized measures, did not define criteria for assessing constructed responses. Criteria for writing better answers can, however, be inferred from McVey’s studies: all parts of the question are answered, the answer is framed by the question and addresses the question directly, the answer is not tangential or loosely related to the question; the answer does not include unnecessary information. The study did not, however, evaluate student responses against these criteria, and there is no indication whether teachers included these criteria in their own classroom assessments.

These studies were affected by a number of challenges beyond researchers’ control. First, the question-answering strategy required significant time for teachers to learn, let alone teach to students. Teachers tended to be in the first year or two of learning, and more effect may have been evident had teachers had sufficient time (for example three or more years) to routinize teaching of the strategy and integrate it into their instruction. Also, the time between pre- and
post-assessments was insufficient for this learning to occur. Secondly, the sample sizes in most of these studies were small. Thirdly, in most cases, the assessment measures were selected for convenience—that is they used data already collected in the school boards; however, these measures were not necessarily aligned with Question Structure constructs. Fourthly, the professional learning targeted teachers directly, but students indirectly through their teachers, raising the question of mediating factors such as level of implementation and proximal outcomes (teacher knowledge and practice). Fifthly, while the theory of instruction may indeed produce positive student effects, it may have been confounded with teachers’ attitudes toward, and understanding and implementation of, the strategy; it’s difficult to know which was responsible for effects, or lack of effect.

A significant difference may lie in QAR’s being implemented in primary and middle school, whereas Question Structure (in unpublished studies and this study) was implemented in intermediate and senior grades, where instruction is specialized according to program (pathway destination) and subject. In future studies, it might be advisable to break the study into smaller components as Raphael did, and profile students, seeing if they can improve specific aspects of the strategy. For example, does training in the strategy improve students’ ability to understand the requirements of various types of questions? Which Type of Match questions is each student generally able to answer? Which Type of Requested Information is the student able to provide? How many Requesteds is the student able to handle? Because the constructs form a hierarchy of difficulty, mapping where particular students ‘get stuck’ indicates what teachers might next address (formative assessment, differentiated and guided instruction). I believe Elliott-Johns’ (2008) comments about using subject-specific rather than standardized measures pointed to the
need to base such studies on a clearer understanding of how teachers use Question Structure in particular subjects, programs, and grades.

2.3.3 Educational measurement

i. Bloom’s Taxonomy

A comparison of the Mosenthal Taxonomy with Bloom’s Taxonomy highlights differences between the taxonomies and raises the issue of utility for teachers.

The problem of cognitive difficulty. It is well-known that teachers ask a preponderance of lower-level questions in classroom discussion and on tests (Gall, 1970; Goodlad, 1984; Pfeiffer & Davis, 1965; Wilen, 1982, all in Armbruster & Ostertag, 1989). A major focus in the literature, therefore, has been the use of questions to stimulate the full range of thinking processes, and in particular higher-order thinking (Raths, 2002). Many studies have attempted to establish a correlation between higher-order questions and improved cognitive processing (Armbruster & Ostertag, 1989; Martin, V.L. & Pressley, M., 1991; Wang & Andre, 1991). Despite inconsistencies (Pollio, 1989; Yang, 2006), findings favour positive effects (see Gall, 1970; Winne, 1979; Redfeld and Rousseau, 1981).

Bloom’s Taxonomy. Designing instruction or assessment to address a range of cognitive processing necessarily requires a scheme for classifying questions according to the kind and level of thinking they are believed to evoke. QARs speak to this, as well: Raphael & Pearson (1985) concluded that Text Implicit (‘Author and Me’ and ‘On My Own’) QARs are most
difficult for students, particularly low and average achieving students who may need to be taught how to integrate prior knowledge with text knowledge. There are numerous question classification systems (see Edwards and Bowman, 1996 for a review of these). However, the most well-known classification and ranking system is Bloom’s Taxonomy (1956, 2002)—which is the one to which the Mosenthal Taxonomy is most often compared.

On more than one occasion I heard a teacher ask why teachers needed another taxonomy, particularly one that is difficult to learn. Hardt (2010) believed that the Mosenthal Taxonomy addresses a significant weakness in Bloom’s. While I didn’t think this necessarily made Mosenthal’s more useful, I did wonder: Why not another taxonomy, particularly if it serves a useful purpose?

*The validity problem.* In the theoretical literature, the big question is validity—does something measure what it claims to measure? The issue is that researchers have been unable to validate either the categories or the hierarchy of difficulty in Bloom’s Taxonomy.

Accounts of the taxonomy’s development point to this problem. For example, Kreitzer and Madaus (1994) noted that Bloom’s Taxonomy was the “product of pragmatists” who needed a framework to *facilitate conversations* among college examiners (p. 65; see also Bloom, 1994; Bloom et al., 1956; Krathwohl, 2002; Sosniak, 1994; Travers, 1980). The categories were derived from those used to analyze thinking skills (Travers, 1980) and then evolved through discussion and consultation, rather than through empirical research (Hogsett, 1993). The categories were intended to reflect current thinking, be easily understood and used (Krathwohl, 1994; Travers, 1980). This is one reason why Furst (1994) argued that Bloom’s is “an inventory
of educational customs” (p. 37), and Travers (1980) that it is “a method of inventoring test items” (p. 17).

Thus, while Bloom’s is regarded “as the basic taxonomy of the field” (Travers, 1980, p. 17), it lacks a taxonomy’s theoretical base (Furst, 1994; Krathwohl, 1994; Travers, 1980). As Travers (1980) pointed out, scientific taxonomies are based on theoretical relationships among categories and experimental evidence; and they clearly identify distinctions between categories. However, because Bloom’s categories lack well-defined boundaries, educators rarely agree about the classification of items (Calder, in Kreitzer & Madaus, 1994; Postlewaite, 1994). Krathwohl (1994) wrote that the levels were “arbitrary points on what was presumed to be a continuum of increasing complexity and abstractness” (p. 190, emphasis mine).

Bloom (1994) believed that eventually the taxonomy of cognitive objectives would be empirically tested and validated by the findings on “the ‘real’ [psychological] relations among the parts. . . . [and that] would make possible a science of education. . . .” (in Krathwohl, 1994, p. 181). However, considerable efforts to validate the taxonomy—using increasingly sophisticated statistical techniques have been inconclusive (Kreitzer & Madaus, 1994), supporting Seddon’s (1978) comment:

As a final assessment of the validity of the claims concerning the psychological properties of the taxonomy, it is perhaps fairest to say that the picture is uncertain. No one has been able to demonstrate that these properties do not exist. Conversely, no one has been able to demonstrate that they do. (p. 321, in Kreitzer & Madaus, 1994, p. 77)

The 2002 revision of the taxonomy addressed the issue of a single dimension, separating Knowledge and Cognitive Processes, which are understood as qualitatively different. The conflation of knowledge and skill along one dimension was a source of frequent criticism of the
original taxonomy. While the revision may increase precision of questions based on the taxonomy, it did not address the validity issue.

In contrast, the *Mosenthal Taxonomy challenges* rather than reflects customary thinking about cognition. It *is* a taxonomy according to Travers’ (1980) criteria. The dimensions, categories, and relationship among these derived from empirical and statistical analyses. The categories were refined during work in classrooms: numerous categories were collapsed into a smaller number of distinct categories, reflecting maximum difference, accessibility and usefulness.

**The utility argument.** Despite the validity issue, authors in the Bloom’s retrospective concluded that the taxonomy has considerable utility (see Hill & McGaw, 1981; Kreitzer & Madaus, 1994; Rohwer & Sloane, 1994; Seddon, 1978, in Kreitzer & Madaus, 1994). An ERIC search found over 8,000 articles on the taxonomy since 2000. These indicated numerous applications of the framework: for example to enhance students’ learning in biology (Crowe, Dirks, & Wenderoth, 2008), to challenge students’ thinking (Vrchota, 2004), to develop critical thinking (Athanassiou, McNett, & Harvey, 2003), to develop a planning tool to differentiate curriculum (Noble, 2004), to interpret standards (Nasström, 2009), and to teach students about plagiarism (Vosen, 2008). In short, there is clearly a need for frameworks. Generally speaking, tradition, acceptance, and ease of use seem to override questions of validity (Krathwohl, 1994; Postlethwaite, 1994).

Still, Postlethwaite (1994) observed that “the Taxonomy has become a kind of dogma” that is “used blindly and sometimes written about as though it had become some kind of cast-iron
reality” (p. 174). Anderson (1994) noted that researchers make most use of the taxonomy, teacher educators some, and teachers little: “Like the weather, everyone talks about it but no one does much about it” (p. 141).

Ormell (1974) commented that it is “a disappointingly blunt instrument” (p. 3). It seems reasonable to assume that a measurement specialist would appreciate the Mosenthal Taxonomy, and that its precision could lead to sharper assessments, more efficient scaffolding of learning, and to increased interpretability. The question, of course, is whether teachers find it useful, and if so, how they use it.

Controlling question difficulty. Wilkinson and Son (2003-2009) noted that training in matters related to questioning is possible; for instance, teachers could be taught to use specific types of questions (Galassi, Gall, Dunning, & Banks, 1974), just as students could be trained to answer questions (Raphael & Wonnacott, 1985) and to generate their own questions (Commeyras & Sumner, 1998).

Bloom’s Taxonomy has been credited with heightening awareness of the possible range of learning objectives (Airasian, 1994) and of the need to address higher-order thinking (Postlethwaite, 1994). The implication was that teachers use Bloom’s as a framework for controlling the difficulty of the questions they pose and for distributing appropriately the proportion of easy and difficult questions.


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26 Bloom’s argument was that lower-order thinking skills could be learned while students were engaged in higher-order thinking. One finding in this study was that teachers believed that struggling students needed lower-order information embedded in higher-order information made explicit. Teachers believed that the Mosenthal Taxonomy explicitly depicted the entire scale of difficulty. Teachers also agreed with the argument that Bloom’s Taxonomy contributed to a devaluing of basic thinking, facts and substantive knowledge (Booker, 2008).
required teachers to compose easy, moderate, and hard questions (based on the *Mosenthal Taxonomy*). She found that teachers *could* control question difficulty and compose questions that built from easy to hard according to the *Mosenthal Taxonomy* constructs. Similarly, teachers’ reasoning about why a question was at a particular level of difficulty indicated that teachers understood assessment fundamentals, such as how test designers manipulate aspects of questions to increase/decrease their difficulty. One might hypothesize that this knowledge resulted in sharper assessments. The study did not examine how teachers used this capability in their practice.

*Instructional planning.* It was believed that Bloom’s Taxonomy could be used as a framework for systematic planning and *design*. Krathwohl (1994), for example, quoted from Bloom’s unpublished introductory remarks to the first meeting devoted to working on the taxonomy: “A taxonomy of educational outcomes … could furnish the conceptual framework around which our descriptions of educational programs and experiences could be oriented” (in Krathwohl, 1994, p. 181).

More specifically, according to Krathwohl (2002), Bloom intended that the taxonomy provide a common language, and a framework for *aligning* learning objectives, instruction, and assessment (see also Raths, 2002). Ferguson (2002), for example, described how to use the revised taxonomy as a matrix for developing integrated thematic units by entering standards (expectations) into the cells and cross-checking completed matrices for assessment and instruction. In another example, Airasian and Miranda (2002) predicted that the two dimensions in the revised Bloom’s would result in more clearly defined and focused assessments, aligned more strongly to objectives and instruction.
Criticism. Much of the criticism of Bloom’s focuses on unexamined perspectives and assumptions, many of which could also be applied to Question Structure. Sozniak (1994), for example, pointed out that the instructional planning use of Bloom’s Taxonomy was compatible with Bobbitt and Tyler’s efforts to develop a rational, scientific approach to complex educational problems. In this approach, pre-identified objectives were identified, taught, and measured. In other words, Bloom’s has been associated with a “technical” means-end model of thinking (p. 115). Sozniak wrote: “The production of the taxonomies is significant evidence of an academic mentality which utilizes technical rationality divorced from consideration of ends. Thus, what can be done and measured becomes what ought to be done” (p. 124 on p. 116). Her comments call to mind Huebner’s (1975) critique of means-end rationality:

Current curricular ideology reflects, almost completely, a technical value system. It has a means-end rationality that approaches an economic model. End states, end products, or objectives are specified as carefully and as accurately as possible, hopefully in behavioral terms. Activities are then designed which become the means to these ends or objectives. (p. 223, in van Manen, 1977, p. 209)

Question Structure’s emphasis on Agendas (rational identification of measurable goals and ways of achieving them) is compatible with this approach. Conceptually, this approach is compatible with measurement-driven instruction (Airasian, 1988; Popham, 1987). Measurement-driven instruction has been criticized for being a closed system that shifts measurement principles to the classroom (Popham, 1987) and allows evaluation to drive rather than flow from...
instruction (Airasian, 1988). Measurement-driven instruction in turn calls to mind the complex and controversial concept of washback: the use of assessments to influence teachers and students to do what they would not otherwise do (see Cheng, 2000; Messick, 1996). Cheng (2000) pointed out that washback is associated with top-down accountability measures. The issues are both ethical and technical. It is questionable, for example, whether the complex variables contributing to test results can/should be controlled to produce only positive effects. Hardt has expressed interest in washback and has wondered whether the Question Structure system, implemented, might become an example of washback at the classroom level. He made this point explicit in an “unofficial” title to one of his workshops.

A related criticism is that Bloom’s ignored the issue of values implicit in the taxonomy masquerading as “objective and scientific determination” (in Sosniak, 1994, p. 115; see also Furst, 1994). Hardt (personal communication, March 27, 2010), too, appealed to the neutrality of “science” and strove to keep debate about Question Structure “a-political.”

Finally, Bloom’s has been criticized for promoting a limited conception of thinking and of education (Furst, 1994; Ormell, 1974). Ormell argues, for example, that the taxonomy omitted “the imaginative use of information in recreating relations” (in Furst, 1994, p. 33). Furst (1994) argued that it did not capture “the essential characteristics of an educated person: that he or she possess a rational, connected view of the world” (p. 34, emphasis mine). Hogsett (1993) argued, furthermore, that Bloom’s failed to recognize women’s ways of knowing, such as silence and integration of knowledge into Self. Hardt also equated learning with cognitive processes. While it might be argued that there is space for imaginative connection, intuition, and creativity within the framework, there is no consideration of other ways of knowing. In fact, analysis of Hardt’s
and teachers’ interviews revealed that visual references and images—which are conventionally associated with rationality and cognitive understanding—dominated.27

Thus, on the one hand, the Mosenthal Taxonomy is vulnerable to the same kinds of criticism as Bloom’s. On the other hand, while Bloom’s is a taxonomy of educational objectives, the Mosenthal Taxonomy is a taxonomy of processes. While Bloom’s lays out a (presumed) cognitive hierarchy, Mosenthal’s breaks out ‘steps’ in three possible ‘directions.’ These differences suggest that teachers may be less likely to confuse objectives with activities (Raths, 2002). In addition, given that students “have an innate tendency to reduce the cognitive load” (Merrill, 1971, in Raths, 2002, p. 237), the taxonomy may help teachers identify the point at which students are performing in relation to the intended cognitive level.

2.3.4 The instructional use of assessment

Introduction. Instruction, assessment, and management have traditionally been regarded as distinct aspects of practice (Brookhart, 2004; Shepard, 2000). Shepard (2000) traced this separation to the first half of the twentieth century when measurement was tied to behaviorist and mastery theories of learning and the primary purpose of assessment was the evaluation of students’ learning in order to sort and select. As such, assessment was strongly tied to notions of measurement, including quantification and comparison.

The Ontario Ministry of Education’s (2010) new assessment, evaluation, and reporting policy emphasized that the “primary purpose of assessment

27 Indeed, I was struck by the complete absence of bodily, auditory, or kinesthetic references in the texts, and realized that Hardt uses sound and movement only to make learning “sticky” when teaching.
and evaluation” (p. 6) is instructional: to improve students’ learning. The policy reflected international developments in assessment, such as those spearheaded by the Assessment Reform Group (ARG) in the United Kingdom. It built on reforms initiated in Ontario in the 1990s that fore-grounded, for example, the difference between formative and summative assessment.

Hardt (2010) has asserted that Question Structure is about the instructional use of assessment. Thus, in examining teachers’ use of Question Structure, I am examining if/how teachers’ use of Question Structure is compatible with assessment reforms identified in relevant research and in the government’s policy document.

Assessment for learning. Assessment for learning (hereafter AFL) is the preferred term in Ontario and in the literature for the instructional use of assessment.28 The function of formative assessment is to provide learners with information to guide their learning (and, in the words of Zegarac and Franz (2007) “put intentional focus on the learner” (Ungerleider, 2008, p. 2)). AFL refers to the learning and teaching “process” (ARG, 2002, emphasis mine) of providing that information. The influential Assessment Reform Group (ARG) (2002) defined AFL as follows: “Assessment for learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there” (italics mine). The Ontario Ministry (2010) described AFL as follows:

Assessment is the process of gathering information that accurately reflects how well a student is achieving the curriculum expectations in a subject or course. … As part of assessment for learning, teachers provide students with descriptive feedback and coaching for improvement. (p. 28, emphasis in original)

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28 Some, particularly in Europe, use AFL and ‘formative assessment’ interchangeably (for example Bennett, 2011). Other variations, such as ‘formative evaluation’ are evident (for example, Perrenoud, 1998). Swaffield (2011) distinguishes between AFL and formative assessment.
The document went on to point out that AFL includes assessment as learning, which focuses on teaching students “to set individual goals, monitor their own progress, determine next steps, and reflect on their thinking and learning” (p. 28). Thus AFL is closely tied to self-regulation, one of the Learning Skills and Work Habits, in which the student:

- sets own individual goals and monitors progress towards achieving them;
- seeks clarification or assistance when needed;
- assesses and reflects critically on own strengths, needs, and interests;
- identifies learning opportunities, choices, and strategies to meet personal needs and achieve goals;
- perseveres and makes an effort when responding to challenges. (p.11; see Table 2.2 for a summary of description of AFL, p. 56).

As these definitions suggest, continual feedback is important to AFL. The interest in feedback was stimulated by Black and Wiliam’s (1996) review of the formative assessment literature, which was commissioned by the Assessment Reform Group (ARG), and generally agreed to be seminal. The authors’ conclusion was that frequent feedback resulted in notable increases in learning.

According to Sadler (1989), feedback theory emerged out of learning theory. While standardized and psychometric tests were anchored in behaviourist learning theory, AFL practices were anchored in social constructivist theories of learning. The etymological roots of the word ‘assessment’ are frequently alluded to—as they were by Swaffield (2011)—to provide a conceptual image of AFL. Metaphorically, to assess is to ‘sit beside’ a student, suggesting a non-traditional relationship and role for teachers and students. Teachers and students engage in a dialogue (sometimes referred to as ‘assessment conversations’) focused on ongoing assessment
and feedback. Thus, instruction and assessment are concurrent and almost indistinguishable (Shepard, 2000). As the Ministry (2010) policy advised, teachers need to “plan assessment concurrently and integrate it seamlessly with instruction” (p. 28). This relationship reflects the conviction that there is a “crucial link between assessment, as carried out in the classroom, and learning and teaching” (p. 1, in Shepard, 2000, p. 13), all three of which need to be closely aligned.

There exists a small but pointed body of criticism (Bennett, 2011; Dunn & Mulvenon, 2009; Perrenoud, 1998; Taras, 2007). For example, in a critical review, Dunn and Mulvenon (2009) argued that conclusions about the effectiveness of AFL are built on a “limited body” (p. 1) of evidence. This criticism was echoed by Bennett (2011), who, in a close critical analysis, referred to the data as “suspect” (p. 5). On the other hand, Shepard (2000), noting numerous studies on the effects of feedback and inconsistent results, observed that because studies’ designs were based on out-dated behaviorist theories of learning, they didn’t actually examine AFL, which is based on constructivist theories. These critiques don’t appear to have staunched energies directed to AFL.
Table 2.2 Summary description of AFL

<table>
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<th>Key principles</th>
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<tr>
<td>- Assessment is used instructionally to support student learning. Assessment and instruction are concurrent, seamless, and aligned.</td>
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<tr>
<td>- Assessment practices are congruent with constructivist theories of learning.</td>
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<td>- Assessment practices support the learning of all students (principle of equity).</td>
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<td>- Assessment is clearly communicated (principle of transparency).</td>
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<tr>
<th>Practices</th>
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<tr>
<td>- Build common understanding of learning goals and criteria.</td>
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<td>- Gather information about student learning, at each stage of the learning process, using a variety of strategies, such as questioning and classroom discussion.</td>
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<tr>
<td>- Use professional judgement to make wise decisions about what to do next.</td>
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<tr>
<td>- Provide specific and timely feedback: information that helps students take the next step to improve their understanding or skill.</td>
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<tr>
<td>- Help students develop skills in peer and self-assessment.</td>
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<td>- Differentiate judiciously.</td>
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<th>Practice</th>
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<tr>
<td>- The teacher has conceptual understanding of AFL, for example as a system to develop self-regulation.</td>
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<tr>
<td>- Understanding avoids misconceptions, for example that AFL is about measurement, frequent testing, or tight learning sequences.</td>
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<tr>
<td>- Assessment is pervasive, shaping all aspects of teaching and learning.</td>
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<tr>
<td>- The classroom is characterized by a culture of learning and inquiry.</td>
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<td>- Assessment conversations are dialogic and include interrogation.</td>
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<td>- The teacher’s role is guide and coach; students become their own teachers.</td>
</tr>
<tr>
<td>- Implementation is deep (not superficial or mechanical).</td>
</tr>
<tr>
<td>- Assessment is humanistic (not bureaucratic).</td>
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**Implementation studies.** As Swaffield (2011) noted, Black and Wiliam’s (1996) review was followed by two important implementation studies, Black et al. (2002, 2003) and James et al. (2007). A considerable body of literature now exists (Bennett, 2011; Black et al., 2004; Black et al., 2006; Black & Wiliam, 1998, 2009; Bulterman-Bos, Verloop, and Wardekker, 2003; Sadler, 1998; Swafffield, 2011; Wiliam, 2011).
In a recent example, Suurtamm, Koch, and Arden’s (2010) Curriculum Implementation of Intermediate Math (CIIM) study provided descriptions of AFL practices in intermediate mathematics classrooms in Ontario. The study asked what practices grades 7-12 mathematics teachers were using that were congruent with assessment “messages” in curriculum documents, which had been analyzed for correlation with assessment and mathematics education literature (p. 402). Drawing on questionnaire and case study data, the authors found that teachers were using a variety of broad assessment strategies—including questioning, self-assessment, feedback, and “unique forms of quizzes” (p. 399)—to examine students’ mathematical thinking and improve their learning. The authors also found that assessment and instruction were integrated, that teachers were addressing complex mathematical thinking, and that assessment was being used to support that learning.

As Shepard (2000) pointed out, most studies (in contrast to Suurtamm et al.’s study) focused on specific aspects of AFL, such as the following:

- feedback practices of expert tutors, such as ignoring errors, forestalling errors, debugging, and intervening (Lepper, Drake and O’Donnell-Johnson, 1997);
- student self-evaluation (Klenowski, 1995);
- the effects on students of distorted AFL practices (Sadler, 1998).

Shepard (2000) argued that there was need for “studies in classrooms where instruction and assessment strategies are consonant with this [AFL] model” (p. 12) because, despite theoretical and empirical studies, it is not known how this social-constructivist view of classroom assessment “will work in practice and on a larger scale” (p. 12). Although the literature identifies AFL practices, such as student self-assessment, these are not specific: there are few images of practice, particularly examples that situate practices in particular subjects. Bennett (2011)
predicted that the absence of “well-defined … artefacts or practices” (p. 5) means that implementation and effects on student learning would be inconsistent. In his critique of formative assessment literature, Bennett (2011) contended that both a theory of action and instantiation are necessary. The theory of action describes the what (components and characteristics), why (rationale for these), and how (ways these interact to obtain pre-articulated outcomes). Concrete instantiation illustrates what the theory looks and works in a real-life context. In this study, I have therefore considered teachers’ practice in terms of what, how, and why, as illustrated in Figures 2.3 and 2.4:

**Implementation challenges.** Researchers observed that AFL has proved tremendously challenging for teachers to implement (Brookhart, 2004; Swaffield, 2011; Tierney, 2006). Some of these challenges pertain generally to reform (Shepard, 2000; Waks, 2007), others

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29 In *Question Structure* terms, this can be configured as a Zoom Strip. See Appendix F.

Tierney (2006) argued that a key problem is the focus is on AFL practices instead of on practice. This argument is particularly relevant to this study, which considers practice as a totality (see Chapter 3) and the quality and quantity of change. Tierney’s argument was that AFL implementation requires teachers to rethink fundamental aspects of teaching, such as student and teacher roles, their theories of learning, and the relationship between instruction and assessment. Shepard (2000) made a similar argument, when she commented that AFL is about creating a “culture of learning” (p. 10). In other words, it is necessary “to change the social meaning of evaluation” so that assessment, as a cultural practice, is regarded “as a source of insight” (p. 10). Commenting on the North American emphasis on feedback, Perrenoud (1998) wrote that feedback is but one aspect of AFL practice. He suggested that AFL be conceptualized as a system supporting development of students’ self-regulatory learning, in which feedback is one component.

Brookhart (2004), Swaffield (2011), and Taras (2007) argued that the success of a teacher’s implementation of AFL, which is built on constructivist theories of learning, depends upon the teacher’s theories of learning. Swaffield (2011) suggested, for example, that belief in incremental learning (as in Dweck, 2006—whose work is an influence on Hardt) would support AFL, whereas belief in behaviorist theories would distort AFL.
Inadequate theoretical conceptualization was also a persistent theme in the literature (Brookhart, 2004; Delandshere, 2001; Perrenoud, 1998; Shepard, 1991). Commenting on the articles in the special issue of *Assessment in Education*, Sadler (2007) admitted to “despair”:

In my heart of hearts, I believe that a blinkered conceptualization of curriculum the strong trend towards, fine-grained prescription, atomized assessment, the accumulation of little ‘credits’ like grains of sand, and intensive coaching towards short-term objectives, are a long call from the production of truly integrated knowledge and skill. (p. 392)

Researchers have identified significant misconceptions and distortions in practice from fidelity studies of AFL. For example, Klenowski’s (2009) editorial in the special AFL issue quoted in full a position statement from the Third Assessment for Learning Conference on AFL that called attention to “misunderstanding of principles, distortion of the practices, that the original ideas sought to promote” (p. 263). These are attributed both to ambiguous definitions in the literature and to mechanical implementation. For example, the where-students-are, where-they-need-to-go, and how-they-can-get-there framework has been interpreted as an injunction to assess students’ attainment of pre-determined and tightly sequenced learning objectives in frequent summative testing (Klenowski, 2009; Swaffield, 2011). In another example, Torrance (2007) argued that AFL can be misinterpreted as strategies intended to help students obtain a good grade.

In part, the issue is that AFL is not so much a *technical* issue as it is a “social” and “humanistic” one. Broadfoot and Black (2004) wrote that “educational assessment must be understood as a *social* practice, an art as much as a science, a humanistic project with all the challenges this implies and with all the potential scope for both good and ill” (p. 8). Broadfoot and Black (2004) expressed concern for assessment as a *practice*, as a *totality* that
embraces every aspect of assessment in its concern with delivery, for it is the thinking, the habits, the technologies and the politics of a particular age and time that combine to shape the assessment practices that are realized in schools, colleges and universities, in workplaces and in less formal learning environments. (p. 9)

They speculated that eventually the assessment could “define and shape every aspect of educational life” (p. 10) and make “significant” (p. 22) contributions to social reform. They wrote:

The shift towards what Habermas has termed “emancipatory rationality,” with its focus on the human potential for self-realization and creativity rather than on the hermeneutic rationality of data, systems and bureaucracy, encapsulates both the nature of the challenge that confronts us and the potential reward that awaits its successful resolution. In a world in which human beings find themselves increasingly cut off from well-defined norms, community support and collective goals, it becomes increasingly necessary to find ways of helping them to be able to define themselves as individuals and to cope with managing their own learning and work careers. (p. 22)

**Juxtaposition of educational measurement and assessment for learning.** Generally, educational measurement is unfavorably juxtaposed to AFL. Fitzmaurice (2010), critical of contemporary emphasis on performativity and accountability, contended that this “culture of measurement [has] influence[d] how we think about teaching” (p. 45; see also Levin & Clowes, 1991). Broadfoot and Black (2004), in their editorial introduction to the tenth-year issue of Assessment in Education, wrote:

In very truth, we have become an “assessment society,” as wedded to our belief in the power of numbers, grades, targets and league tables to deliver quality and accountability,
equality and defensibility as we are to modernism itself. History will readily dub the 1990s … “the assessment era,” when belief in the power of assessment to provide a rational, efficient and publicly acceptable mechanism of judgement and control reached its high point. (p. 19)

At the same time, the literature speaks of a transformation in thinking about assessment. Broadfoot and Black (2004), for example, are critical of contemporary concepts of assessment that promise accountability, predictability, and washback. They ask: “Is it now time for the emergence of a new assessment paradigm born of the very different epistemologies and needs of the twenty-first century?” (p. 22).

**Question Structure and AFL.** The instructional use of assessment, which is central to Hardt’s thinking, can be traced to Mosenthal’s (1998) “Defining prose task Characteristics for Use in Computer-Adaptive Testing and Instruction,” which Hardt identified as a catalyst for development of *Question Structure*. In computer-adaptive instruction and testing, where benchmark tasks “are embedded in a curriculum,” testing “does not stand out as a separate activity” (p. 270). Such programs are responsive to students, providing feedback and intentionally building from where the students are. The idea is that, informed by such principles and knowledge, teachers can improve instruction.

The question is: With its origins in educational measurement, is *Question Structure* able to support the new AFL paradigm? Does *Question Structure* enable teachers to implement assessment for learning? Is it essentially a technical or humanistic project?

**2.4 Looking ahead**

Chapter 3 focuses on other concepts in the research question: teacher in-service, change, use, and practice.
Chapter 3: Literature review: Conceptual context

3.1 Introduction and conceptual overview

This chapter positions Question Structure with respect to the literature on teacher in-service, teacher change process, implementation of research products, and teacher practice. These concepts are inherent in the research question “How do teachers use Question Structure in their practice?”

Discussion of in-service helps better understand Question Structure because it is only available to teachers through Hardt’s (for-profit) in-service. In part, this study examines what teachers make of externally generated knowledge. Nevertheless, uses of Question Structure in particular contexts (including subject contexts) is not defined in a program or similar product, but rather ‘lives and grows’ in an ongoing, dynamic relationship between Hardt and teachers.

My research question assumed that teachers change as a consequence of Question Structure in-service. In other words, I assumed that teachers’ implementation of Question Structure provided evidence of change, that their practice differed. Just as the quality and quantity of change needs to be defined, so do conceptualizations of implementation, or use. Furthermore, how we think about implementation is tied to how we conceptualize teachers’ practice.

Figure 3.1 (next page) provides a conceptual overview of this chapter.
3.2 Teacher in-service

3.2.1 Introduction

(Unpublished) studies of Question Structure in-service were exploratory feasibility studies that examined teachers’ perceptions of the in-service (content and form). Overall, teachers found the in-service to be of exceptional quality, though challenging (Elliott-Johns, 2008; Kasian & Marsh, 2008; Connor, 2008). This overall assessment did not, however, preclude
considerable criticism and suggestions for improvement, such as attention to uses in particular disciplines.

Because these studies focused on teachers in their first year of Question Structure in-service, their use with respect to this study’s conceptualization was limited. Below, I briefly discuss two frameworks helpful in understanding Question Structure, and in particular in characterizing how teachers mediate and build on knowledge generated outside of practice and presented in in-service. The first of these is the Habermasian notion that the social sciences are bound to three classes of human interest: the technical, the practical, and the critical. The second is Benne and Chin’s (1984) change management model (in Miles & Thangaraj, n.d.).

### 3.2.2 Habermasian framework

Bloomer and James (2003) contended that various kinds of educational research offer different “opportunities” for practice (p. 247). They juxtaposed two broad conceptualizations of educational practice, which they termed the “technical” and the “practical.”

Broadly speaking, in practice described as technical, practitioners apply research knowledge (theory) generated outside of practice. In practice described as practical, practitioners construct knowledge through participation in action research, where knowledge generation and learning occur in practice (see Figure 3.2, next page). In some ways, Bloomer and James’s distinction aligns with Garet et al.’s

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30 Bloomer & James (2003) do not consider the critical, which they understand as emerging from the practical. See also Carr, 1986; Carr & Kemmis, 1986.
between “traditional” and “reform” orientations in in-service (see Nesmith, 2008). This broad distinction is also congruent with two epistemologies and conceptions of learning: the rationalist and constructivist (Gaudelli, 2001), and with two types of learner: fixed and incremental (Dweck, 2006, in Nelson & Harper, 2006).

Bloomer and James used this juxtaposition to describe and position their action research project. As a way of conceptualizing two common relationships between research, teacher learning, and practice, this juxtaposition is helpful. However, although Question Structure is in many ways aligned with the technical, it did not tuck as neatly into that category as might appear. I believed this important to understanding teachers’ use of Question Structure: while teachers were initially positioned as recipients who applied externally generated knowledge, they eventually generated local knowledge. This was consistent with the literature suggesting that the technical could evolve into the practical, and the practical into the critical (Carr, 1986; Carr & Kemmis, 1986) and literature suggesting that exposure to others’ theories can evolve into theorizing (McDonald, 1986). This had implications for the kinds of changes teachers might make in their practice, and for professional learning—particularly for those who might dismiss Question Structure as a top-down imposition of technical rationality.
3.2.3 Change management framework

A similar situation arose with respect to Chin and Benne’s (1984) change management model (in Miles & Thangaraj, n.d.). In their review of the teacher education literature, Richardson and Placier (2001) used this model to identify three types of individual/small group change. (See Figure 3.3, below.) The empirical-rational and normative-reeducative models corresponded roughly to Bloomer and James’ technical and practical categories. Question Structure is strongly aligned to the rational-empirical.

That said, as in the normative-educative model, teachers in this study seemed also to have persisted with Question Structure to satisfy their own needs and interests (personal growth) and to address pedagogical problems. Hardt’s role gradually became more consultative.

This Question Structure ‘evolution’ was a function of numerous factors:

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31 Richardson and Placier’s distinction between organizational and individual/small group change is roughly analogous to Gersten et al.’s (2000) distinction between structural change (focusing on non-instructional issues) and “core-of-teaching” change (focusing on instructional practices in reading, writing, mathematics and science) (p. 447). Their distinction also speaks to Hargreaves’ (1994b) contrast between re-structuring education (from the outside) and re-forming education (from the inside).

32 The power-coercive model is not pertinent to this study, except as background context—specifically legislative and policy changes during the 1990s.
• the in-service being neither systemic nor mandated. Although participating teachers were invited (‘tapped on the shoulder’) to participate, participation was voluntary;

• Hardt’s belief in the collective and his willingness to engage in ongoing agenda-setting and dialogue;

• the complexity of the learning system, which required considerable time to learn;

• the non-prescriptive and non-subject-specific nature Question Structure, which compelled teachers to make connections to their subjects, to system initiatives and directives, and to official curriculum;

• teachers’ own dispositions and ability to engage long-term in implementation.

3.2.4 Agenda problems

Generally speaking, the empirical-rational model refers to a system in which teachers are the objects of change; the normative reeducative model refers to a system, in which teachers initiate change. The former aims to provide certainty through science; the latter to build self-efficacy through “membership in some strong professional community” where teachers socially construct understanding, examine assumptions, and reflect on practice (McLaughlin, 1994, p. 33, in Gersten et al., 2000, p. 451).

Several researchers have attempted to overcome this dichotomous way of thinking. Richardson and Anders (1994), for example, attempted to involve teachers in building their professional learning agenda. Still, the implication is that, ultimately, the “dialogue” was intended to change teachers’ beliefs and have teachers implement research-based ideas about practice (teachers are objects of change). The same is true of Lester and Onore’s (1990) study, even though the goal (eventually) was to help teachers develop “their own philosophies of instruction” (p. 17). Hardt, too, attempted to address this agenda-setting dilemma (Richardson,
1992), inviting teachers to participate in agenda-setting and encouraging them to develop uses to serve their own purposes. While I observed Hardt work with Ontario teachers, it was clear that the fulcrum was neither the content nor form of the in-service, but rather Hardt’s pedagogical relationship with particular groups of teachers. As Lester and Onore (1990) observed about their own work, the process was not replicable.

Using Derrida’s interpretation of Kafka’s story “The Law” as a metaphor, Bingham (2008) argued that educational authority derives—not from a thing hidden beyond the doorway—but from unique interpersonal encounters (I believe Hardt would say “transactions”) on the ‘threshold.’ This is consistent with Franke, Carpenter, Fennema, Ansell, and Behrend’s (1998) finding that teachers’ use of professional learning depended on whether they regarded the content as fixed information to be applied, or as frameworks for inquiry. This finding is discussed further, below.

3.3 Teacher change process

3.3.1 Introduction

The literature tends to approach teacher change process either from the perspective of system reform or from the perspective of individual teachers. Hardt (workshop, winter 2010) positioned Question Structure as potentially serving multiple agendas, each having a different point of reference. This study conceptualized teacher change from the perspective of the teachers.

3.3.2 Linear model

The systemic approach can be represented as in Figure 3.4 (next page), which I adapted from Guskey’s (1986) model.
This model implies that providing teachers with the right (correct) knowledge can right (alter, in the sense of correct or improve) practice.³³ Researchers have problematized aspects of this model. For example, Guskey (1986) himself partially addressed the ‘black box’ of teacher change by including teachers’ beliefs (which may follow rather than precede a change in practice). Still, the model views teacher change from the perspective of external change agents. This is evident from professional literature directed toward administrators or staff developers (see for example Hunzicker, 2004).

3.3.3 Ecological model

Clarke and Hollingsworth’s (2002) ecological change model emphasized the individual teacher’s perspective. Theirs was a learner-centered, not end-oriented, model of the teacher’s perceptual world. Their model acknowledged that teachers mediate the implementation of innovations (Eisenhart, Shrum, Harding, & Cuthbert, 1988; Olsen & Kirtman, 2002) and that their learning is complex, situated, non-linear, and messy (Kennedy, 2005).

External sources of information and feedback (External Domain) and salient outcomes (Domain of Consequence) are two dimensions of the teacher’s experience. Teachers dialogue with the consultant and colleagues, interpret theory in light of their own theories, experiment

³³ According to Gersten et al. (2000), during the 1960s and 1970s, ideas about practice were derived primarily from studies of effective classroom teaching. In the current cycle of reform, innovations are drawn from educational research modeled on the natural sciences (See, for example, Eisner, 1998; Maling & Keepes, 1985). Question Structure is an example of the latter.
with new approach, reflect on and theorize their practice, and generate knowledge. (See Figure 3.5, below.)

Figure 3.5 Ecological model of teacher change process incorporating Question Structure (adapted from Clarke & Hollingsworth, 2002)

This study focused on the Domain of Practice (actions) and the Personal Domain (lines of thinking), which together reflect Bennett’s (2011) thinking about instantiation and is consistent with Nespor’s (1987) that it is generally “accepted … that teachers’ ways of thinking and understanding are vital components of their practice” (p. 317). (Study participants, of course, referred to student outcomes (Domain of Consequence) and in-service (External Domain) because these influenced their thinking and actions.) In this view, teacher beliefs—“personal philosophies (often implicitly held) consisting of conceptions, values and ideologies” (Aguirre & Speer, 2000, p. 332)—are germane to an examination of what teachers do. This study assumes that how and why are intimately related.

My focus here is psychological and cognitive rather than situated (Borko et al., 2004). My approach to the Personal Domain was global. I considered lines of thinking as including
knowledge, belief, affect, value, and attitude. That said, I found Pajares’ (2002) review and various frameworks helpful. For example, Aguirre & Speer (2000) suggested four categories of beliefs (“belief bundles,” p. 333): beliefs about affect, the discipline, teaching, and learning. Yerrick, Parke, and Nugent (1996) noted that “teachers use relatively few constructs to make sense of their practice” (p. 139) and that “teacher control” was most pertinent to shifts from traditional to reform-oriented instruction. After reviewing the literature, Eisenhart et al. (1988) grouped beliefs into three domains: high responsibility, expertise, and control; problematic responsibility, expertise, and control; and low responsibility, expertise, and control.

This expanded conceptualization of practice is discussed below.

3.4 Notions of use

3.4.1 Introduction

By teacher use I meant teachers’ implementation of Question Structure. In the literature, there seemed to be three ways of thinking about implementation: in terms of fidelity, stage theories, or orientation.

3.4.2 Fidelity

Implementation studies often conceptualized ‘use’ in terms of fidelity—that is, in terms of the degree of correspondence to an original (Gall, 1977). In these studies, then, change usually meant accurately adding to or substituting new practices for existing practices, or modifying existing practices to replicate new practices (McLaughlin, 1990). Since the landmark RAND study, it has been recognized that implementation is characterized by “mutual adaptation” (McLaughlin, 1990), in which both the innovation and teachers’ practice change. In other words, it is crucial to attend to the influence of the implementation context as well as to fidelity. Schoenfeld (2006), for example, argued that studies “must try to indicate the character of the
implementation and its fidelity to intended practice” (p. 17). Often, implementation studies compared teachers’ practice to a set of critical attributes, principles, or procedures, as in Child’s (2005) study of curriculum implementation. Concern has been to avoid “lethal permutations” (Penuel, Fishman, Yamaguchi, & Gallagher, 2007, p. 931), or perceptions of dramatic change where there was no change at all, as in “The case of Mrs. Oublier” (Cohen, 1990).

Other studies have carefully structured teachers’ learning to increase the likelihood of acceptable implementation, as in Richards and Skolits’s (2009) study of teachers’ implementation of the RAFT (Role, Audience, Format, Topic) strategy, for which the authors devised a scheme for scoring teachers’ fidelity of implementation. Richards and Skolits’ purpose was to assess the effectiveness of the professional learning model.

(Unpublished) studies of Question Structure tended to assume that how Question Structure was implemented was self-evident and consistent across teachers. Likely this was a function of these studies focusing on implementation of the question-answering strategy (only) by teachers in their first year of use. See for example, Kasian and Marsh (2008).

Connor (2008) and Connor and Sadai (2009) framed their studies in terms of adolescent reading comprehension and links to other board initiatives (differentiated instruction, critical thinking, and assessment of learning). The authors found that teachers had difficulty making connections between Question Structure and other initiatives. This finding was relevant to my question about coherence, but the studies did not examine how teachers implemented Question Structure.

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34 I did so as well, for example comparing teachers’ practice to AFL principles (Table 2.2) and to provincial curriculum (See, for example, Appendix Y, in which I linked English curriculum expectations to a teacher’s use of Agenda/Narrative Structure.)

35 McVey (2009, 2010, 2011a) collected student perceptual data on attitudes towards reading; however, these were not correlated to teachers’ use of the question-answering strategy.
In contrast to these studies, this study focused on teachers with at least three years’ experience using *Question Structure* and on their use of all available components of *Question Structure*. I assumed that teachers had not only developed routine/regular uses, but had perhaps also adapted or used components in novel ways. My focus, then, was not fidelity of implementation, but rather *what teachers did and why*. *Use* is not compared to what was *expected* to occur, but regarded, rather, as what *actually occurred* (Olsen & Kirtman, 2002).

### 3.4.3 Stage theories

Stage theories assume that teachers continue to develop and refine understanding while they work with new knowledge (Gersten et al., 2000). For example, the Concerns-based Adoption Model (CBAM) (Hall, 1974, 2010) provided an analytical framework for monitoring implementation, identifying concerns, and guiding system planning. As indicated in Chapter 3, McVey (2009, 2010, 2011a) used CBAM in her (unpublished) studies of *Question Structure*. (See also Anderson, 1997; Hollingshead, 2009.) As an extension to McVey’s (2011a) study, McVey (2011c) drafted an Innovation Configuration (Hall, 2010) for *Question Structure* components. Although this document provided a starting point for thinking about *Question Structure* implementation, it did not provide images of practice in various contexts. For example, what does mechanical use of the Four-Step strategy look like in grade 9 Applied mathematics? What are acceptable variations? What are acceptable innovations?

In contrast to McVey, I focused on how individuals were using *Question Structure* at a particular point in time: in at least the third year of implementation. Consequently, CBAM’s scales provided criteria for case *selection* rather than monitoring. Teachers were selected *because* they

- had considerable **understanding** of *Question Structure*
had been **committed** to implementing *Question Structure* for at least three years

had had sufficient time to develop regular or **routine use**

participated in a professional partnership or **community** in which they discussed standards of practice related to *Question Structure*.

I was particularly interested in integration into practice, which was related to the research sub-question about coherence. I later realized that I was focusing on one of Hardt’s (workshop, summer 2007) implementation “phases”: information, implementation, *integration*, and independence.

### 3.4.4 Orientation and frameworks

Thirdly, studies of professional learning and change in practice also focused on more global changes, such as changes to a teacher’s orientation. This entailed a more global concept of practice, which is discussed in the next section.

### 3.5 Teacher practice

#### 3.5.1 Introduction

I was struck by Berghoff’s (1997) statement that “teaching is not simply teaching. Literacy is not simply literacy” (p. 3). “No, they’re not,” I thought. “And practice is not simply practice.”

#### 3.5.2 Practices and practice

The notion of a ‘practice’ as a customary behavior or routine is common enough. Teaching involves numerous practices, pertaining, for example, to classroom
management, literacy instruction, or assessment.

In a technical orientation, the adoption of particular practices is encouraged as instrumental means to obtain particular ends. As Eisner (1998) remarked, the primary goal is to “get people to perform” a task, not think about its meaning (p. 15; see also Gersten et al., 2000). Fitzmaurice (2010), complaining about the performative and related values of efficiency and effectiveness, argued that an emphasis on practices shifts attention away from “second-order” concerns, such as establishing human relationships.

The implementation of single practices has been found to have less influence on student learning than teachers’ learning about the subject, curriculum, and student learning (Kennedy, 1997). Hardt (2010) commented that when school districts had teachers implement only the question-answering strategy, they obtained an immediate, but short-lived, surge in student achievement. Question Structure includes specific practices in this sense—for example, “dropping a T” (using a T-chart to respond to a prompt) as a strategy to ascertain students’ understanding of a particular topic (assessment for learning). As Hardt (personal communication, Mar. 27, 2012) noted, teachers sometimes implemented practices mechanically, even when that wasn’t the intention. About visiting student teachers’ classrooms, he wrote:

I know what I thought and I know what I thought I taught, but I have to go out in the classroom and see the reality of what was actually heard, learned, and what has been put into practice. It is never a 1:1 correspondence ….I have seen classrooms where teachers … follow steps … fill in spaces. They don't know why. I have seen classrooms where educators have elevated the structural science to an art form. They follow learners. They fill in gaps. They know why.
Examining how teachers use *Question Structure* therefore necessarily involved identifying specific practices. There were, however, three things that needed to be considered:

- In what ways were these adapted or used innovatively?
- What were teachers’ lines of thinking?
- How did these function meaningfully *in the whole*?

As the bullets above suggest, I conceptualized practice more globally. Schatzki (1996), for example, wrote that a practice is “a manifold of doings and sayings” (p. 106, in Frowe, 2001, p. 90). In this sense, a ‘practice’ includes, but is not limited to, discrete practices. Schatzki argued that it is an integrated, complex *set* of actions, none of which is meaningful apart from the practice as a whole (in Frowe, 2001, p. 90). This was a necessary focus in a study examining a learning *system* and questions of coherence.

In addition to this structural focus, ‘practice’ also refers to the fundamental *character* or distinctive spirit of an individual’s teaching. Thus, lines of thinking include beliefs, knowledges, attitudes, and values. Practice in this sense also refers to a teacher’s fundamental tendencies and relationships. Van Manen (1977) suggested the word *orientation*—“the ways in which an individual looks at the world” and what one is “receptive to” (p. 211). Cochran-Smith and Lytle (2009) used the word “stance” to suggest positioning and relationship. Fitzmaurice (2010) argued that “the core reality of a practice” was relations (Dunne, 2005, in Fitzmaurice, 2010, p. 46).

Considered this way, *change* not only referred to the addition or substitution of practices, but also to “a fundamental shift in what students learn and how they are taught” (Porter, Garet, Desimone, & Birman, 2003, p. 23), a “fundamental change in [teachers’] pedagogical role” (Bakkenes, Vermunt, & Wubbels, 2010, p. 534), what Cuban (1992) called “second-order
change” (in Richardson and Placier, 2001, p. 908). Lange and Burroughs-Lange (1994) similarly observed that “significant” professional learning “challenges [teachers’] existing knowledge of the teaching and learning process and their role within it” (p. 621). According to Fitzmaurice (2010), this is what “moves us beyond a narrow and mechanistic view of teaching built around the adoption of effective strategies” (p. 54). This seems to be what Tierney (2006) referred to with respect to AFL implementation.

Researchers did provide some examples of global change (see Richardson, Anders, Tidwell, & Lloyd, 1991, in Richardson & Placier, 2001; Gersten et al., 2000) where teachers had “to rethink all aspects of their professional knowledge, including general pedagogical knowledge” (p. 450). Schifter and Simon (1992), sought to move teachers from a traditional instructional mode to one congruent with constructivist theories of learning. The emphasis throughout was on teachers’ lines of thinking, rather than on particular actions. The authors found that teachers reconceptualized their content, students’ learning, and their notion of success. McGregor and Gunter’s (2006) Cognitive Acceleration (CA) aimed to help teachers create an “open and thoughtful ethos” (p. 26, emphasis mine), in which they could nurture higher order thinking. The authors found that teachers “[thought] more carefully” about how pupils’ learned and about how thinking about their teaching could support students’ learning (p. 41).

In Cognitively Guided Instruction (CGI), Carpenter, Fennema et al. (1988) also sought to move teachers toward teaching congruent with constructivist theories of learning. They presented teachers with a framework for understanding how students think through various kinds of mathematical problems, but did not recommend, prescribe, or explicitly address implications for practice. Essentially, teachers were supported in taking an inquiry stance toward their students: they were “listening to their students and struggling to understand what they hear” (Franke et al.,
The most interesting finding was that results varied according to whether teachers considered the information about student thinking as fixed information to be applied, or whether teachers regarded it as a framework for continued classroom inquiry and knowledge generation.

As Franke et al. (1998) observed, ultimately change lay “in the meanings [teachers] … constructed” (p. 68).

It seemed to me that the approach in *Question Structure* professional learning most resembled the approach in this last group of studies, where the emphasis was on learning about students’ learning and on non-prescriptive frameworks and processes. A difference between *Question Structure* and *CGI* is that *CGI* was subject-specific, focusing on how students learn mathematics—and this difference was central to this study. Nevertheless, the goal in *Question Structure* in-service is fundamental (second-order) rather than incremental (first-order) change (Waks, 2007). Whereas the latter involves superficial changes that are compatible with existing structures, the former requires deep “change in primary principles, norms, laws” that are the foundation (“base or substructure”) of a system. (Ultimately, this study found that beliefs about student learning were intimately bound to teachers’ use of *Question Structure* in planning, instruction, and classroom assessment.)

### 3.5.3 Theory and practice

One way to conceptualize practice is in terms of its relationship to theory. In common usage, practice is juxtaposed to theory. Theory is thought of as belonging to knowledge producers (researchers), and practice to knowledge users (teachers) (Labaree, 1998; Shulman, 1986). In this view, the research-theory gap is understood as a gap between researcher’s *theory* and teachers’ *practice*. The truism is that teachers are impatient with theory and research knowledge (Elbaz, 1980; Entwistle, 2001; Gersten,
Vaughn, Deshler & Schiller, 1997; Korthagen & Lagerwerf, 1996). The conventional wisdom is that in-service, then, should focus on what’s practical—that is, on specifics (procedures and strategies) and proximity (immediately transferable practices) (McLaughlin, 1990). Joyce and Showers (2002) recommended theory only if it provided a rationale for practices. *Question Structure* in-service has been criticized for not adhering to these principles—although I was surprised to learn that the teachers in this study believed the theory to have readily apparent and useful practical applications.

Another way to conceptualize the theory-practice relationship is to see teachers as mediating other’s theories about practice and constructing their own theories. Handal & Lauvas (1987, in Lange & Burroughs-Lange, 1994), for example, wrote that teachers construct “a practical theory of teaching” quite different from the theoretical products of formal research. In this view, practical theory resides in and emerges out of practice. A practical theory is “a person’s (teacher’s) private, integrated but ever changing system of knowledge, experience, and values that is relevant to teaching practice at any particular time” (p. 619. See also Cochran-Smith & Lytle, 2009; Elbaz, 1980; Richardson, 1992; Zahorik, 1990). In this view, the theory/research-practice gap is a discrepancy between researchers’ theories about practice and teachers’ theories about practice. In other words, any gap is between epistemologies (Richardson, 1992) and “rival theories” (Carr, 1986, p. 179; see also Entwistle, 2001).

I assumed that teachers had constructed an understanding of *Question Structure* and theorized its use, and that their understanding had been filtered through and combined with their own practical theories. (Ultimately, this study found that working with someone else’s formal theory did not preclude teacher theorizing.)
3.5.4 Instrumental and reflective approaches

Practice can also be conceptualized in terms of essential attributes and purpose. For example, in one view, practice is conceptualized instrumentally as the means of achieving particular ends. In another view, practice is conceptualized as a moral activity.

The former view has been the subject of considerable critique. For example, van Manen pointed to Habermas’s critique of the role of science (not of science itself) in contemporary society, seeing it not as a source of neutral technologies, but as an ideology. Shaull (1970) wrote:

There is no such thing as a neutral educational process. Education either functions as an instrument which is used to facilitate the integration of the younger generation into the logic of the present system and bring about conformity to it, or it becomes ‘the practice of freedom,’ the means by which men and women participate in the transformation of their world (p. 15, in van Manen, 1977, p. 221).

Carr and Kemmis (1986) criticized Schwab’s (1969) “practical” for being “pseudo-practicality” (p. 16) that “does not help the practitioner in the real work of making wise choices about what to do next” (p. 17). They argued praxis is required: “genuine practicability” where “the wise man aiming to act appropriately, truly and justly in a social-political situation” treats plans and ends as “problematic” (p. 17). Hibbert (2012) argued in a similar way for the centrality of practical reasoning (phronesis) in (medical) education. Such reasoning is the capacity for considering the best course of action in particular, fluid, and complex situations—where no “universal rules” apply (quoting Flyvbjerg, 2001). Whereas the technical is focused on the relationship between theory and practice, the practical focuses on the relationship is between theory and praxis (Carr & Kemmis, 1986; van Manen, 1977).
Van Manen (1977) similarly argued that despite the etymological connections to the word ‘practical,’ practice is oriented toward the technical interest. Van Manen reasoned that ‘the practical’ is itself aligned to scientific discourse. As such, Schwab mistook the technical for the practical and failed to recognize that the practical had been co-opted for other purposes. For van Manen, the practitioner’s task is to rehabilitate the practical by freeing it from the technical.

Carr (1986), focusing on teachers’ moral responsibility to take control of practice, observed that there is a kind of compliance and acquiescence in the technical, which he called “conformity” (p. 182). Along these lines, Hibbert, Heydon, and Rich (2007) critiqued in-service that perpetuated traditional hierarchies. Zahorik (1990) commented on the need for teachers to interrogate innovations and their own practice: to “know the connection between underlying theory and teaching techniques, be aware of their own philosophical beliefs, and use techniques that do not clash ideologically” with their beliefs (p. 69). Van Manen (1977) called this reflectivity: deliberation about relative value. Researchers argued that this kind of critical reflection is facilitated by participation in a community committed to constructing understanding to direct practical actions.

*Question Structure* is undoubtedly tied strongly to the technical. However, as indicated at the beginning of this chapter, there are also substantive connections to the practical, though I was unsure to what degree teachers integrated technical concerns into praxis or were aware of ideology. The question, really, was *what teachers did with it*. I was therefore alert to evidence of

- praxis and moral dimensions of practice
- not only reflectivity, but also reflexivity—that is, awareness of ideologies and teachers’ willingness to interrogate their own practice.
3.5.5 Professional knowledge and autonomy

Diorio (1982) conceptualized practice in terms of the relationship between the field’s knowledge base and practitioner’s autonomy. For him, a distinguishing feature of practices like teaching, is disagreement about core knowledge and standards. This disagreement is a function of the complexity of human beings and social interactions. This complexity means that knowledge about teaching can never be sufficiently comprehensive, systematic, or precise to “direct practice” (p. 264; see also Kennedy, 2005). Diorio argued that the knowledge base in teaching “restrains and directs” but “is rarely if ever a matter of total control” (p. 261). The more certain, precise, and comprehensive the knowledge base, the fewer degrees of freedom a practitioner has. For Diorio, practice ideally is grounded in an equitable balance between an accepted knowledge base and teacher autonomy.

In a literal sense, Hardt addressed degrees of freedom in his workshops (for example, winter 2010). Degrees of freedom lie in the Solution Set-up: how teachers choose to help learners attain learning goals. This how is the focus of this study. (Ultimately, this study found a strong relationship between constraint and freedom.)

i. On-going inquiry

In Diorio’s (1982) view, then, ongoing teacher learning is regarded as a necessary aspect of practice, not only because teachers acquire knowledge that provides some measure of control, but also because ongoing professional learning acknowledges and enables learners to engage with the uncertainty at the heart of teaching.

This line of thinking is consistent with Smylie’s (1997) argument that ongoing learning is central to adaptiveness, experimentation, problem-solving, and sustained change; with Eisner’s (1998) that practice is characterized by continued inquiry; and with Timperly and Alton-Lee’s
(2011) that teachers as reflective professionals “draw on an integrated knowledge base to constantly improve practice through knowledge and inquiry” (p. 329). The focus is less on techniques than on addressing teachers’ dilemmas and quandaries (Richardson, in Timperley and Alton-Lee, 2008). As Franke et al. (1998) wrote, professional learning is not so much about acquiring a set of teaching skills or learning how to use a particular program, but rather about “changing in ways that provide a basis for continued growth and problem-solving—what [they] called self-sustaining, generative change” (p. 67).

Grimmett and Neufeld (1994) argued that the authenticity of practice is found in this deliberative searching. They contrasted the technical to the authentic, noting that instead of superficially adopting strategies, “teachers learn through struggle and … marked by an earnest search for authentic professional development and classroom action” (p. xiv). The consequence is that all aspects of instruction are then “framed around students’ needs, interests, and choices” (p. xiii)—rather than on technical matters or values of efficiency and effectiveness. From their description, it would seem that teachers are putting “intentional focus on the learner” (Ungerleider, 2008, p.2). This is a moral imperative that contributes to an orientation and ethos of practice. Grimmett & Neufeld (1994) wrote: “Authentic motivation … is essentially moral; it is caught up in a struggle to do what is necessary and of value, not just for the organization nor just for oneself, but ultimately in the important interests of learners” (p. 3-4).

Hardt frequently refers to *Question Structure* as the “science” of teaching. This phrase suggests that *Question Structure* promises to rescue practice from the uncertainties of teaching. However, while Hardt promises a measure of stability (structures are “always there”) and control (“If you use it, it works”), he deals in probabilities, and doesn’t dismiss the role of “art” and the complexities of context. Questions to consider, then, included the following:
To what extent did *Question Structure* enable and support ongoing and authentic professional inquiry?

To what extent did it enable teachers to engage with uncertainty?

To what extent was this focused on the “interests of learners”?

**ii. Social warrant**

As Diorio (1982) pointed out, ‘practice’ refers to a publicly recognized range of activities or ways of thinking (see also Frowe, 2001). This notion was evident in Richardson’s (1992) work. Richardson described how she engaged teachers in an ongoing “dialogue in which she attempted to help them articulate and confront their (largely tacit) beliefs/knowledge (identified in ‘belief interviews’). The aim was to develop a sense of socially justified practice. Richardson conceptualized this process as reflecting on a “combination” (p. 20) of scientifically warranted practice and teachers’ knowledge/beliefs. Richardson contended that the criterion for successful staff development, then, is not the accurate implementation of pre-identified practices, but rather the degree to which “teachers engage in the dialogue concerning warranted practice and take control of their classroom activities and theoretical justifications … and the degree to which these justifications relate to socially constructed standards of warranted practice” (p. 16).

In short, practice is never merely individual or unique. Rather, each teacher has a “responsibility” to “[go] beyond the development of his or her own idiosyncratic, albeit coherent, theory of practice” and to develop and use standards of practice (p. 13). This is one reason why participation in a solid and productive professional partnership/community related to *Question Structure* was one of the case selection criteria.
3.6 Looking Ahead

How in-service, teacher change, use, and practice are conceptualized had implications for this study’s methodology. The next chapter examines how I designed the study to answer my research questions.
Chapter 4: Methodology

4.1 Introduction and overview

This study was designed to ‘answer’ the overarching research question “How do teachers use Question Structure in their practice?” In part, this was a “what happens when…” question (Wells et al., 2002, p. 332), where what teachers did was understood as including their manner of doing it and their lines of thinking. However, the intent was to develop theory grounded in these specifics.

4.2 Interpretive Approach

4.2.1 Introduction

This qualitative study took an interpretive approach. As Eisner (1998) wrote, “If qualitative inquiry in education is about anything, it is about trying to understand what teachers
and children do in the settings in which they work” (p. 11). The purpose, as Denzin (2002) remarked, is to “understand … not explain” (p. 351). As Dilthey (1976) noted, the different purposes of interpretive and naturalist studies require different approaches: “We explain nature, but we understand mental life….This means that the methods of studying mental life, history and society differ greatly from those used to acquire knowledge of nature” (p. 79, in Phillips, 1984, p. 55).

4.2.2 Theoretical assumptions

This is not to imply that determining research methodology was a matter of selecting from a repertoire of ‘neutral’ methodologies. Harste (1992) reminded us that methodologies are “theoretical positions” that “determine what we see” and “have in them theories of language, learning, and knowing” (p. x; see also Elbaz, 1980; Richardson, 1992).

My theoretical assumptions in this study included the following:

- Persons—such as teachers in this study—are complex, evolving, and opaque (Murdoch, 1953, 1954, 1970).

- Meaning does not reside in an external, objective reality, waiting to be ‘found.’ Meaning resides in persons—such as study participants and researchers—who construct it.

- I am therefore also a participant. Ethically, this demands reflexivity, transparency, and inferential care (Charmaz, 2006).

- Data analysis is a “tentative” activity (Wells et al., 2002, p. 332), and ‘findings’ evolve, as interpretations are constructed.

- In the end, interpretations are incomplete, unstable, and contestable (Charmaz, 2006).

36 Much of this thinking derives from study of Iris Murdoch’s philosophy (subject of my Honours Thesis). People are neither wholly rational nor autonomous. Their Selves are multiple, and likely inconsistent and contradictory (McLaren, 1992).
4.3 Case study orientation

Descriptive case study (Stake, 1995) is an appropriate orientation for examining complex phenomena, such as change in practice (Chapman & Heater, 2010). Case study reflects a particular positioning of the researcher to what is being studied—in this case teachers’ understanding and use of Question Structure. Explaining her choice of orientation, Elbaz (1980) wrote that the “disclosure of meaning in unique events is coming to be recognized as a crucial and neglected facet of educational work” (p. 54). Further, this orientation permits in-depth examination of a teacher’s practice as a whole, within its real-life context. In other words, case study enables both nuanced and comprehensive understanding.

4.4 Grounded theory

I used grounded theory and constant comparative method to conceptualize what was happening when teachers implemented Question Structure. Although I described what teachers did along the way, my primary interest was in theorizing that use. In this, I was guided by Charmaz (2006), more than Glaser and Strauss (1967). As Charmaz (2006) points out, Glaser and Straus’ (1967) approach reflected the positivist notion that data are separate from the researcher, who discovers theory in those data. In contrast, Charmaz’s (2006) approach reflects the interpretive notion that the researcher, who is situated in (not apart from) what is studied, constructs theory. This was reflected in my theoretical assumptions, above.

4.4.1 Selecting participants

i. Selection criteria

I purposefully selected as participants teachers who were “experiencing what I wanted to understand” (Denzin, 2002, p. 350). The participants were classroom teachers of intermediate
and senior grades in three Ontario school boards. (See Table 4.1, next page, for selection criteria.)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Details</th>
<th>Comments</th>
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<tr>
<td>• years’ teaching experience</td>
<td>15-20 years’ experience</td>
<td>I did not wish to confound learning to use Question Structure with learning to teach.</td>
</tr>
<tr>
<td>• years using Question Structure</td>
<td>3 or 6 years’ use</td>
<td>Studies of Question Structure (Connor &amp; Sadai, 2009; Elliott-Johns, 2008; McVey 2009, 2010, 2011a) implied that teachers required at least two years to be comfortable with Question Structure. Hardt (2010) asserted that it takes at least three years.</td>
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<tr>
<td>• voluntary, rather than mandated use</td>
<td>commitment and persistence beyond being ‘tapped on the shoulder’ or otherwise ‘invited’ to participate</td>
<td>Participation and commitment were not necessarily ‘easy.’ To some extent it involved leadership and role of change agent. One participant persisted after when professional learning was no longer offered in the school board.</td>
</tr>
<tr>
<td>• openness to professional learning and change</td>
<td>a history of seeking professional learning</td>
<td>Lester and Onore (1990) similarly “wanted teachers who illustrated the possibility of change” (p. 75). In Guskey’s (1995) words, teachers needed to have crossed a “threshold of readiness for the change” (p. 8).</td>
</tr>
<tr>
<td>• understanding of Question Structure</td>
<td>considerable understanding; relatively confident and comfortable with Question Structure</td>
<td>I relied in part on Hardt’s comments about teachers’ work.</td>
</tr>
<tr>
<td>• current use</td>
<td>still learning and experimenting; in medias res, as it were</td>
<td>I wanted to capture the immediacy and complexities of work-in-progress as teachers grappled with “specific problems and doubts” as they “actually implement[ed] the new ideas or practices” (Guskey, 1995, p. 8).</td>
</tr>
<tr>
<td>• knowledge of the provincial literacy initiative</td>
<td>familiarity with Think Literacy (Ministry, 2003)</td>
<td>This pertained to the questions about strategy and structure, repertoire and coherence, and implied leadership role. Ultimately this criterion was also satisfied by focusing primarily on Language Arts/English.</td>
</tr>
<tr>
<td>• participation in professional community</td>
<td>grounded in a professional community in which Question Structure was discussed in terms of standards of practice</td>
<td>This could refer to “natural networks of teachers, rather than to the formal assemblies of in-service” (McLaughlin, 1990, p. 15).</td>
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I was able to make assumptions about academic background. Participants were subject specialists. As required in Ontario, study participants completed a postsecondary degree at a university prior to their education degree and qualified for two subject ‘teachables.’ All secondary teachers in the study are qualified to teach senior English. Additionally, one secondary and the one elementary participant have Master of Arts degrees, one in history and one in education.

I also based selection on what I knew of participants’ work in education, inviting teachers with whom I had worked directly or indirectly in my roles as board consultant and/or provincial Education Officer. I also worked with one teacher in contract work for Curriculum Services Canada. In all cases, my respect for the teachers’ strong subject grounding (I also am an English specialist and hold a Masters of Arts in Literature) and teaching competence was echoed by colleagues, school and senior administrators, and/or leaders in provincial education.

As I collected data, I was alert to aspects of the cases that would help me position them with respect to each other. I was aiming for an “organic” multi-case study, rather than an inventory of cases (Yin, 1984, 2). As recommended by Eisenhart (2002) and as suggested by my own writing and learning experiences, I was looking for distinctions that might prove helpful during cross-case analysis to “break simplistic frames” (Eisenhart 2002, p. 18).

Expecting that teachers might decline to participate and anticipating attrition, I invited five teachers to participate in the case study. I thought that Darlene, a secondary science teacher in another school (with a different demographic) in Keith’s board, might provide a unique contribution because she did not teach Language Arts/English. However, over the course of the study, it became apparent that Darlene no longer met selection criteria, and ultimately—for

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37 Exceptions are individuals who have a specialized background in the technological industry.
reasons unconnected to the study—was unable to participate in the focus group. For this reason, I restructured the study to focus on the other four participants.

After participants had agreed to participate, Dawn’s teaching assignment was changed, and she assumed a part-time role as consultant responsible for Question Structure in her board. Dawn and I also missed one day’s observation. Dawn, who taught in the same school as Mark, was extraordinarily generous, including me, for example, in her consulting activities. This was informative, but not directly pertinent to how classroom teachers use Question Structure in practice.

For these reasons, I settled on three key cases, each from a different school board: Gayle, Mark, and Keith. I treated Keith, who had used Question Structure the longest and most independently, as the central case, framed by Gayle and Mark. Because Dawn was exceptionally articulate and concise (and personable!) in how she framed her comments, I used her reflexively in the latter part of the analysis as a touchstone. She certainly sharpened the focus, and confirmed and clarified interpretations. (See Figure 4.2.)

*Figure 4.2* Multi-case structure

See Table 4.2 (next page) for an overview of the three cases based on the case selection criteria.
Asserting that case definition is “fundamental problem…that has plagued many investigators” (p. 31), Yin (1984) advised purposeful definition of cases. Stake (2006) similarly recommended that each case make a particular, unique contribution to the study—that is, that each represent one aspect or dimension of “The Case” (p. 1). As Stake (2006) noted, single cases could serve as the “arena or host or fulcrum to bring many functions and relationships together for the study” (p. 2), and so increase theoretical significance.

The three key cases differed in two dimensions. First, teachers represented the elementary panel (grade 7) and secondary panel (grades 7-12). Gayle (elementary) taught multiple subjects in one day and students heading towards a variety of destinations (pathways) in one class. Mark

<table>
<thead>
<tr>
<th></th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years teaching</strong></td>
<td>15 years</td>
<td>20 years</td>
<td>20 years</td>
</tr>
<tr>
<td><strong>Years using Question Structure PD</strong></td>
<td>3 years</td>
<td>3 years</td>
<td>6 years</td>
</tr>
<tr>
<td><strong>Professional community</strong></td>
<td>Still participating; communicates with Hardt</td>
<td>Still participating; communicates with Hardt</td>
<td>No PD available; communicates with Hardt</td>
</tr>
<tr>
<td></td>
<td>Works closely with two colleagues; were the first elementary teachers to participate in Question Structure in-service in her board</td>
<td>Works closely with colleague in department (Dawn), with whom he attended in-service</td>
<td>Continually engaged in professional conversation with teacher in another school (his wife, Jennifer) with whom he attended in-service</td>
</tr>
<tr>
<td><strong>Literacy initiative Question Structure role</strong></td>
<td>Board lead</td>
<td>English Department head</td>
<td>School lead</td>
</tr>
<tr>
<td></td>
<td>Question Structure coach and project co-lead</td>
<td>English Department head</td>
<td>(New) English department head</td>
</tr>
<tr>
<td><strong>Subject(s) taught</strong></td>
<td>Language Arts, History, Geography, Art</td>
<td>English</td>
<td>English</td>
</tr>
</tbody>
</table>
and Keith (secondary) taught specific subjects and programs (courses tailored to a variety of postsecondary destinations). I thought that the variety in pathways might, like subject content and pedagogy, have implications for the universality problem. Second, implementation contexts in the three boards were slightly different. (See Table 4.3.)

**Table 4.3 Implementation context**

<table>
<thead>
<tr>
<th>School</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small senior elementary school</td>
<td>Grade 7-12 school</td>
<td>Secondary school (grades 9-12)</td>
<td></td>
</tr>
<tr>
<td>Mid-sized city in northern Ontario</td>
<td>Small city in southwestern Ontario</td>
<td>Medium-sized city, southwestern Ontario</td>
<td></td>
</tr>
<tr>
<td>Depressed economy</td>
<td>Seasonal economy and arts community</td>
<td>Catchment area suburban and close to high tech business, two universities, international institutes</td>
<td></td>
</tr>
<tr>
<td>School population includes high number of identified students and students of aboriginal background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting</td>
<td>Tentative plan for system implementation: Entire school staff using <strong>Question Structure</strong></td>
<td>Teacher inquiry group</td>
<td>Independent</td>
</tr>
<tr>
<td>Approaches</td>
<td>Small group of like-minded teachers doing <strong>Question Structure</strong></td>
<td>Single teacher in school using <strong>Question Structure</strong></td>
<td></td>
</tr>
<tr>
<td>Scope</td>
<td>Formal lead and coaching role, but not part of teaching assignment (has to prepare for supply teacher when away from the classroom)</td>
<td>Informal <strong>Question Structure</strong> leadership role within school influences department’s use of <strong>Question Structure</strong></td>
<td>Not acknowledged as a change agent, although influencing other teachers in his department</td>
</tr>
<tr>
<td>Change agent responsibility</td>
<td>Parental role with respect to students; community-builder with respect to colleagues; Strong system perspective, board and province; Frequently tapped for leadership roles at board level</td>
<td>Overseer and guide with respect to students; curriculum leader with respect to colleagues; Strong system perspective, board and province; Significant participation at provincial level</td>
<td>Facilitator who understands students’ perspective; colleague who influences indirectly</td>
</tr>
<tr>
<td>Point of reference</td>
<td></td>
<td></td>
<td>New to system perspectives</td>
</tr>
</tbody>
</table>
Even my initial impressions from my first day of classroom observation suggested differences in how teachers were using *Question Structure*. (See Table 4.4.) I thought this might have implications for teachers’ ways of implementing *Question Structure*, and suggest implications for professional learning.

**Table 4.4 Initial impressions (first day of observation)**

<table>
<thead>
<tr>
<th></th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial impressions</strong></td>
<td>Focusing on few components Using some of Hardt’s materials, but also generating her own, applying <em>Question Structure</em> to curriculum content Using Taxonomy for her own professional purposes</td>
<td>Exploring and integrating a wide range of components Generating &amp; modifying curriculum materials</td>
<td>Experimenting and embedding a range of components Claiming radical change to practice Despite pervasive use, not generating curriculum materials</td>
</tr>
</tbody>
</table>

*ii. A word about tables*

As in the tables above, I have organized the three main cases this way: Gayle, Mark, Keith. Although the convention is to order left to right along a continuum—for example from smallest to largest, least to most significant, and so on—that is not here the rationale.

Instead, the organization pertains to the teachers’ implementation context: It reflects the constraint-autonomy balance of each teacher’s context. (See Diorio, 1989.) All participants had a high degree of autonomy, but the degree to which they experimented with *Question Structure* reflected the degree to which they experienced systemic constraints, built shared understandings of *Question Structure* in practice, and developed community-sanctioned standards of practice (Diorio, 1989). I focus here primarily on *internal and self-imposed* ‘freedom’ and ‘constraint,’ rather than on external constraints, although the former are of course influenced by the latter. In any case, license to experiment and need to develop common knowledge and standards of
practice seemed to be inversely related, with a point of balance between the two extremes (Diorio, 1989). This relationship might be illustrated this way (see Figure 4.3):

Mark consciously sought to balance constraints and freedoms, both to meet “obligations” and be “proactive.” The small Question Structure community in his department and school was building common knowledge and publically shared standards of practice pertaining to Question Structure.

Although Gayle noted that colleagues in her school all used Question Structure in ways that fit their own “teaching style,” she was conscious of coordinating with colleagues of all subjects and supporting systematic whole-school implementation. There was more emphasis on coordinating implementation of a few components than on experimenting and generating knowledge.

Keith did what he could to promote Question Structure, but as the only teacher implementing Question Structure in his school, he had no option but to implement Question Structure independently, rather than as a member of a professional community building shared practices and standards of practice. (That said, some colleagues are gradually experimenting with
Keith’s approaches.) He has been working individually for four years, although he talks with English teachers in other schools who are implementing *Question Structure*, and to Hardt.

Like Mark, Keith indicated that senior and school administration did not understand what he was doing with structures. For Mark, this meant that although administration recognized that his department was exceptionally strong, administration didn’t understand why. For Keith, this meant that he could experiment, operating under the radar, as it were. He remarked when reviewing draft materials during member checking, that that was “the beauty and the sadness of it.”

To a certain extent, these positionings reflect the teachers’ point of reference. (See Table 4.5, next page.) Gayle, for example, was both supported and constrained by systemic implementation, in which she played a lead role. She was coordinating her work with colleagues so that *Question Structure* was used consistently across the school. The primary concern was to build students’ automaticity with the structures—to do a few important things well. It took three years to achieve whole-school implementation of Snapping and T-charts. Gayle saw as problematic systemic professional learning that does not coordinate and build shared understanding and use.

Mark also spoke of the need to support new cohorts of teachers being introduced to *Question Structure*, meaning that some of the board’s professional learning sessions were diverted from extending his and Dawn’s learning. However, while a number of teachers in Mark’s school were using structures, there was no external pressure to implement whole-department or whole-school. In addition, Mark attended to balancing and integrating a wide range of system initiatives and directives, as appropriate to his board and provincial leadership roles. While these were integrated into *Question Structure*, he noted that ‘weaving’ all these
‘obligations’ together required a lot of time, effort, and thought. On the other hand, Mark and his department were conspicuously pro-active, actively seeking to understanding, experiment judiciously with, implement, and share new approaches.

Findings could, of course, be organized in other ways. Most importantly, I wish to emphasize that this ordering does not in any way reflect a value judgement.

4.4.2 Study design

The study was structured as follows:

- an individual, preliminary meeting (December 2009-January 2010)
• 3 days of classroom observation for each teacher, scheduled by the teacher (January-June 2010)

• 3 semi-structured interviews for each teacher, usually following classroom observation (January-June 2010)

• a focus group involving all study participants (July 2010).

See Figure 4.6 (former page) for a graphic representation. I have represented the study as a flow chart (Figure 4.8). (See Appendix G for a matrix representation.)

Figure 4.5 Flow chart configuration of study
Protocols. As recommended by Charmaz (2006) and Yin (1984), I developed protocols for the classroom observation and interviews. Protocols are “a major tactic to increase reliability of case study research” (Yin, 1984, p. 64) and “integrate real-world events with the needs of a data collection plan” (67).

Interview protocol. Two teachers from Keith’s school board (Jennifer and Larry, not case study participants) were invited to participate in pilot interviews. The choice of these two teachers was in part based on convenience: availability, a longstanding collegial relationship, geographical proximity. The pilots gave me an opportunity to rehearse the protocol and interviewing technique, test the audio-recording equipment, and, most of all, refine the questions.

I did revise questions based on the pilots. For example, it quickly became apparent that the past-present-future framework I had developed was most fruitful if it focused on teaching artifacts. Also, while I was thinking of Question Structure implementation as changing practice, teachers thought of it in terms of teaching. It was apparent that teachers’ memories of their initial encounter with Question Structure, which I had thought an important turn point in examining change, differed significantly from both my memories and Hardt’s (2010). Teachers’ accounts seemed to be coloured by later learning and shifts in attitude. This is consistent with Eakle’s (2007) observation that memories, which are “moving and elusive,” are not data: “what happens to most of what we comprehend at a given moment loses its own distinctive features and becomes part of something else” (in Smith, Carey, & Harste, 1982, p. 35, on p. 290). Brodkey (1992) made a similar argument when he asserted that “stories relate rather than recover experience” (p. 301). Interview questions were adjusted accordingly.

The pilot interviews confirmed the challenges in conducting interviews that were “open-ended yet directed, shaped yet emergent, and paced yet unrestricted” (Charmaz, 2006, p. 28).
The audio-tapes had heightened awareness of weaknesses in my questioning technique, for example of my ability to phrase questions in language that spoke from a teacher’s point of reference and didn’t impose frameworks.

The interview questions were broad and supported with probes intended to prompt clarification and elaboration. For example, I asked (Figure 4.7):

Figure 4.6 Excerpt from interview protocol

Could you please describe your introduction to structure-based learning?

Probes:
- How did you become involved?
- What happened in the first session(s)?
- What were your first impressions and feelings?
- How did the in-service compare to other professional learning?

Participants indicated that interview questions prompted them to reflect on their practice in ways that were unusual for them (Charmaz, 2006). I did attempt to keep interviews conversational though somewhat structured (Charmaz, 2006). While I asked the same core questions of each participant, I also varied the order, included probes, and tried to allow direction to emerge out of the conversation (Mishler, 1986). I tailored each interview to the participant by including questions arising from that day’s observation and from my review of the previous interview. I often quoted excerpts from the previous interviews and sought responses to paraphrases and interpretations of what participants had said. This was one way of working “vigorously to understand each particular case (one case at a time)” (Stake, 2006, p. 1). For example, in Mark’s second interview, I asked the following (Figure 4.8, next page):
Focus group protocol. I also developed a protocol for the focus group. This included three broad questions, which I posted as a guiding focus for the entire session; a script in which I described the nature, purpose, and procedure for the focus group; and prompts to stimulate and guide the conversation. These were not all questions. For example, I summarized seven priorities for teacher education (Kosnik & Beck, 2009), and asked participants to identify those that Question Structure addressed/did not address. The purpose was to provide new categories for thinking about Question Structure and disrupt their usual way of thinking about it. I also excerpted (anonymously) quotations from the interviews—all of the participants were represented—and asked them to identify the ones that resonated most with their experience and to explain why. (See Appendix H.)

Observation protocol. At first, attempting to orient myself during classroom observation to what I was seeing and hearing, I made a “running commentary” (Charmaz, 2006, p. 15) in my field notes. I focused primarily on Glaser’s (1978) general question: What’s happening here? (in Charmaz, 2006, p. 20), though I did have a list of Question Structure components and research sub-questions. By the second observation, I was asking questions like, “What am I learning about Question Structure, practice, and change?” and “How is this classroom practice similar to or
different from other classroom practices I’m observing?” By that time, I had developed a more pointed observation protocol, as recommended by Desimone (2009), based on data analysis. This protocol proved invaluable when reviewing videotape and interview transcripts.

4.4.3 Data collection

i. Preparing to collect data

I met with study participants prior to data collection to review Participant Information (Appendix I), give teachers an opportunity to experience being audio-taped, to review (and revise) a sample “Letter to Parents and Permission Form” (Appendix J), and to discuss videotaping and scheduling of classroom observation.

Teachers distributed parental letters and permission forms, and collected the latter prior to my first visit. One student in one school board did not return the permission form until after the second classroom visit. The teacher arranged for that student to work in a glassed seminar room off the classroom during videotaping, a decision that seemed to be consistent with classroom practices. One student in another board requested that she not be videotaped. I accommodated this request by positioning the camera so that the student was off-screen.

ii. Data collection.

As is typical of case studies (Charmaz, 2006), I employed several data collection methods: field notes and classroom observation, semi-structured interviews, and artifact analysis.

Observation. The classroom observations enabled me to see where “research and practice … come together” (Rust, 2009, p. 1886), to get a sense of teachers’ practice as a totality, and to obtain data unmediated by efforts to explain it in propositional language. Desimone (2009) contended that, unlike surveys, observation permits researchers to attend to detail, complexity, and fine distinctions. Field notes provided a point of comparison with interviews and video review.
I observed teachers for one full day three times between January and June 2010. According to Desimone (2009) this ‘set’ of three constitutes one stable observation. (Desimone recommended three stable observations over an extended period. I believed it unlikely that I would have obtained permission to observe/videotape and interview that many times in one semester; the frequency would have been intrusive and onerous for teachers. Spreading data collection over one or more school years would have been complicated by teachers’ changing teaching assignments and the possibility that board support for Question Structure might be withdrawn.) The senior public school teacher worked on a full-year schedule, meaning that she had been working with her students since September. The secondary school teachers worked in semested schools, so they were meeting new classes in February. Staggering visits in this way allowed me to get a sense of how teachers introduced elements to students and built on this introduction over the observations. Visits fell out as follows:

- Visit #1: January-February
- Visit #2: March-April
- Visit #3: May-June.

Teachers selected the dates of the visits, working around, for example, field trips, assemblies, and testing days. Teachers also identified days they thought relevant to Question Structure. Their choice of what I was to observe was itself instructive. For example, when asked Keith if he used any of the Think Literacy (Ministry, 2003b) strategies (I was interested how these ‘fit’ into Keith’s structure-based program), Keith remarked that he did use some, but had not chosen those days so that I could see explicit use of Question Structure. In other words, I saw, heard about, and inferred what else teachers did in their classrooms, but these things were the focus only insofar as they pertained to Question Structure.
Confidentiality. Although I assured participants of confidentiality, none was particularly discrete about the study, inviting me into the department or school office, introducing me to colleagues, taking me with them to special school events (field day) or (in the case of the part-time consultant) to a session in which she modeled teaching of Question Structure to Special Education teachers and their students. Three of the teachers had student teachers in their classes during this period (including one my students from OISE), all of whom received participant information sheets and agreed to my presence in the classroom. Teachers ensured that this was not a factor on observation days: student teachers taught a small segment and/or worked directly with students during seatwork.

Videotaping. Video-tape recordings captured the complexity of the lessons observed and permitted multiple and close re-examinations. Each observation day, I videotaped one of the teacher’s classes observed for close analysis. The video-camera had a microphone, but I also audio-taped classes as a back-up, positioning the audio-recorder close to the teacher, and took field notes. Once running, neither video nor audio recorder needed to be attended to during class. Teachers identified the class they wished video-taped. For Gayle and Dawn I videotaped the same class over the three days. Mark selected which class to video on each day. Keith had no preference, and permitted me to make the decision based on what was planned for the day. This last approach in fact produced much richer data and better helped me obtain a sense of Keith’s practice—an additional reason for making that the central case. The teachers seemed comfortable with the video-camera, possibly because they were experienced teachers and most had been video-taped before. The video camera was placed as unobtrusively as possible at the back or at the side of the room on a tripod. Students could see that it focused on the teacher’s preferred teaching area and that I didn’t pan to capture them on film. The students were self-conscious initially. A couple of teachers remarked on
the first observation day that students were quieter than usual, and I noticed a few surreptitious glances toward the camera from those seated nearest to it—though the camera was positioned over their heads. On the first day, some students in grade 10 (in two schools) posed for or waved at the camera but soon lost interest. Students’ voices were subdued, and often the video-camera’s microphone didn’t catch their words, though the teacher’s voice was clear.

Two teachers introduced me to students on the first day. Senior students were more likely to speak to me spontaneously, though students in the grade 7 class had lots of questions when I was introduced about why I was still in school (it was my age that perplexed them). Gayle was comfortable with me circulating during seatwork in this class, speaking to students about their work. These interchanges were not recorded in any way, but helped me understand what I was seeing, as I had not myself ever taught grade 7. Towards the end of the semester all teachers indicated that they felt that I had not been intrusive and that they had been able to carry on as usual.

The videotapes were intended not only as records that I could review multiple times during analysis, but also as artifacts that the teacher and I could watch together and discuss. During the second interview I showed participants a clip I had selected from the previous day’s observation. Teachers were given control of the video, able to pause or rewind as they wished. Generally teachers did not seem to enjoy watching themselves and focused on details like how much they paced in front the blackboard or which students’ raised hands they hadn’t noted. My feeling was that I had insufficiently prepared them for video analysis. In future, I would analyze a video-clip of a teacher (for example from video available through the Ministry website) during the preliminary meeting and do a guided analysis of the clip prior to videotaping teachers. The videotape was, however, extremely valuable to data analysis.
**Interviews.** Combined with observation, interviewing is “most appropriate” for examining instructional coherence, teachers’ critical reflection, and disposition (Desimone, 2009). Alvermann (1998) observed that questions forge relationships between questioner and respondent, relationships heightened by “physical, psychological and emotional proximity” (p. 361). She argued that this generative relationship differs fundamentally from reporting other people’s information. I used two approaches in the interviews: prompts eliciting stories (Connelly & Clandinin, 2000) and direct questions requesting interpretations and lines of thinking (Kennedy, 2005). The intention was that, together, the live observation, videotape, field notes, and interview follow-up would result in ‘thick’ description rich with possibilities for analysis and interpretation.

I did not think of these data sources as triangulation, as they seemed primarily to illuminate and clarify more than validate, though certainly patterns emerged. The image I had in mind was a kaleidoscope, but Richardson’s (1997) image of the crystal may be more appropriate, because each plane represented a facet of the case. As she noted, a crystal, which reflects and refracts internally, suggests both situatedness and a rich, evolving inner life.

I interviewed case study teachers three times each during the January-June period. However, I quickly learned that teachers did not confine their conversation to interview times: interesting comments were often made, for example, before the audio-recorder was on, prior to a class, during lunch, or while we headed out the door after the interview. Two of the teachers in particular tended to talk about their plans and show me artifacts before class. I attempted to take advantage of these moments with the audio recorder and a notepad but was not always successful. The intention was to interview the teacher at the end of the day, though this was flexible. Teachers often preferred to be interviewed during their spare period or lunch, thereby reducing the amount of time after school. In one case, because of an after-school commitment, Dawn requested an interview on a subsequent day,
when I was in the school observing Mark. Most interviews took place in the teacher’s classroom, which I felt prompted more vivid recall of what had happened that day and permitted the teacher to pull examples of artifacts and student writing. Occasionally, interviews took place in department offices, when the classroom was being used by other teachers. The interviews were audio-taped.

Although we had planned for 1-1.5 hour interviews, many were 2 hours. I was repeatedly struck by how much participants assumed I understood about why they did what they did, and by how ambiguous their statements seemed to me.

I began transcribing the interviews and videotapes immediately after the observation day, but was not able to complete transcription before the next observation day. Transcription took much longer than expected! I did, however, review the videotape and field notes before the next visit, selecting clips for discussion, and generating specific questions pertaining to the previous day’s observation and interview.

**Teaching artifacts.** Teachers provided teaching artifacts both during classroom observation and during the interviews. I supplemented these with photographs of classroom artifacts, such as posters. I photographed or scanned these if they weren’t available electronically. Some artifacts were samples of student work that illustrated a point; these were anonymous, and I have reproduced only excerpts to support points, as per the Letter to Parents. Like Ball and Cohen (1999, in Borko & Putnam, 2000), I felt that classrooms and records of practice were “powerful contexts for teacher change” (p. 7). These artifacts generated the most energy and detail in conversation (interviews) and ultimately proved to be a rich data source.

**Focus group.** The interviews were followed by a focus group in the summer. The date was based on teacher availability. The timing facilitated the travel of the teacher from the northern school board, who stayed with me and took the opportunity to visit friends in the area. (I had no funding to
cover travel expenses—me to her school or her to the focus group.) Except for Mark and Dawn, teachers did not know one another. The focus group discussion was videotaped. The intention was to provide participants with an opportunity to make cross-case connections, to stimulate reflection, and to have the penultimate word in the study.

4.4.4 Data analysis

i. Transcription

Preliminary data analysis began during the writing of field notes, reviewing of audio-tapes and video-tapes, and (especially!) transcription. Like everyone who transcribes for the first time, I made decisions about what to include/exclude (such as ‘ums’ and false starts), what system to use for speech characteristics (such as pauses and emphasis), and how to punctuate. The last required close and repeated listening; I was surprised how much this process contributed to the analysis.

Observations and interviews for one case unavoidably overlapped the transcribing of another case, prompting ongoing comparisons. I found myself asking: What is surprising and why? How is this similar to or different from the other cases? I transcribed interviews in the order in which they occurred, to get a narrative sense of the whole. I was interested, for example, in how teachers introduced and built on Question Structure components during the term. However, towards the end, I moved back and forth between transcripts.

ii. Grounded theory

I was deliberately “systematic.” As indicated, above, I took a grounded theory approach to data analysis (Charmaz, 2006; Eisenhart, 2002; Glaser & Strauss, 1967). This approach attempts to explain analytically participants’ experiences and perceptions, and variations in these
Overall, Charmaz’s (2006) “systematic, yet flexible guidelines” (p. 2) guided my approach.

I began with within-case analysis. As Eisenhart (2002) advised, I attempted to clear my mind of preconceptions and hypotheses and to approach the data in an open-ended, flexible, recursive and iterative manner. Overall, I took the same approach to each case, trying to become “intimately familiar” (Eisenhart, 2002, p. 18) with each. Like Elbaz (1980), I wanted to “begin with the particular, and know it well” (p. 54).

**Open coding.** I broke the transcribed data into segments and labeled them (Charmaz, 2006; Creswell, 2007). Denzin (2002) referred to this as “bracketing”: “hold[ing] the phenomenon up for serious inspection, taking it out of the world where it occurs” (p. 355). I put the transcript into the left column of a two-column table to break the text into short lines, as Riessman (1993) suggested for narrative analysis. I worked line-by-line the second time through, trying to focus on gerunds rather than nouns (Charmaz, 2006), and used the underlining and highlighting features to identify key words and phrases. In the first reading, I used an *ad hoc* system of colour coding to begin identifying patterns.

I used the right column to identify themes and write memos. This approach was consistent with Charmaz’s (2006) suggestion that grounded theory researchers write initial memos as a way to “get ideas down as quickly and clearly as [they] can” (p. 84) and with her description of initial coding as opening possibilities (p. 46). Memo-writing helped identify initial codes.

**Focused coding.** I then printed hard copies, matched artifacts to interviews, and wrote additional memos, including memos about memos. As Charmaz (2006) suggested, I tried to move these from description to analysis and conceptualization. I colour-coded text with
highlighters, noting key words, phrases, statements, metaphors, including repeated items. I also circled words, and added asterisks and marginalia in ink. To disrupt the flow and force comparisons, I sometimes worked backwards through interview segments or moved from day to day. This strategy drew my attention to details in the other interviews that I had not particularly remarked and foregrounded repeated items and themes. Later, I realized that, as Denzin (2002) pointed out, aspects of this analysis included a semiotic reading that identified key words, their oppositions, and (sometimes multiple) meanings. Binary opposites were particularly prevalent in Keith’s case (discussed further below). Always, though, the analysis was about “confront[ing] the subject matter, as much as possible, on its own terms,” keeping it grounded in the data, and making “tentative statements” (p. 359).

By this time, I identified the most important (often but not always the most frequent) categories and reviewed the transcripts to see how they worked with the whole (focused coding) (Charmaz, 2006).

**Axial coding.** When identifying categories I also began identifying relevant subcategories. I went back to coding transcripts, concentrating on developing sub-categories and relationships between categories (Charmaz, 2006; Cresswell, 2007). I found it useful to think in terms of Hardt’s Parts (Attributes), Functions (Manner), and Connections (Types) because I was identifying the properties of categories (the parts and attributes), the function of subcategories (and how they functioned), and the connections (and types of things) I was seeing. Strauss and Corbin (1998, in Charmaz, 2006), recommended thinking in terms of questions (such as When? Where?) and in terms of conditions, problem solving, and cause-and-effect. However, I used Hardt’s *Type of Requested Information* construct as a framework for thinking about the
categories. I found the *Question Structure* schemes more systematic and better developed conceptually.

Eisenhart (2002) described data analysis in case study as “the heart of building theory” and “the most difficult and the least codified part” of the research process (p. 17). It did suit my sensibilities and background in literature study to approach data as a text, to look for patterns, to listen to voices, and to “play” with possibilities (Charmaz, 2006, p. 70).

*Cross-case analysis.* The final stage in data analysis was cross-case analysis, though in truth, some cross-case comparison overlapped with within-case analysis. I compared Keith’s case to Gayle’s and Mark’s. When analysis seemed to stall, I reconsidered my interpretation, using Dawn’s case reflexively as a touchstone to confirm that “no new properties of the pattern emerge[d]” (Glaser, 2001, p. 191 in Charmaz p. 113, italics mine). Finally, I wrote (finalized) the “theoretical story” that is this thesis (La Rossa, 2005, p. 851).

4.4.5 Writing as a strategy

As Charmaz (2006) commented, observation (and video) does not lend itself to line-by-line coding—particularly as I was analyzing my description of what happened. When interview analysis was well under way, I turned to writing a narrative description of one lesson or instructional segment from the video recordings of each teacher. This was a writing-to-think strategy more than a write-it-up strategy (see Richardson, 1997), though I thought I would draw on written descriptions for illustrations. This was much more than a ‘straight account’ (if indeed such a thing can be written). I was very conscious of constructing an interpretive account that re-located details and interpretations in the original context (Charmaz, 2006; Denzin, 2002) and “re-create[d] experience in terms of its constituent, analytic elements” (p. 359). It was informed by my sense of a totality of practice and by the themes emerging from interview transcript analysis.
In writing the descriptive narrative, I attempted to make visible and interrogate my emerging interpretation. To do so, I wrote from an imagined physical location, for example sitting in Keith’s classroom among his students (see Appendix K). Charmaz (2006) wrote of “try[ing] to enter [the participants’] settings and situations” (p. 14), and this resonated with my feeling that I was trying to ‘get inside’ what was happening. I found that doing so heightened my awareness of my relationship to the participants, the limitations of my knowing, and the ethical responsibilities of describing what I saw and heard. I realized how much this ‘exercise’ was developing and refining the analysis: I was noticing details, making connections, and rethinking what was happening. I was conscious of the need to work towards synthesizing categories and themes, attempting to “subsume them under one essential meaning” (Denzin, 2002, p. 359).

This was not as premeditated and strategic as it may sound. I had difficulty giving myself permission to ‘play’ with the data this way (although Linda recognized this early on). Later, I recognized my dilemma in Laurel Richardson’s (1997) comment on experimental writing:

Postmodernism claims that representation is always partial, local, and situated and that our self is always present, no matter how much we try to suppress it…. Working from that premise, we are freed to write material in a variety of ways: to tell and retell. (p. 91)

When I reexamined the analyses of the interview transcripts, I began diagramming binary opposites associated with the theme ‘teaching explicitly’: explicit/implicit; revealed/hidden; demystify/mystify; questions/answers; known/unknown; independent/dependent; open curtains/closed curtains, home/foreign country. Then (prompted by what confluence?), I recalled the image from a childhood storybook of Toto knocking aside the curtain in the palace hall in the Emerald City and exposing the Wizard. “Ba-da-boom, ba-da-bing!” I (mentally) heard Keith say. I thought: this has something to do with what I understand about Keith’s story.
I worked this insight analytically, for example by comparing Keith’s story with Baum’s in matrices and other graphic formats. (See Appendix L.) Then I began to write about this underlying narrative image in a conventional, academic way. I “[wrote] up” (Richardson, 1997, p. 88) what I had discovered. However, the result was unsatisfactory. I rewrote it as a narrative layered with parenthetical commentary, but it solidified into allegory, and it was essence and resonance, not systematic points of comparison I was after. So, I reread the storybook and played with connections. All the while, the line “Pay no attention to that man behind the curtain” kept running through my head. Then it became “There is no man behind the curtain.” I recalled that the wizard had been my least favourite part of the story: to go all that way and find him! Find nothing! Well, that wasn’t quite right either, but the point was that the Wizard wasn’t the point.

In the storybook image, Dorothy’s back is to the reader, who sees what she sees. *Dorothy’s back and Toto* are what I see, not the Wizard. I found myself (imaginatively) sitting again among Keith’s students, rewriting, in an imagined, collective voice. They were guided by a different kind of wizard—not one who posted a Guardian at the Gate, but one who deflected questions back to them by asking, “What do you think? What do you think?” I rewrote, as always sifting and reducing, letting lines emerge, breaking them for points of tension, the way I do when writing poetry. As van Manen (1997) observed, I found it “hard to draw” a “distinction between poetic and narrative” (p. 368, in Ölen, 2003, p. 558). For a short while, I was no longer thinking about data analysis at all. Then I felt as if the pith of that case’s data analysis had dug itself out of the ground, like a shadow creature, and crouched in my throat.38 The words

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38 This may seem an odd comment. In an earlier draft I wrote: “When I began, I did not know how unavoidably present in the study I was—not as vehicle, but as subject. As I write this, I feel this knowing in my throat, the way I do when I write poetry. When I left positions as a consultant and education officer—where of necessity and politics one negotiates perspectives and language quite different from those of a teacher—to work on this study, I remarked to a friend that I felt as if I were re-entering my own life. Well, re-entry took longer than anticipated. It has been a struggle: how to instantiate myself, how to re-inhabit my own voice. And later: “For me, vision depends on voice,
resonated and hung together in unanticipated ways. I pulled out Hirshfield’s (1997) *Nine Gates*, one of my favorite books on poetry, which opens with a description of the language of poetry:

> language awake to its own connections—language that hears itself and what is around it, sees itself and what is around it, looks back at those who look into its gaze and knows more perhaps even than we do about who and what we are. (p. 3)

And in the next writing, when the curtain fell aside, the Wizard wasn’t there.

The piece, “No man behind the curtain,” not only re-presented what I knew, but also the writing of it had contributed to that knowing. (See Appendix M.) It was both discovery and communication (Cahnmann, 2003, in Prendergast, 2009), inquiry and representation (Neilsen, 2004, in Prendergast, 2009). I was unsure of its place in a grounded theory study at that point, but did know how it functioned in the analysis. I was somewhat reassured by Charmaz’s comment about “[t]heoretical playfulness”: “Whimsy and wonder can lead you to see the novel in the mundane. Openness to the unexpected expands your view of the studied life and subsequently of the theoretical possibilities” (p. 135-6). I was also reassured by Glesne’s (1997) description of her writing process, in which grounded theory methods such as coding and sorting by theme, evolved into a “poetic transcription process” (Prendergast, 2009, p. xxv).

As Luce-Kapler (2009) wrote, “poetic practice … prepares us for the serendipity of insight” (p. 75)—but I had forgotten! Partially, this was about reminding myself “how working like a poet may enrich our inquiry” (Luce-Kapler, 2009, p. 75, italics mine).

I include this account because the writing described above contributed to synthesizing codes and categories, and so helped develop the conceptual metaphor for one of the cases. I brought this insight back to the cross-case analysis and argument-building.

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on breath and body. In all my nightmares, the skies are emptied of sound, and I am mute, ‘tongue swallowed / on the muscled brink / of screaming’ (Elliott, 1996, p. 14).”

39 And Linda’s positive response to the piece.
This encouraged me, and tried other forms of poetic transcription as I wrote. For example, I created a ‘found’ poem out of Gayle’s transcripts and the transcript of an extensive interview with Michael D. Hardt (2010), co-developer with Peter B. Mosenthal of *Question Structure*. I also tried a more abstract approach with Mark’s transcripts. The latter was more akin to the following process described by Glesne (1997): “I found myself, through poetic transcription, search for the essence conveyed, the hues, the textures, and then drawing from all portions of the interviews to juxtapose details into somewhat abstract representation” (p. 206, in Prendergast, 2009, p. xxv).

In this way, the unique histories, teaching contexts, sensibilities, and teaching emphases of the three key cases emerged and coalesced. In particular, I developed a sense of each participant’s primary concerns and each participant’s image of the teaching Self—what Kelchtermans (1993) called the “professional self” (in van Veen & Sleegers, 2006). (See Table 4.6, below.)

**Table 4.6 Central concerns and images**

<table>
<thead>
<tr>
<th>Primary concerns</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individual students</td>
<td>Program</td>
<td>Learning</td>
</tr>
<tr>
<td></td>
<td>Providing students with skills they can take with them</td>
<td>Continually improving program</td>
<td>Facilitating students’ learning; teaching like a learner</td>
</tr>
<tr>
<td>Image of the teaching Self</td>
<td>Helps raise children, e.g., by modeling</td>
<td>Camus’ Sisyphus: calm center in absurd world</td>
<td>Demystifies (<em>not</em> the Wizard of Oz), cutting away the frivolous, artificial, obscurant</td>
</tr>
<tr>
<td></td>
<td>Welcomes, provides peace, order, honesty, skills they can take with them</td>
<td>Maps “the big picture,” integrates and balances, provides context, finds new ways to roll the stone up the mountain</td>
<td>Builds from the bottom up, in a spiral</td>
</tr>
<tr>
<td></td>
<td>Coaches for getting along with people and for succeeding at something</td>
<td>Maitre d’: Sets up, watches, intervenes as necessary, reflects</td>
<td>Steps back from the lectern</td>
</tr>
</tbody>
</table>
These findings were significant in that they indicated each teacher’s sense of “who I am” (Borko et al., 2004). *Question Structure* seemed to fit into (Gayle), elaborate (Mark), or realize (Keith) teachers’ sense of their teaching self.\(^{40}\) As Borko et al. (2004) argued, professional identity “shapes” how teachers understand and respond to pedagogical problems. The reader can find these images in poetic form in the appendices:

- Appendix N: The purpose of education (Gayle’s parental image)
- Appendix O: Lessons from Sisyphus (Mark’s Sisyphus image)
- Appendix: M: No man behind the curtain (Keith’s Wizard image).

I also alert readers to the following:

- Appendices N, O, M and A (Hardt, 2010) are examples of poetic transcription. While Gayle’s and Hardt’s may be described as ‘found poems,’ Mark’s and Keith’s are more abstract syntheses.
- In Appendix O may be found an excerpt from Gayle’s T-chart lesson and in Appendix P the T-chart segment from one of Mark’s lessons. Dialogue in Keith’s descriptive narrative and Mark’s lesson segment are verbatim. The excerpt from Gayle’s lesson is a compilation of the same lesson in two classes; some of the student comments were inferred from Gayle’s comments.
- Excerpts from poetic forms of data interpretation/representation are included in sidebars throughout this study—pale green (participants), blue (Hardt), and salmon (my memos).

This writing strategy contributed to this study in two other ways. Glesne’s phrase “I found myself writing…” is more than an idiom. Months after writing “No man behind the

\(^{40}\) The perspective is cognitive: I did not examine socio-cultural aspects of identity. See Borko et al. (2004).
curtain,” I happened on Sipe and Ghiso’s (2004) article on conceptual categories. The authors used Baum’s story in a different way than I, but their argument was relevant. Their purpose was “to demystify” the process of constructing conceptual categories and to reveal, as Dorothy did in the Wizard of Oz, the person “behind the paraphernalia” (p. 474), that is, the wizard-researcher.

The authors (2004) pointed out how researchers “tend to hide [themselves] in [their] writing” (p. 474), masking subjectivity with the rhetorical construction of objectivity—the kinds of things, in fact, that I used to draw my own students’ attention to. Richardson (1997), too, whom I read in the latter stages of the writing, similarly wrote of the “omniscient voice of science” that “suppresses individual voices” (p. 88). Charmaz (2002) argued, wisely, that researchers are “obligated” (p. 15) to take a reflexive approach, positioning themselves in rather than absenting themselves from the study.

And so I discovered, when “I found myself writing…,” that I had been erasing myself from the study. “Personal is important,” Linda counseled. I had to write myself back in. Doing so helped find a slightly more informal style (Creswell & Plano Clark, 2007) than I had been using. I was confronted by how important these issues of writing are to studies.

4.5 Ethical considerations

Approval for this research was provided by the Research Ethics Board of the University of Toronto, prior to contacting school boards, identifying cases, and collecting data. Because the study involved classroom observation and video-recording, it was necessary to work through school board ethics review boards. I submitted a request to conduct research to the three school boards. The following were explicitly addressed:

- a brief description of the study and purpose—and of what the study was not, for example, evaluation
• the voluntary nature of participation, including the right to withdraw at any time without penalty and the right not to answer particular questions
• methods, including classroom observation, interviews and discussion of teaching artifacts; researcher note-taking, audio-taping, and video-taping
• teachers’ control of scheduling and choice of class to be video-taped
• anticipated time commitment
• assurances, for example, of confidentiality; anonymity for the board, school, and teacher; the intention not to focus on students or disrupt teaching/learning activities; data security and disposal; absence of apparent risk
• sample Letters to Parents and Permission form
• details of the study (Information to Participants)
• contact information.

Only one school board had a formal review process in place; this was described on the board’s web site. Approval was granted to contact principals of the schools in which potential participants worked. Principal approval was sought electronically, via email. When principals had granted permission to proceed, teachers were contacted, again via email. The letter to participants and information for participants were attached. In the other two school boards, as advised, I contacted the Director of Education and the appropriate supervising officer. Once approval was obtained, I followed the same process as above, contacting principals and then teachers.

The Participant Information was reviewed with each teacher participant in person at the initial planning meeting. A version of the Participant Information was also shared with teachers interviewed as part of background and contextual data gathering. All school board employees have been given pseudonyms, and identifying features of boards, schools, and school board employees
have been altered or removed. Participants, like school boards, were promised a copy of the final report.

4.6 Limitations and delimitations

This study was affected by the usual limitations, most of which were anticipated during study design. For example, lack of funding affected study length and travel. That in turn affected which teachers/subjects/grades were within reach. Obtaining three stable observations (Desimone, 2009) would likely have required either nine observations and interviews in one semester or one and one-half semesters of observation and interviews—an unreasonable imposition on busy teachers. Timetabling and teaching assignments also prevented focusing on use in particular programs or grades.

Denzin (2002) recommended that researchers include in a study all that is relevant, including prior understandings, because these influence what the researcher perceives and how the researcher interprets the data. “To exclude them,” he writes, “is to risk biasing the interpretation in the direction of false objectivity” (p. 363). Conscious of this warning, I was concerned about my acquaintance with participants prior to the study. To a certain extent, this was unavoidable, given limited implementation across the province and my involvement with Question Structure as a consultant and education officer. I was conscious of Charmaz’s (2006) warning that past and present identities might “influence the character and content of interaction” (p. 27). I was heedful, too, of Glesne’s (1989) discussion of rapport (trust) and friendship in ethnographic research, but did not think that the study was biased, for example, by over-identification with a particular participant. And as Glesne conceded, while friendship is not conducive to an objective stance, it does facilitate inter-subjectivity. Like King (1974), I felt that friendships could provide “opportunities for insights otherwise unobtainable by an outsider” (p. 407, in Glesne, 1989, p. 50).
I believe the study benefited tremendously from my being an “informed reader,” or interpreter (Denzin, 2002, p. 363). I think prior knowledge of Question Structure facilitated my learning from participants, who differed from me in that they were actually using Question Structure in the classroom. However, I did find that participants made enormous assumptions about what I knew about Question Structure, their in-service experiences, and their use of it.

I have attempted to minimize bias in interpretation by taking a systematic approach to data analysis (Richardson, 1992) and by checking tentative interpretations with participants. I have included considerable data in various forms, both to substantiate plausibility (Eisenhart, 2002; Harste, 1992, p. 135) but also permit readers to critically evaluate these.

4.7 Looking ahead

Chapters 5 to 7 are the heart of the study. Chapter 5 focuses on teachers’ classroom uses of Question Structure. Chapters 6 and 7 focus on teachers’ professional uses of Question Structure, and on the conceptual metaphor emerging from the study.
Chapter 5: Classroom uses of *Question Structure*

5.1 Introduction and overview

Figure 5.1 Chapter overview
Chapters 5 to 7 are the heart of this study of how teachers use *Question Structure* in their practice. At its most concrete, answering this question entails describing what teachers did, how they did it, and why. Embedded also are considerations of frequency, pervasiveness, emphasis, pattern, and meaning. Bound with these considerations are the problems of repertoire-coherence, universality, and educational measurement.

One category of use of *Question Structure* is use in classroom teaching/learning activities. Table 5.1 (next page) summarizes components explicitly taught to/used with students. (In *Question Structure* terms, the table explicitly identifies Parts and Functions.)

Overall, teachers’ uses suggested three broad ways students used *Question Structure* components (Figure 5.2):

- **following steps** (such as Gayle’s use of the question-answering strategy)
- **working with processes**—planning writing, note-taking, analyzing, organizing, constructing understanding (such as Mark’s use of Agenda/Narrative Structure)
- **using structures heuristically** as holistic, open-ended, and generative thinking tools (such as Keith’s use of PFC).

The directional arrow indicates this an overall movement from following specific, step-by-step directions to purposefully generating possibilities.
<table>
<thead>
<tr>
<th>Table 5.1 Instructional function of Question Structure components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Snapping questions into Given and Requested; Requested Words (TORI)</strong></td>
</tr>
<tr>
<td>Gayle</td>
</tr>
<tr>
<td>• identify what the question is asking for</td>
</tr>
<tr>
<td>• identify the number of Requested items</td>
</tr>
<tr>
<td>Identifying Type of Match (TOM: Locate, Cycle, Integrate, Generate)</td>
</tr>
<tr>
<td>Gayle</td>
</tr>
<tr>
<td>• clarify how to answer the question (TOM)</td>
</tr>
<tr>
<td>• use Four-Step Strategy for responding to all questions for developing topic sentence (T-charts)</td>
</tr>
<tr>
<td>• connect Integrate &amp; Generate questions to reader response journals</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>To create questions (according to Type of Match)</td>
</tr>
<tr>
<td>Gayle</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>T-Charts (Expository Structure)</td>
</tr>
<tr>
<td>Gayle</td>
</tr>
<tr>
<td>• writing opinion paragraphs</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Agenda Structure</td>
</tr>
<tr>
<td>Gayle</td>
</tr>
<tr>
<td>• implicit in rationale</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Parts, Functions, Connections</td>
</tr>
<tr>
<td>Gayle</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td></td>
</tr>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
In lessons I observed, Gayle used a highly structured, step-by-step approach to the Four-step Strategy and T-chart. In these cases, the strategies and structures were new to students. Mark and Keith also emphasized a step-by-step approach to Expository Writing with their grade 10 students. Following highly structured steps was linked to clarity and explicitness in direct instruction and to the idea students could do the task at hand. This did not preclude attending to context—for example, a specific text or particular problems of understanding. Indeed, while the steps may have been algorithmic, the thinking involved was not. This was evident, for example, in Gayle’s interaction with a student who was not distinguishing between change and improve when Snapping a question for a T-chart (Appendix P). In addition, considered abstractly, the steps appeared mechanical. I worried that thinking might likewise be mechanical and superficial. However, while this may have been true initially, this quality did not persist over time. In addition, there was an overall movement towards varying structures and steps according to context once students had developed understanding of and automaticity with basic steps. Keith, for example, spoke of encouraging senior students to modify Expository Structure to suit their purposes, audience, text, and so on. This is discussed further below.

Mark, Keith, and Dawn used Type of Match, Agenda/Narrative Structure and PFC for both convergent and open-ended processing. (Dawn also made extensive use of Lists for this purpose.) Keith—and to some extent Mark and Dawn—had students use these to generate information and questions.

I was struck by how these three functions reflected Hardt’s (personal communication, March 20, 2010) comments on knowledge modeling. These teachers’ students interacted with these models (structures) to process information (third level, after pictorial and diagrammatic).

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41 Knowledge modeling was one of Mosenthal’s interests (see for example Mosenthal & Kirsch, 1991a, 1991c; 2002 f, 2002g, 2002h). Hardt (2010) commented that knowledge models indicated a broad trajectory in learning, but “didn’t drive anything” in Question Structure development.
Eventually, they were encouraged to use processed information to modify their actions (highest level of knowledge modeling: procedural). Hardt associated the procedural knowledge model with the freedom to “do anything you need or want to do” and with the ability to generate an infinite number of models.

Gayle’s focus on step following may have been a function of the age/grade or ability of their students, teachers’ experience with Question Structure, their implementation contexts, or beliefs about teaching and learning. Richardson’s (2003) critique of constructivist pedagogy may also be relevant. Richardson argued that constructivist teaching may be “an imposition of an inappropriate pedagogy on students who are not part of the dominant culture” (p. 1633) and provides an example of a teacher-centered Afrocentric school community focused strongly on community and life goals, as well as academic goals. I tentatively suggest that Gayle’s parental role, the emphasis on coordinated staff efforts, and the sharing of responsibility for the school’s needy and challenging students raise similar issues. The school’s demographics and catchment area stand in stark contrast to Keith’s, with its proximity to universities and high-tech business.

5.2 Introducing Question Structure to students

Classroom teachers’ uses subdivided into introducing aspects of Question Structure to students and ongoing use. In addition to emphasizing steps, when first introducing aspects of Question Structure, teachers tended to frame strategies and processes as rational problem-solving. For example, from assignments, Gayle identified difficulties students had writing supported opinion paragraphs. The T-chart was presented as a Solution Set up—a strategy for writing more effective paragraphs. Invariably, the T-chart writing process was presented as an easy approach to something students found hard to do. Keith introduced question structure similarly, pointing to experiences students might identify with, such as not answering the
question asked. Question Snapping and Type of Match were positioned as strategies to solve those problems.

With respect to Expository Structure, teachers followed the developmental trajectory on the Scope and Sequence (simple to complex). Mark and Dawn used Universal Agenda/Narrative Structure when having students analyze texts. When students created their own agendas (goals and strategies), however, Mark used a simple form of Agenda/Narrative Structure: GASS. Keith reported that using a complex form (the Universal Agenda/Narrative Structure) for this purpose had not been successful. It seemed that focusing on Self, on personal goal-setting and strategizing, was a qualitatively different and more demanding task than analyzing Agenda/Narrative Structure in texts.

Over time, teachers changed how they introduced components to students, moving from replication to disassembly, modification, and staging. For example, they tended first to reproduce approaches Hardt had modeled, often using his materials. For this reason, their instruction tended to take the form of discrete, comprehensive, stand-alone lessons that students applied to course material.

However, teachers began to use their own materials and modify the approach, for example by dropping mnemonics, chunking instruction, changing terminology, experimenting with novel uses, and so on. It was interesting to observe how quickly teachers rethought how they instructed students in structures. For example, reflecting on her Type of Match lesson (Appendix O), Gayle was already thinking that the next year she would eliminate Hardt’s mnemonics and use her own materials.

In addition, Gayle began to disassemble her lesson in order to stage introduction of Type of Match. She planned to introduce Integrate and Generate concepts indirectly at a time
considerably prior to the Type of Match lesson—that is, when speaking to students in September about their reading response journals. Her thinking was that when she later explicitly taught Type of Match, she would be able to refer to concepts students already knew and strategies they were already using. This modification was prompted by Gayle’s realization that her reading response prompts (question prompts) required students to Integrate and Generate, which in turn suggested that Gayle was gradually becoming aware of how the same strategies underlay various parts of her program. This supported Gayle’s assertion that Question Structure “fit into” what she already did. (Interestingly, secondary teachers believed that what they already did fit into Question Structure, pointing to its program design role.) I revised my first impression that Gayle was “walking students through steps” (Conley, 2008, p. 94); the emphasis was on explicitly teaching a cognitive strategy.

Like Gayle, Dawn staged introduction of Agenda/Narrative Structure in her short story unit. She introduced concepts and language before providing a handout of the full structure. As was most often the case in secondary classes, the focus and emphasis were on subject-specific content—such as analyzing story structure—and not on Agenda/Narrative Structure (the innovation, or strategy). The structures were tools in learning, not the learning goal.

This example pointed also to the universality problem. I believed that teachers were connecting Question Structure to subject content and pedagogy. This assertion is based on the following: my understanding of the provincial curriculum in Ontario, teachers’ comments about what was important in their discipline, and on inferences drawn from what I saw in the classrooms and what I heard in interviews. For example, I analyzed lessons in terms of curriculum expectations (see, for instance, Appendix X) and in light of philosophical statements (in the front matter), and listened to teachers explain how they used structures to teach particular
kinds of tasks and thinking. These explanations indicated what they believed important in the discipline and seemed compatible with familiar mental models, such as the interactive relationships between reader, text, and context in reading. Teachers brought these mental models and their solid subject knowledge to Question Structure. In the end, I concluded that it was their experience and subject expertise made it possible to connect use of the structures to subject content and pedagogy.

In contrast to lesson plans I had seen two years prior to the study, I was startled by how much of Hardt’s approach Keith ‘let go’ when introducing students to Type of Match questions. His explanation was informal, brief, and focused only on Locate questions. Students moved immediately to creating the questions themselves. It was clear that Keith’s understanding permitted him to draw on his knowledge of Question Structure and use it flexibly for his own purposes. He also staged his teaching of the PFC organizer, keeping initial explanation to a minimum. Based on his experience, he believed that students required very little formal instruction in order to use the PFC—or indeed any of the structures. He then deepened and refined students’ understanding over the course of the semester. This was evident in his decision to reserve discussion of the Levels section of the PFC for whole-class discussion, as this was the most challenging form of thinking (involving, for example, synthesizing) and depended on students having first done the other kinds of thinking. This called to mind Conley’s (2008) Ms. Gunning: while it initially seemed that Keith was repeatedly using PFC as a graphic organizer, over multiple uses he intentionally and explicitly taught the thinking required to use it and linked that thinking to discipline-specific tasks.

These examples show how Question Structure structures and strategies became submerged and transparent: they were cognitive tools for accessing information, thinking
through content, or expressing thinking—rather than the focus of lessons. There was less conscious practising-to-use and more use-that-was-teachers’ practice and students’ practising. This was true even for highly structured processes, such as Expository Structure.

In addition, these introductions were increasingly linked, sometimes in complex and implicit ways, to prior and subsequent subject-specific activities, including uses of other structures. This kind of disassembling, staging, layering and forward-backward linking typified teachers’ use of components—and only became evident when I observed later lessons and listened to teachers speak about how they used the structures. As Kennedy (2005) noted, changes in practice are often difficult for observers to see because they are embedded in a complex, moving river of competing concerns, events and distractions. For this reason, some of the first lessons I observed seemed to be relatively traditional (see for example narrative description of the first lesson I observed in Keith’s class, Appendix K). I realized that I had to focus—over time—on teachers’ “learning priorities and … concerns” (Bussis, Chittenden & Amarel, 1976, p. 50, in Elbaz, 1980, p. 18) and lines of thinking (Kennedy, 2005). I had to consider both the “surface content” and the “organizing content” (Bussis et al., 1976, in Elbaz, 1980, p. 17). These became apparent over the three observations. As indicated earlier, this was how I thought of practice, as opposed to practices.

5.3 List Structures

5.3.1 Introduction

Mark did not explicitly refer to List Structure. Keith indicated awareness that Agenda/Narrative and Expository Structures are built on List Structures, which in turn are built on Parts, Functions, Connections (PFC). His explanation of inferencing (generating a label for a
group of items) indicated this conceptual understanding of lists, but it was not named or otherwise made explicit to students.

I had expected that teachers might use List Structures to teach students how to read and use matrix documents and to focus on relationships between items in lists. This was not the case. For example, although Gayle described literacy in geography as significantly different from literacy in Language Arts and history—because of the documents—she indicated that she not teach students document structure and strategies with respect to those text types.

Gayle did address the *conceptual* understanding of lists when teaching her students the T-chart, though she did not articulate awareness of the connection to List Structure to me. For example, her students struggled with listing Details *relevant only to* the opinion statement (Answer/topic sentence). In other words, they were struggling with selecting list items (Details) that were related to the list label (topic sentence/Answer); that is, with issues of providing evidence and making a coherence argument.

### 5.3.2 Dawn

Dawn indicated that her frequent use of charts (which she understood as lists), was “*enhanced*” by her understanding of List Structures. She had students use lists to identify examples, analyze, summarize, make comparisons, and identify patterns (in *Question Structure* terms, Types of Processing). Sometimes, Dawn used charts (usually combined or intersected lists) as tools for recording and summarizing. See, for example, Figure 5.3 (next page). The chart labels were the prompts that focused (defined and structured) media students’ viewing. Students’ recorded observations were the evidence (Details) that they then used in discussion of values and ideology implicit in the television program.
Often, Dawn provided students with charts in which the labels were not identified. For example, when studying mythology, grade 9 Enhanced Academic English students worked with an intersected list on which to record characteristics of multiple stories involving floods. Omitting the labels compelled students to identify and label features of patterns, such as the role of an angry god and the great duration and area of the flood. This is not only an example of higher-order thinking, but also illustrates Dawn’s willingness to relinquish some control of content: she replaced teacher explanation with student-generated interpretations of text.

A similar shift is evident in Dawn’s use of a chart used on a final examination (Figure 5.4, next page). In preparing for the Socratic Circle that comprised part of the final examination, students used the chart to compare (sight) texts. They then used these notes to

![Figure 5.3 Dawn’s note-taking chart for Media Studies](image)
generate a “connecting question,” which they then “answered” by completing a T-chart. In other words, students determined issues to be discussed and supported their discussion of those issues with textual evidence. Dawn said:

They got into some stuff I would never have predicted, some of the connections they were making! And they were connected to a lot of the texts that we had read and watched and listened to during the year too. I was really impressed with what my kids did.

Figure 5.4 Dawn’s Socratic Circle exam preparation matrix (originally printed on 11 x 14” paper)

![Socratic Circle exam preparation matrix](image)

It is not that other teachers do not use matrices similarly, but that Dawn’s use was highly intentional and informed by her conceptual understanding of List Structure and her beliefs about
student learning. Dawn’s use of these list structures reflected important principles in her teaching:

- Use structures to address thinking valued in the discipline (and address curriculum expectations)
- Use structures to focus in on individual Details and to make connections more holistically
- Reduce cognitive load so that energies can be directed to learning and higher-order thinking rather than, for example, to writing out answers to numerous questions
- Facilitate collaborative work, to enact the idea that collective intelligence is greater than individual intelligence
- Allow questions and categories and unique ways of thinking to emerge from analysis, rather than predetermining these
- Use in assessment and evaluation structures previously used (practised) in instruction.

5.4 Questions - Snapping

All teachers explicitly taught students how to Snap questions based on their structure to identify Given and Requested information. This was regarded as an essential cognitive strategy
for clarifying tasks, specifically the type of information and number of Requesteds students were to provide. Doing so addressed problems identified by teachers: students often did not answer the question asked; nor did they always answer all parts of the question. Teachers seemed to recognize that clarifying the reading task was characteristic of effective readers (Wong, 1985) and they encouraged students to question questions—that is, identify when questions were unclear or ambiguous. Neither teachers nor texts were regarded as infallible authorities or as having the sole right to ask questions. As with other apparently simple structures (for example the T-chart), teachers believed that the effects on students’ learning (in Clarke & Hollingsworth’s (2002) terms: salient outcomes) warranted the frequency of and emphasis on this activity.

A persistent theme in the interviews was the idea that apparently simple structures had considerable impact. About the structure of questions (Snapping and Type of Match), Gayle said:

... there’s never a dull moment. It’s exciting because it’s foundational to learning, whereas a KWL isn’t foundational. But understanding how to answer questions, and being smarter about answering questions, and understanding the structure, the system of questions, and being able to question teachers about their questions, and knowing what questions are asking, what is requested of you … helps students
to take control of their learning and to be active rather than passive. (emphasis mine)

Relevant posters were prominent in Gayle’s, Mark’s, and Dawn’s classrooms (Figure 5.5). (Keith was a minimalist when it came to handouts and posters.) In addition to wall posters, a list of Requested Words was taped to each desk in Gayle’s classroom (Figure 5.6). Mark’s grade 10 students had a similar list in their class folders (a manila folder notebook for current work kept in the classroom). All teachers seemed to be using their own materials and content.

Gayle’s were the only students who practised Snapping lists of questions used in reading-to-learn activities (Guthrie, 1984). Gayle used questions in reading-to-learn activities in history. Working with short, relevant texts was a way of ‘covering’ curriculum content. It was clear that some students were still struggling with this new way of consciously thinking about the meaning of questions and with defining Requested Words, such as ‘why’ and ‘how.’ Gayle often began with questions provided with the text selection, but seemed to have become increasingly critical of such questions and inclined to revise them and/or create her own (discussed in the next chapter).

Secondary teachers also indicated that their students benefited from the strategy. Keith, for example, posed the question of why students should/should not study Shakespeare (a high-level task requiring students to evaluate the value of Shakespearean text for contemporary adolescents, integrate research and classroom experience/discussion, and to write a sound, supported, persuasive argument). Keith said that his grade 10 students hadn’t recognized that the question asked for reasons and hadn’t realized that that meant that they were explicitly to frame information as reasons. He said: “That was very helpful when it came to developing a thesis, because initially they were saying, he does this, he does this, he does this. They were all over the map” (emphasis Keith’s).
Secondary teachers were highly selective about the questions for which they required extended written or oral responses, and made sure that these questions were ‘Snappable.’ *In contrast to previous practice,* secondary teachers tended *not* to distribute teacher-created, student-created, or commercial resource questions on texts for students to answer in their notebooks. When Mark did distribute questions, in Grade 10 Applied (Figure 5.7), the purposes seemed to be connecting students to short texts and structuring the reading activity. The Snapping format made explicit the range of types of information addressed and Type of Match strategies used. When I observed this use, Mark seemed to be using the questions to shift the focus to the students: they were seated in groups and called on peers as much as on Mark for assistance. Usually, this meant that students worked at their own pace through materials, so that Mark differentiated instruction, moving ahead with some groups while others continued working.

*Figure 5.7* An example of Mark’s Snapping format (excerpted from a handout). RT, RTR, S & S, BD are abbreviations for Right There (Locate), Right There Repeater (Cycle), Smash’n Stash (Integrate), and Brain Drain (Generate) questions.

<table>
<thead>
<tr>
<th>Understanding Comics: Blood in the Gutter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. From the comic, what is the definition for the term “closure”?</strong></td>
</tr>
<tr>
<td>GIVEN: There is a definition for the term closure.</td>
</tr>
<tr>
<td>REQUESTED: What is that definition?</td>
</tr>
<tr>
<td>MATCH/PREDICT: RT</td>
</tr>
<tr>
<td>ANSWER:</td>
</tr>
<tr>
<td><strong>2. What are two examples of “closure” used in the comic?</strong></td>
</tr>
<tr>
<td>GIVEN: There are</td>
</tr>
<tr>
<td>REQUESTED: What are</td>
</tr>
<tr>
<td>MATCH/PREDICT: RT</td>
</tr>
<tr>
<td>ANSWER:</td>
</tr>
</tbody>
</table>
As this example illustrates, questions teachers did pose tended to be embedded in a suite of activities, so that Snapping was a cognitive strategy (eventually automatic and fluid) in a broader process. For example, Keith had students create and Snap questions based on completed PFCs and then write an essay response. Dawn had students create a “connecting question” based on a completed chart (List) prior to completing a T-chart and participating in a Socratic Circle. Because teachers’ questions tended to be the important, overarching inquiry questions that guided instruction and learning or provocative puzzlers to which answers were a matter of interpretation, teachers had moved away from embedding pre-planned (adjunct) questions in text.

Teachers experimented with how to format handouts so that the Snapping proceeded as efficiently as possible. This indicated that the Snapping was regarded as a strategy intended to facilitate other activities, and teachers made efforts to ensure that students’ cognitive energies were not unduly diverted from the learning focus (for example interpreting the text) to the Snapping strategy. Gayle, for example, provided fill-in-the-blanks for learning disabled students to lessen the burden of recopying. Mark’s handout (Figure 5.7), illustrated one formatting approach designed to increase efficiency. This was tied to teachers’ goal of increasing students’ automaticity. Mark’s format functioned as a “Quick Cut.”

Gayle indicated that there was evidence that students were independently Snapping questions in test situations (including standardized tests administered in-board), leading her to think that some students considered the cognitive strategy both helpful and transferable. Mark and Keith, who both taught grade 10 at the time of the study, indicated that Snapping might help students on the Ontario Secondary School Literacy Test (OSSLT). To my knowledge, Keith was

42 ‘Quick Cuts’ in Hardt’s skill packets refers to making notations directly on the question instead of writing out all the steps in thinking through Snapping. Keith uses Quick Cut as a metaphor for abbreviating processes after students have conceptual understanding. In short, Quick Cuts are a step on the way to automaticity.
the only one who specifically taught Snapping as “test-prep”—although he had qualms about the test and test preparation. He did, however, report anecdotal evidence of students’ use of Snapping and OSSLT success.

All in all, teachers seemed to have four goals. The first was to make visible the thinking involved in reading/understanding a question, and to help students who struggled with this thinking. Second, they emphasized active processing (see Weinstein, Acee, & Jung, 2011), and in particular the time and effort it sometimes required. They emphasized thoughtfulness and understanding rather than rapidity of response (see Nelson & Harper, 2006)—what Hardt has referred to as “the armpit rocket.” Third, they wanted question Snapping to become an automatic default strategy (a “Quick Cut”). Fourth, they wanted students to have the metacognitive knowledge and control to apply the strategy consciously when necessary.

Figure 5.8 Dawn’s Type of Match poster

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43 A teacher of grade 10 Applied history in another school board shared a curriculum resource he developed that embedded Snapping and Matching in the study of subject content. One of his goals was to prepare his students for the OSSLT. He directly taught and his students practised the strategy. The resource mirrored the OSSLT in format and types of questions. See Appendix R.
5.5 Questions—Type of Match

All teachers explicitly taught students Type of Match (Figures 5.8, previous page, and 5.9)—and Mark taught it before Snapping, even though Snap It precedes Match It in the Four-Step Strategy.

5.5.1 Identifying question types

Like Snapping, identifying Type of Match was a strategy for clarifying tasks. Gayle used Type of Match in ways similar to uses of QAR: to help students know how to respond to each type of question—whether, for example, they needed to locate a Detail in the text or to use the text as a springboard for generating their own information. Gayle stated that this knowledge made a difference to students, who were more persistent and independent in searching/rereading text if they knew that a detail would be found there (Locate). She said that their tendency was to assume that all questions were Brain Drains (Generate questions)—and panic.

5.5.2 Generating questions

Mark, Keith, and Dawn used Type of Match as a framework for students to create questions (Figures
and they provided students with regular opportunities to collaboratively create questions, in contrast to typical classroom practice (Gall, 1970, in Edwards & Bowman, 1996). Teachers saw question-generating as a way to cultivate an inquiring habit of mind (see Thompson (1989, in Edwards & Bowman, 1996). Dawn said: “Their curiosity’s gone. [They say,] ‘Can’t you just tell me what the question is?’” She attributed this to general social conditions. She said:

But I think that’s societal, isn’t it? I know with my own children, they don’t have to put much effort to find stuff. If they want to know something they go and push a couple of buttons and there it is. They don’t even necessarily have to ask questions. They don’t even know what they’re looking for or what they want to do. It’s just all there. Pre-packaged, and so we’re trying to engage them at that level too, so do we give them the pre-packaged lesson and do the song and dance and stuff? Or do we make them think, and if we make them think they’re uncomfortable and don’t want to do it?

Type of Match activities were prominent and consistent. All secondary teachers believed that Type of Match questions solicited a wide range in kinds of thinking and engaged students cognitively (and they believed cognitive engagement to be one condition for affective engagement). Type of Match categories became the four broad categories for talking with students about thinking.

The creation of lower-level Locate and Cycle questions was used as a strategy to increase “basic” comprehension and encourage close, purposeful reading and rereading of text. This was tied to a belief that higher order thinking about text is built on a solid foundation: knowing the Details. Both Keith and his students asserted that they “knew” the texts (emphasis theirs). Details identified through creating Locate and Cycle questions were the “building blocks” (Dawn) used
in higher-order activities, such as providing specific evidence for an interpretation. In a general way, then, the Type of Match framework seemed compatible with familiar mental models. Keith, for example, referred to a familiar literal, inferential, and extended understanding framework, which resembles the model Gudmundsdottir (1991) identified in her study of Nancy, an English teacher: literal, interpretive, applicative and evaluative. Locate and Cycle questions were often generated collaboratively and reviewed orally, either in groups or (less often and only briefly) whole-class. Students used each other as resources to make sure they could answer all the questions posed by the group or class. They were not required to answer these in writing.

As far as I know, Keith was the only one to address the significance of questions (and to insist on dealing only with those) and to test students on their knowledge. This points, however, to a principle evident also in Gayle and Dawn’s revision of curriculum materials (Chapter 6). The idea was not to create lots of questions, or questions for all cells of the Taxonomy, but rather to select purposefully those pertinent to constructing complex understandings of texts. Keith’s students were required to justify their questions; they did so by referring to a Detail’s function or purpose in the text (for example, to develop character) or by pointing to a pattern (similarity, contrast, motif). Keith regarded this as an important subject-specific task.

More emphasis was placed on students’ collaboratively created Integrate and Generate questions (Figure 5.10, next page). This reflected all four teachers’ emphasis on higher-order thinking. The student-created questions tended to replace teacher-created questions. All three

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44 A poster in Dawn’s classroom indicated that she did address the meaning of questions about the significance of a detail, pattern, quotation, and so on. But I’m not sure she addressed the issue of which questions might or might not be significant with respect to main ideas or issues.
secondary teachers believed that students were quite capable of articulating high-quality questions, which addressed everything the teachers might want to address. Mark said:

I think what has impressed me that … their Integrate, Generate questions are quite sophisticated, the kinds of questions I would ask. So I think the big difference with text now is that I don’t prep sets of questions anymore, ‘cause I know I’m going to do it with them. And generally whatever I think should be put on the table as questions… comes out in some form or other. So there’s a big relinquishment of control.

[Figure 5.1 Mark’s students collaboratively created Integrate and Generate questions (excerpted from handout)]

<table>
<thead>
<tr>
<th>INTEGRATE</th>
<th>GENERATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why are increasing numbers of women using infidelity sites?</td>
<td>What factors in the last 10 years can cause this massive increase in infidelity in women, as well as infidelity as a whole?</td>
</tr>
<tr>
<td>What changes in society might contribute to a rise in infidelity?</td>
<td>Why are some people so eager to cheat on their spouses?</td>
</tr>
<tr>
<td>Why did “Susan” decide to have an affair?</td>
<td>What does infidelity do to relationships?</td>
</tr>
<tr>
<td>What is the purpose of Ashley Madison?</td>
<td>Why would people enter into a relationship if they even think there is the slightest possibility that they will be unfaithful?</td>
</tr>
<tr>
<td>How is the Ashley Madison company targeting a female audience?</td>
<td></td>
</tr>
</tbody>
</table>

Teachers also commented that students created questions they themselves had not thought of, questions that opened new ways of thinking about the text. Possibly because of their experience and solid subject knowledge, Dawn and Keith were excited by these unanticipated perspectives and not at all anxious about not knowing ‘the answer’ or about controlling possible new directions in discussion. Their comments on students’ questions are congruent with King’s (1992) findings, but contrasts with Miciano’s (2004): Miciano found that students did not pose questions that indicated deep processing or that pointed toward important ideas and issues.
Students collaboratively generated and ‘checked’ understanding of questions (Snapping). This activity suggested that students were involved in creating and answering questions to which they didn’t necessarily know the answer—as well as being exposed to a range of perspectives (King, 1992). King (1992) work with prompts suggested that “freedom within structure” (p. 124) was an important aspect of question-generating. These teachers believed that they were supporting the development of independent thinking (what Keith called “voice”), and they used students’ questions in meaningful ways. For example, Mark and Dawn’s students created questions to prepare for Socratic Circles, including Socratic Circles in students’ final examination.

Teachers’ belief that student-created questions were valuable is congruent with Rosenshine, Meister, and Chapman’s (1996) observation that students’ creation of questions is a cognitive strategy that supports active processing and comprehension monitoring. However, it was unclear how much teachers attended to issues of authenticity or skills in question asking. I did not observe teachers attending to “rules of interaction” (Dillon, 1988) during collaborative
activity (though there was evidence that teachers explicitly addressed group dynamics (Dawn) and interpersonal speaking and listening strategies (Mark)). It would be interesting to examine student-created questions more closely. For example, do the questions articulate authentic perplexities and desire for knowledge? Could the Type of Match framework be combined with or compared to King’s (1992) generic prompts in student-generated questions? Are students developing ‘good’ questioning skills? (Graesser & Person, 1994, in Edwards & Bowman, 1996). Do the number and quality of spontaneous student questions in the classroom increase? (Graesser & Bowman, 1994, p. 105, in Edwards & Bowman, 1996, p. 7).

Even more interesting is the effect on teachers. Gayle, for example, indicated that focusing on questions and questioning questions may have shifted her classroom considerably in ways she hadn’t realized: in contrast to previous practice, students’ responses and questions often drove discussion, she did not plan every minute, and there was more “thinking discussion.” Secondary teachers, too, deliberately slowed down the pace of classroom activity. They put more emphasis on students’ questions and overarching questions than on students answering teachers’ questions. Snapping and Matching and creating questions was granted significant instructional time, indicating that teachers were making space for students’ processing—in contrast to the fast-paced recitation that typifies many classrooms (Nelson & Harper, 2006). I later realized that the power of the strategy (creating Type of Match questions) derived not only from explicit instruction on thinking, but also from its combination with collaborative student activity. Secondary teachers were conscious of relinquishing control to students; this was central to their efforts to implement constructivist theories of learning. In short, these apparently simple

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45 Consultants in a board not involved in this study shared a resource they created that included mathematics sentence stems. These stems were based on Requested Words and Snapping. For example, “Determine the midpoint of one side of your original triangle” was aligned with the stem “There is a location….”
activities were tied to a shift in teachers’ view of the role of the teacher (Kloss, 1988, in Edwards & Bowman, 1996).

5.6 Expository Structure

5.6.1 Writing constructed response

All teachers explicitly taught Expository Structure as a framework for writing constructed response. The idea that this kind of writing is framed by the question seemed to be powerful.

Gayle limited her focus to the simplest form, represented by the T-chart. Her purpose was to teach students to write single paragraphs in preparation for multi-paragraph/essay writing in grade 8, where colleagues also used the T-chart (Expository Structure). As might be expected, secondary teachers were using more complex forms of Expository Structure, for example for multiple paragraph responses and multiple texts.

Teachers’ approach to Expository Structure was highly structured: they tended to move step-by-step through the structure and the developmental progression in the Scope and Sequence (Appendix B). However, the structure and developmental progression seemed to provide a framework for addressing thinking issues and for differentiating expectations of and feedback to students. While students’ degrees of freedom pertained only to the content, teachers said that once students understood Expository Structure, they encouraged variation based on context. Generally, teachers expected students first to apply knowledge of the structure, then to play within it, and finally to play with it. Gayle, for example, said, “And once you know the structures, then you can start to mess with them, right? There’s [sic] lots of different structures, and if the kids get to know them, then they can work with them.” This was particularly true of Keith, who described how his approach “loosened” over the course of the grade 9-12 program in

46 The T-chart was also used for AFL (discussed further below). It is worth noting that mathematics teachers shared examples of how they used the T-chart for solving word problems. This use was built on question Snapping and understanding directives. See Appendix S.
his department. While at first he was fairly “strict” in having students adhere to the structure, by grade 12 students were required to make decisions about form and structure based on their sense of factors such as audience and purpose. In other words, these teachers tended not to regard the structures as closed: they provided a frame (stability, continuity) that eventually could be (should be) dressed and/or reconfigured (changed) depending on context.

Teachers believed that the T-chart was a structure that enabled students to do the necessary thinking, focusing, framing, and organizing. Repeatedly, I heard teachers tell students to “just move [information in T-charts] over” (Mark) and recast T-chart points as sentences. (The word ‘just’ was notable for its frequency.) Teachers emphasized how easy writing an essay was, and how all students could do it. The process of using the T-chart ‘to T up’ a response (align it to the question) and then generate an outline was regarded as an effective means of getting students over the psychological hurdle of beginning and finishing writing and of getting the bulk of the thinking work done before students even realized that that’s what they were doing. As Keith remarked, over 80 percent of the thinking work was completed during pre-drafting. (Keith also required students to generate a prose outline after the T-charts, which were often longer than the finished essay. (See Appendix V.)

As the insert on the next page illustrates, teachers and students were invariably surprised that the approach “worked.” It was in connection with Expository Structure, that I most often heard teachers claim unprecedented success for students (External Domain). Their success stories most often referred to students in grade 10 Applied. This was particularly surprising, I think, because students were doing more successfully things teachers had been teaching for a long time: writing multi-paragraph constructed response (including writing-on-demand, which is specified in the curriculum); responding to the prompt (using it to frame the response);
Writing comparative T-chart essays (Mark)

The topic was. So, we read a little. We watched. We finished reading. And so then, we got for writing, which was perfect timing.

So what I’ve set up. They had from before, where they did research into. So, their details become. Their answer becomes.

And so on the T-chart, kids are just identifying how? And basically their opinion. Like a recipe. They’ve completed, and they’ve done. So, 3 T-charts, which form. I’ve layered in, and because they’ve done, they can, (already been organized). They find, and reading, but they’re excited because they’re doing. Like, everyone can do because everyone has.

One who’s minimalist, and one who always writes and writes: He says, ‘I can’t.’ And I say, ‘You don’t have to, the way she does. But you have too, you do know. And how long is not. Can you?’

Sometimes I had to sit and say, ‘Just talk. I’ll type. You tell.’ And that got some over that. But they’re copying and pasting. And the exciting thing was I could say, ‘Okay, I have.’ And I’d open up, and ‘Do you think you can?’ So, I had them.

Now, the finer points, but some I can show and then they get. Others, it’s just going to be they find, of any kind, and stick it in. That will be good. That will be. But they’re all able.

They don’t realize, as they start, the hard part is. Initially they go, ‘Oh, I have to write all?’ ‘It will be all right,” I say. ‘You have done. Just move it over.’ And sudden hands just going: “Oh, I do! Okay. Finished!”

And so they’re seeing, and they’re doing. And when they finish, they email, so I have progressing and their charts. And so, the result. They have.

supporting the argument with evidence; smoothly incorporating direct quotations; elaborating quotations (the explanation in the familiar point-proof-discussion model); and using transitions. As an observer, I wondered if teachers gravitated to this highly structured, step-by-step approach because they believed it suited students in the Applied and College programs. I was thinking of Koopman et al.’s (2011) finding that prescriptive, highly structured
approaches dominated instruction of pre-vocational secondary students. They argued that this approach reflected teachers’ understanding of the students’ preference for surface processing strategies. I therefore wondered if the *Question Structure* approach resulted in superficial thinking and mechanical writing.

It did seem that teachers preferred the structured step-by-step approach because students perceived essay writing as difficult. When I inquired about the quality of students’ thinking and writing, Keith admitted that students’ writing was initially mechanical, but insisted that students moved rapidly to more fluid writing and deeper insights into the text. Keith shared numerous (anonymous) examples of student work arguing not only that the quality of work exceeded that of work submitted prior to his work with *Question Structure*, but also that the percentage of students *completing* the writing tasks had increased significantly and that students who were “behind” were able to “catch up” to classmates.

In addition, the Expository Structure seemed to highlight conceptual and pedagogical problems experienced teachers regularly encounter. The structure did not ‘fix’ these problems, but did seem to foreground them so that teachers could address them. For example, Gayle taught students how to use the T-chart to write an opinion paragraph (see Appendix O) for the question prompt “Do you

![Figure 5.12 Mark's methods of development handout](image-url)
think that trading furs with the French and English improved the way of life native peoples? Why? This question required students to state (a yes or no) opinion and provide reasons. The text she was using did not explicitly address the issue in the question, but did provide information that students could interpret to support either opinion. She modeled how to answer this question, and then “walked” students through the process of Snapping the question and completing the T-chart. As the script excerpt in Appendix O illustrates, understanding the question, formulating an opinion, and providing supporting evidence were issues for some students and required intense, unscripted teacher-student interaction.

Similarly, Mark’s grade 10 Applied T-chart lesson foregrounded students’ problems with summarizing Details in order to construct a topic sentence (Answer). Mark’s concern was to push students to more complex thinking. (See Appendix Q.) Mark noted that he needed to identify a strategy to assist his students

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47 Gayle deliberately worked with a single, familiar text to reduce cognitive load: she wanted to focus on a new skill, writing an opinion paragraph.
in summarizing Details. Indeed, the Expository Structure process does not preclude use of strategies, such as KWL, Place Mat, or Both Sides Now. In other words, the Expository Structure approach seemed to foreground thinking issues, while providing a stable framework within which to work.

The same situation was evident in Keith’s intensive work with grade 10 students on using Expository Structure for essay writing. Keith’s comments during this work indicated his awareness of the thinking problems students encountered in writing essays. He said: “[I]t’s one thing to know how to write an essay, but it’s another thing to be able to explain it to a student.” The Structure seemed to foreground and provide an occasion for addressing these problems. Keith commented that he was “really surprised” the first time he taught Applied grade 10 students about Leads (setting up examples and quotations) and Exits (elaboration and transition from one example/quotation to the next). He said, “I thought I was really going to have to struggle with them, and they got it” (emphasis Keith’s). In other words, he is focused on content pedagogy. Indeed, as Mark’s methods of development handout (Figure 5.1, page 149) indicated, teachers were addressing English ‘content’ by incorporating familiar mini-lessons into the Expository Structure process.

Use of the T-chart (Expository Structure) did not always culminate in written pieces. (See Figure 5.13, previous page.) As Dawn commented, like the other structures, the T-chart is a tool for helping students process and organize their thinking. As the example below (Figure 5.14, next page) indicates, teachers were embedding question structure and the T-chart into numerous activities, including making research notes.

It followed that teachers used the T-chart as a window into a student’s thinking. I was skeptical, thinking that notes on the T-chart would be too sketchy to reveal problems or nuances,
but the teachers were adamant that T-charts were extremely informative. (This assessment for learning function is discussed further in Chapter 6.)

Figure 5.14 Dawn's research matrix for the grade 9 Enhanced final examination (original printed on 11 x 17” paper)

5.7 Agenda/Narrative Structure

In contrast to Gayle, who tended to focus on concrete strategies (Snapping, Matching, completing a T-chart), the secondary teachers engaged students in processes. This was evident in their uses of Agenda/Narrative Structure and PFC.

Mark and Dawn made considerable use of Agenda/Narrative Structure. As indicated above, Mark used the structure in his grade 10 Applied classes as a tool for helping students develop problem-solving skills: setting goals, identifying internal and external obstacles (problems), and identifying strategies most likely to overcome obstacles and achieve goals.
(solution). In other words, he used it for assessment for learning (AFL, specifically, assessment as learning) purposes. His use reflected the Ministry’s (2010) description of self-regulation (Work Skill and Study Habits). He began using a simple Agenda/Narrative Structure (GASS model) to map units of study for students (Figure 5.15, below). Mark’s GASS Agenda identified what the broad goals of the unit were, what the students would be doing, and what achievement on unit evaluation entailed.

Before having students set their own learning agenda for the unit, Mark worked with them to develop individual learning profiles. Then students completed a blank GASS template (Figure 5.16, below), using Mark’s unit GASS Agenda as a model and point of reference. He
complemented this with a Zoom Strip (Appendix F), a tool for identifying a goal and for showing the relationship between motivation and values (why?) and strategies for achieving the goal (how?)

Figure 5.16  Mark’s GASS template for students’ learning agenda

In Mark’s experience, students had considerable difficulty with this Agenda activity. He observed that students—particularly those in his Applied and College classes—often could not identify positive qualities about themselves related to school, frequently confused goals with wishes, couldn’t maintain focus on a long-term goal throughout the unit, and selected unrealistic and punitive strategies. To assist students with the latter, he developed a three-page list of possible strategies, expressed in student-friendly language (Figure 5.17, next page). In addition, he conferenced with each student, though he observed that he lacked the time to monitor students’ progress on their Agenda in an ongoing way throughout the unit. Although he did not
say so directly, he seemed disappointed that the approach did not seem to improve students’
engagement or
achievement. Keith
concurred that
students had
difficulties
identifying strategies
to achieve learning
goals. I believe Mark
was still puzzling
over and playing
with this use of Agenda/Narrative Structure, which seemed to point to persistent problems these
students had in traditional school contexts.  

Mark and Dawn made considerable use of Agenda/Narrative Structure as a tool for text
analysis. As is evident in Dawn’s revision of her short story handout (see Appendix U), she
linked the Agenda/Narrative Structure to story structure and modified the template with the
language used in English classes to talk about story structure and story elements. Thus she easily
“covered” questions she might ask about story structure and elements, and facilitated
collaborative student work on the story. Dawn felt that, unlike teacher-created questions, the
Agenda/Narrative Structure was less directive and permitted more diverse ways of thinking

48 While research indicates that goal-setting supports efficient learning, Lave (1999) argues that the assumption that
learning ought to be goal-directed is not enough questioned. In contrast to goal-driven approaches, Lave suggests
telos and relations in apprenticeship. She provocatively suggested that learning is not “wholly an epistemological
problem” (p. 156).
about text. Like Mark, she used this structure to support processing and to replace her previous practice of having students respond in writing to a series of questions.

Mark described the Agenda/Narrative Structure as an “organizational” tool. That said, students used the structure to analyze the agendas of characters in *Vertigo* (thereby focusing on character motivation, conflict resulting from interacting multiple agendas, and plot complications and resolution), and subsequently to analyze Hitchcock’s agenda (how he manipulated the audience and for what purposes). Students then used the same structure to analyze the Agendas of two documentary film-makers (Figure 5.18, next page). Students then generated a writing focus from information summarized on the Agendas, for example, how effective the documentary was in achieving the filmmaker’s Goal. The Agenda notes functioned as a resource for writing the essay (Expository Structure). Mark said he was surprised (a recurrent theme) that the Agenda/Narrative Structure enabled him to cover “a boatload of [curriculum] expectations” in the mandated curriculum. (See Appendix X for correlation between Agenda Structure and provincial curriculum expectations.) This example illustrated how teachers used the same structure in successive activities, not only building students’ facility with a processing text, but also building program coherence. This example also showed how teachers were able to connect structures to subject content (curriculum) and pedagogy (structured collaborative analysis of text using labels as prompts and the interrelated parts to develop complex understanding. See Types of Requested Information).

Mark’s description of how he used the Agenda/Narrative Structure in his grade 12 University class illustrated changes in how he approached canonical text (*Hamlet*). He described his pre-Question Structure approach as “traditional,” meaning that he provided question sets for each act and led question-based discussion that depended heavily on students’ listening skills. He
commented that although he occasionally sketched a graphic or a note on the blackboard, generally he had not supported students’ listening or facilitated inclusive participation. The six-week long unit tended toward a “really close scrutiny of every single detail.” It was, he said, a “self-centered” approach that served his interests, rather than the students’ interests and needs. He added, “I’m not convinced anymore that that’s necessary.”

Figure 5.18 Mark’s Agenda Structure labels for documentary film analysis handout (retyped for clarity; excerpt; original printed on 11 x 17” paper)

Documentary Film Agenda: How do *A Time for Justice* and *Walmart: the High cost of Low Price* exhibit the triumph and failure of the popular conscience?

<table>
<thead>
<tr>
<th>Film-maker set-up</th>
<th>Character</th>
<th>Goal set-up</th>
<th>Goal</th>
<th>Problem set-up</th>
<th>Problem</th>
<th>Solution set-up</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio about the film maker</td>
<td>film title</td>
<td>What is motivating the film maker?</td>
<td></td>
<td>Identify techniques for disposing of opposition arguments used in the film</td>
<td>What issue has the film maker chosen to bring to light?</td>
<td>List the methods of development used by the film maker. Quote specific examples.</td>
<td>Evaluate the success to which the film maker responsibly presents subject matter to the audience.</td>
</tr>
<tr>
<td>Credentials</td>
<td>film director</td>
<td></td>
<td></td>
<td>Identify syllogistic flaws or logical fallacies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td>film producer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify bias</td>
<td>subject matter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quote critical commentary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>About the film from reviews</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristics of documentary mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Mark’s new approach, student groups “talk[ed] way through [plot] questions”—‘Right There’ questions.49 Mark limited time to ten minutes and gave students the responsibility to “make sure everybody at [their] table understand[ed] the Details.” Mark said, “And they just power[ed] through them.”

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49 It was unclear whether these were teacher- or student-generated.
Students also collaboratively completed an Agenda/Narrative Structure for each act of the play. Mark described this as an “alternative” approach. Mark was interested in studying Shakespearean tragedy. Students used the Agenda/Narrative Structure “to track how things break down.” How things break down, Mark said, “is the crux of the whole play.” This focus was tied to the study’s overarching question: “Why does Hamlet have to die?” Mark believed that all interpretations of Hamlet stemmed from that question. For example, is he a melancholic, self-destructive force given a task he just can’t handle? Does he think too much? Is he a morally superior individual attempting to act in a world of corruption and appearance?

Mark used the Universal, or most complex form, of the Agenda/Narrative Structure because it “disaggregated” Hamlet’s agenda into specific, inter-related parts. Mark also thought of the Agenda/Narrative Structure as being transactional: one character’s Solution set-up becomes another’s Goal/Problem. He was considering asking student groups “What is Claudius’ Agenda? Are his and Hamlet’s competing Agendas? What’s the ghost’s Agenda Structure? Or Gertrude’s?”

In addition, Mark thought that the Agenda/Narrative Structure encouraged students to ask questions. In other words, it was not only analytic but generative.

Another emphasis was the “enigma” of the play, its ambiguity—and questions to which there were no easy answers. For example, he asked, “Why did Macbeth die?” (students had studied Macbeth the previous year), prompting a rich discussion of the differences between Macbeth’s murder of Duncan and Hamlet’s of Polonius. He also provided what he called “lingering questions.” These questions required high-level thinking (Integrate and Generate) and pointed to multiple interpretations of the play. Examples included the following: “Why aren’t we allowed to see the scene in which Hamlet confronts Ophelia? Why does he behave so strangely
to her?“ Mark put them out as “fuel for thought.” He believed that his students were engaged with the idea of Hamlet as a puzzle, whereas when answering question sets they would have said, “Oh, I don’t get this” or “I don’t know what’s going on.” As my own experience attests, working with textual ambiguity is a significant subject content and pedagogical issue in English.

Mark described his (previous) questioning approach as linear and fragmenting. He suggested that students sacrificed a sense of the whole when responding to question sets. He believed that the close scrutiny that characterized his earlier approach obscured the structure of the play and important issues. He described his “new” approach as both requiring understanding of the Details and being “more spatial…comprehensive, the big picture.” He saw it as “chunk[ing] large pieces of text.” He contended that this approach “helps [students] see what the important questions are.”

Mark’s comments on the Agenda/Narrative Structure pointed to a consistent theme in the data: the necessity (and value) of working with Details, the “big picture,” and multiple perspectives. This calls to mind Gaudelli’s (2001) discussion of identity issues, and specifically his juxtaposition of the rationalist (macro) and constructivist (micro) perspectives. Gaudelli argued that on the one hand, human beings are rationalists innately predisposed to thinking in terms of generalizations, categories, and universal principles and laws. Constructivists, on the other hand, argue for “understanding the multi-layered nature of diversity” (p. 77). Agenda/Narrative Structure, PFC, and the Mosenthal Taxonomy seemed to support both ways of thinking.

Mark also seemed to be thinking in terms of where his students were cognitively. (In Question Structure terms, he was de-pixelating and seeing from a learner’s perspective.) Mark believed that the Agenda/Narrative structure “[was] leveling the playing field”: use of structures
was regarded by all teachers as inclusive and as particularly supportive of less proficient students. Mark said: “Everybody can bring something and also get something from someone else. It’s a thinking tool that isn’t tied to your abilities. It allows students to “look at different interpretations.” Use of Agenda/Narrative Structure was combined with detailed literary analysis of the four soliloquies. These were “anchors” that he focused on “bridging.” He said, “That’s sufficient for who these guys are.” He was pleased that his students, who seemed to like the approach to the play, were more involved in discussion. He said that he sensed an energy and momentum in the class he had not felt before.

For Mark, then, the new approach had distinct advantages:

- it was inclusive: use of the structure does not depend on student’s abilities and facilitated collaborative discussion
- it was comprehensive, “holistic”: it preserved the sense of the whole text; it didn’t fragment it as series of questions did
- it was intellectually engaging
- it enabled students to engage with “enigma”—with uncertainty and ambiguity
- it linked to a significant subject-specific theme and the unit’s big question: Why did Hamlet have to die?

5.8 Parts, Functions, Connections (PFC)

Keith’s use of PFC (Figure 5.19, next page) was similar to Dawn and Mark’s use of Agenda/Narrative Structure: he used PFC across texts and units and activities, combined it with other structures, had students use it as a thinking tool, used it to emphasize connections and the ‘big picture’ even as it required students to clarify Details, and connected it to subject pedagogy.
Just as Mark’s senior students collaboratively completed an Agenda/Narrative Structure for each act of *Hamlet*, so Keith’s grade 10 Academic students completed a PFC for each act of *Twelfth Night*, section of *To Kill a Mockingbird*, each short story, and so on. In Keith’s class these notes were the product of collaborative work (C-IQ: Hardt’s acronym for collective intelligence) and posted on the class website (now a wiki), where they were accessible to all to use for study or as sources of information for writing.

Keith used the PFC as a comprehensive format that “covered” all kinds of information and many kinds of thinking. For example, students identified *important* Details, such as what characters did and said (Function); drew inferences about characters (Attributes); made connections to personal knowledge and other parts of the text (Connections); and identified
patterns and synthesized (Levels). The “basic Details” were usually accessed by student-generated Locate and Cycle questions, making connections and drawing inferences were accessed by Integrate questions, and synthesizing by Generate questions.

In a lesson I observed at the beginning of the semester, students independently completed a PFC for a short story. Although students were Locating and copying out speeches and actions (Function), a low-level task, students made personal connections to these (Connections), and made inferences about the character’s qualities (Attributes), both of which were Integrate tasks. Keith indicated that class discussion the next day not only verified the accuracy of Details students had noted, but also addressed the question of how these related to each other, why they were important to main ideas, and what they meant.

Keith used the PFC to support numerous activities. For example, when students generated theses for a character essay on *Twelfth Night*, Keith’s students generated a macro-label (Attribute) for actions and speeches (Functions). This macro-label became the thesis statement. (See Figures 5.20, this page, and 5.21, next page).
Keith believed making connections critical to students’ learning, and said that many of his (oral) questions of students and comments on text were intended to model and prompt this way of thinking. (Many of his questions began “How many of you have …?”) Students discussed the Levels section of the PFC whole-class, so that Keith could guide synthesis of Details into conclusions or themes. Keith devoted class time to modeling and collaboratively practising this

<table>
<thead>
<tr>
<th>PARTS</th>
<th>FUNCTIONS</th>
<th>CONNECTIONS</th>
</tr>
</thead>
</table>
| Sir Andrew | Quotes
  iii : iv: 271 – 274
  iii : ii: 37
  “These two quotes prove that Sir Andrew is a coward”.
  iii : ii: 4 – 6
  “This shows that Sir Andrew realizes that Olivia likes Cesario”.
  iii : iv: 140 – 141
  “Sir Andrew thinks that his letter is pretty good but actually it’s not”.
| Actions
  He gets jealous that Olivia likes Cesario.
  Sir Andrew challenges Cesario to a fight.
  He gets scared by the fear of fighting
  Sir Andrew gets forced by Sir Toby to fight.
| People think that they are not.
  Dumb. |

<table>
<thead>
<tr>
<th>ATTRIBUTES</th>
<th>MANNER</th>
<th>LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coward</td>
<td>He watches Olivia while she was talking to Cesario.</td>
<td></td>
</tr>
<tr>
<td>Convinced</td>
<td>Writes a letter to Cesario to fight and asks Sir Toby and Fabian to convey his letter.</td>
<td></td>
</tr>
<tr>
<td>Not very brave</td>
<td></td>
<td>Unless you follow your heart, you will not be able to word it.</td>
</tr>
<tr>
<td>Simple minded</td>
<td></td>
<td>Be who you are.</td>
</tr>
</tbody>
</table>

Theme:
Be who you are and embrace it because it will be in your benefit one day.

Supporting points:

- Cesario causes problems because he hides that he is a female.
- Malvolio changes to obtain Olivia’s interest.
- Sir Andrew tries to build up to something he is not and cannot be.
high-level thinking skill, which, for him, was a very important discipline-specific activity. In Keith’s experience, students “struggle[d]” with writing thesis statements. “But,” he said, “once we did this, Parts, Functions, Connections, and applied it to the essay that they were writing, they were able to do it in under twenty minutes.” Keith observed that finding a way to teach students how to develop thesis statements shifted the emphasis from the ‘dreaded’ task of thesis writing to making a sound and reasoned argument, allowing him to direct more attention and energy to supporting students’ thinking and writing.

While Keith acknowledged that there were other approaches to thesis writing, and arguments for having students respond to others’ perceptions and arguments, for him this approach was more effective. He said, “…that’s what I’m finding more and more. It’s inductive reasoning I like and I think that’s important because I think you stay truer to the text rather than imposing.” He added, “It makes so much sense” (emphasis Keith’s).

This approach “fit” with Keith’s belief that essay writing (indeed all academic writing) is “scientific” rather than “subjective,” a belief he attributed to his training in history. Completing PFC charts was akin to “scientific” observation and articulating a thesis to formulating a hypothesis. He commented that when students jumped directly to thesis statements (Levels), their statements often did not reflect the Details and instead distorted the text. He believed the approach addressed a common student misconception about essay writing—“you have a thesis first, and then you pull in examples to fit it, to prove it”—which he attributed to teachers assigning essay topics. His experience was that his use of PFC to inductively develop a thesis was a revelation to his senior students. He said, “They were blown away. They said, ‘How come we haven’t been taught that way?’”
Keith build a specific (and innovative\textsuperscript{50}) subject-specific application of Type of Match on the PFC. Identifying quotations was a typical (and traditional) English assessment task in Keith’s department: students identified the speaker and occasion of quotations excerpted from texts and explained their significance. Doing so was believed to demonstrate that students had read (knew) the text and could explain the function (importance) of particular events or statements to the whole. This required understanding of character, theme, conflict, and so on. A student, noting that class PFCs for \textit{To Kill a Mockingbird} included 125 important quotations, complained that it would be impossible to memorize that many. Keith’s lesson, which was really a lesson on how to Integrate, showed students how to identify Details, or clues, in the quotation and connect these with prior knowledge of the text to identify the speaker and occasion. He said that at that point, students had no difficulty explaining significance, largely due to the number of times that they had reviewed the text (for example, creating Locate and Cycle questions) and due to their work on the PFC identifying significant events and quotations and their functions.

Keith thought that students \textit{liked} the approach\textsuperscript{51}—and that liking, more than teachers’ knowledge and interpretations, previously shared in lectures, built literary appreciation, an important pedagogical goal. Of his grade 12 students, he said,

…with this stuff, we have a far better way of teaching [students] to appreciate literature. I don’t tell them the sophisticated nature of \textit{Fifth Business} anymore. I \textit{used} to. They discover it on their own. Especially when they start making connections between the

\textsuperscript{50} Keith also described a new idea: using PFCs to compare texts. His thought was to ‘flip’ one of the two PFCs so that the Connections sections were side-by-side and use this juxtaposition to generate a comparative thesis.

\textsuperscript{51} Students’ liking was a recurrent theme, though it was described in a variety of ways. Keith asked about students’ liking as a precursor to asking about their learning. Mark spoke of willingness to cooperate and, in one case, of energy. All teachers focused on cognitive engagement (and success) as a way of generating other kinds of engagement.
characters and what they’re doing at the end of the novel and what they’re doing at the beginning….They start to figure it out on their own.

Keith saw structures as enabling students’ thinking without telling them *what* to think. In this way structures were supportive without being restrictive. This perspective seemed connected to Keith’s experience with Native literature (an interest of his; he had taught Native Studies until the latest curriculum revision). He said,

…in Native understanding of text, it’s not the teller, it’s the receiver, the recipient that determines meaning. And *I* think that structure-based does that, because suddenly—the text is important, but … *you* determine the meaning from it, based on your understanding of the structure of it.

Keith’s comments were congruent with Dawn’s and Mark’s comments on Agenda/Narrative Structure. They saw these structures as facilitating open-ended, flexible, and “unique” ways of thinking.

### 5.9 The universality problem

Embedded in the overarching research question “How do teachers use *Question Structure* in their practice?” is the problem of ‘universal’ strategy use and subject-specific content and pedagogy. Researchers have suggested that generic strategy use becomes increasingly less effective as students move into higher grades, which increasingly specialize in terms of discipline and program destination (Shanahan & Shanahan, 2008). Embedded in the overarching research question is the question of whether the universality of the structures and strategies was problematic for teachers and to what extent teachers’ use of universal strategies and structures ‘fit’ with content and content pedagogy. (See Table 5.2 next page).

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52 I initially equated ‘universal’ and ‘generic.’ However, it became apparent that there may be a distinction. This is discussed in Chapter 8.
For Gayle, the universality of Question Structure strategies and structures was an attraction. Even though she insisted on the “tight” content focus of the history and geography curricula (apparent in her seigneurial system lesson), the value of generic strategies lay in their accessibility to all students and in their transportability across content, subjects, grades, and contexts. These comments about transportability were echoed by the other participants. In
particular, teachers valued a structure that could be used “here, there, and everywhere” (Keith). As Dawn explained, the universality of the structure meant that students didn’t have to learn a new structure each time it was used. Instead, they refined their use of it, and used it in increasingly complex ways. The Scope and Sequence (Appendix B), which summarizes the simple-complex continuum for the structures, supported this approach.

I hadn’t expected to find that Question Structure built community across disciplines in the secondary panel. In my experience, much of the effort in the Think Literacy initiative was directed to finding ways of showing that many strategies were applicable across subjects, but the success of these efforts was relatively short-term. However, speaking about the use of the structures across subjects, Dawn said:

And that’s really helped build our professional community, I think. ‘Cause Joanne and I, as head of science, Joanne and I can stand in the hallway, and she can talk to me about Agenda Structure she used in 3U biology and talk to me about why it worked or why it didn’t work, and I get it. … the structures have created that professional dialogue between—can you imagine?—science and English. And I can sit and talk to Leola about T-charts or about Agendas and goal-setting [in math]. It doesn’t matter what’s being taught. (emphasis Dawn’s)

She added that on the school literacy committee, which she chairs, “[w]e’ve recognized that we’re more alike than we are different.” Giving the example of the same structures being used in science and geography, she continued:

What we found is we’re able to concentrate on the thinking that we have to concentrate on in English. And Joanne is able to concentrate on the thinking that is required in science. And because they’re using a familiar structure, in both of those classes, they
don’t have to shift gears. They’re just able to think. They’re able to clear their cognitive carpet of the structure, because it’s familiar, and that opens up so much more to their thinking. …So I love it when kids come in here and they say, ‘We’ve already done this.’ …So they’re making connections between courses. [singing] Eu-re-ka-a-a!

(emphasis Dawn’s)

Like Gayle and her colleagues, Mark and Dawn saw value in having students exposed to teachers using *Question Structure* over consecutive years. At the time of the study, Mark had made this possible by scheduling teaching assignments in his department so that he had the same students in grade 10 Applied as he had had in grade 9 Applied. Dawn said she hoped that “even if students don’t go into the next year having a teacher use [*Question Structure*], that it will be something that they will fall back on or remember or use in another course or something like that.” But she added, “[Y]ou “really need” kids coming from science into English and then from grade 9 into grade 10.” This suggested that repeated use of the structures was not simply repetition, but rather increasingly complex and contextualized use. There was more to learn.

As the discussion above indicates, while secondary teachers valued the accessibility and universality of the structures, strategies, processes and procedures, they were also discovering how they could incorporate discipline-specific skills, access content, and map discipline-specific kinds of thinking. While a frequent complaint about *Question Structure* in-service was that teachers needed to see how it worked in their own subject, yet the value of *Question Structure* accrued to those teachers willing and able to *do the thought-work required to make the transfer* to their subject. This suggested, not that teachers without strong subject knowledge gravitated to

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53 Several times, teachers indicated that it would be helpful were pre-service candidates and primary and junior teachers taught *Question Structure*. 
Question Structure, but that making connections to subject content and pedagogy depended on deep subject knowledge.

Teachers the Structures as a platform for ill-structured processes, such as reading comprehension and writing. For Mark, for example—who has reconceptualized provincial curriculum expectations as skills- rather than content-based—structures and strategies have become extremely important as a means of accessing text. One of his epiphanies was that in implementing Question Structure, he “covered a boatload of [curriculum] expectations,” which he is “obligated” to address, such as issues of perspective and audience manipulation. Another was that while the structures brought order, pattern, and clarity—a kind of certainty—, they could also be used to explore uncertainty. He used the structures, for example, to focus on issues, such as those in Hamlet, and to encourage tolerance of ambiguity and lack of clarity. As indicated above, Keith also was discovering how structures such as PFC enabled kinds of discipline-specific thinking. Keith commented that students could examine how postmodern authors “play with” structures; that is that structures can be used as tools to analyze even texts that don’t ‘fit’ the structure.

5.10 Looking ahead

While this chapter focused on how teachers used structures as strategies and processes in classroom activities, the next chapter focuses on how Question Structure influenced teachers’ conceptualization of program and teachers’ and students’ roles. In so doing, the next chapter examines further topics touched on in this chapter: program coherence and assessment.
Chapter 6: Question Structure in teachers’ own work

6.1 Introduction and overview

Teachers also used Question Structure for their own professional purposes. By this I mean that teachers used Question Structure for refining and developing curriculum materials, test design, and program planning. While I expected technical refinement of curriculum materials
and assessment, I was startled by the reach into program conceptualization, which was connected in turn to a shift in teachers’ stance, or orientation. Although I had hypothesized that the *Taxonomy* and explicit teaching of structures would contribute to coherence, I had not anticipated such far-reaching design influence. This finding pertains in unexpected ways, then, to the repertoire-coherence problem and educational measurement problem.

### 6.1.1 Definitions

I use the word *program* largely because of a comment by Mark that first alerted me to design issues and program as his primary focus. This word is in no way intended to call to mind a list of topics or genres or pre-packaged instructional materials, which in fact stand in opposition to the processes described here. For Mark, *program* called to mind “big picture” issues: how integrated parts function in the whole. For curriculum leaders like Mark, *program* refers to the entirety of (English) courses offered in his school, their purposes, and interrelations. In some ways, the word *curriculum* may be more accurate. Carr and Kemmis (1986), for example, wrote:

> To what extent is the curriculum to be found in a specific act of teaching or learning? To what extent does it refer to a programme of work across a whole year? To what extent is it to be understood in relation to historical circumstances and general educational policies? To what extent is it to be found in materials, and to what extent in educational practices? To what extent does curriculum refer to general systems, and to what extent to human encounters? (p. 20)

*Program*, as referred to in this study, points to the intersection of possibilities suggested by Carr and Kemmis. In this study, I was fascinated by how a focus on specific learning topics and problems evolved into thinking about “work across a whole year,” by how teachers were

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54 I am still overcoming the Ministry practice of limiting *curriculum* to the official, mandated curriculum.
integrating directives and policies with Question Structure, and by how handouts and individual practices shaped and were shaped by “big picture” thinking. I was struck by how program depended on being able to see this “big picture” (Mark) and also to see how individual parts nested and functioned within it. (In Question Structure terms, teachers needed to be able to zoom in and zoom out, to ask increasingly broad why questions and increasingly narrow how questions. See Mark’s Zoomstrip, Appendix F.) As indicated in the previous chapter, working between the local and global was a persistent theme in the data.

I must also point out that program does not refer only to instruction: assessment and evaluation are integral, interacting parts of program, as for example in Wiggins and McTighe’s (1998) backwards design approach. As the reference to Understanding by Design suggests, the concept of design is pertinent, in that it suggests intentionality and purposefulness in obtaining a goal or effect.

Teachers concurred that the Mosenthal Taxonomy was the heart of the learning system and the framework for their own work. See Table 6.1 (next page) for a summary of components and functions.

6.2 From technical application to design

The focus in Question Structure in-service (at least initially) was technical. For example, does this question Snap? How difficult is this question according to the Taxonomy? How do I scaffold questions on this test? This knowledge—which was connected to assessment literacy—was applied to analyzing and improving teacher-created and commercial teaching materials. Study data, however, demonstrated that this activity compelled teachers to rethink their practice.\(^{55}\) In other words, this narrowly focused refining process evolved into materials

\(^{55}\text{While Lawes and Santos (2007) assert that implementation challenges can be classified as technical, managerial, motivational (student), or attitudinal (teacher), my argument is that these are related. The data indicated that the shift}\)
development and curriculum planning. These processes tended to be part of even broader and deeper processes: re-designing and reconceptualizing lesson series, units of study, courses, and program. All teachers believed these changes to some degree made their classrooms more student-centered and constructivist.

Table 6.1 Question Structure components used for teacher purposes

<table>
<thead>
<tr>
<th>Mosenthal Taxonomy Four-step strategy</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td>- framework</td>
<td>• Snapping/analyzing questions to identify Type of Requested Information, Type of Match, and level of difficulty according to the Taxonomy</td>
<td>• Articulating global understandings, e.g., the seigneurial system in New France had significant impact on Canada’s history</td>
<td>• Articulating overarching questions, e.g., “Why does Hamlet have to die?”</td>
</tr>
<tr>
<td></td>
<td>• Composing clearer questions</td>
<td>• Scaffolding questions; eliminating non-essential questions</td>
<td>• Composing clearer questions</td>
</tr>
<tr>
<td></td>
<td>• Scaffolding questions; eliminating non-essential questions</td>
<td></td>
<td>• Scaffolding questions; eliminating non-essential questions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agenda Structure</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Goal-setting for a teacher professional learning session</td>
<td>• Unit planning, program design</td>
<td>• Implicit in focus on educational problems, goals, student participation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scope and sequence</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Guiding introduction and sequencing of Expository Structure</td>
<td>• Guiding introduction and sequencing of Expository and Agenda/Narrative Structures</td>
<td>• Guiding introduction and sequencing of Expository Structure</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall kind of use</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Refining, redesigning and reconceptualizing instructional approach to a topic</td>
<td>• Redesigning program and instructional approach</td>
<td>• Reconceptualizing teaching, orientation, and instructional approach</td>
<td></td>
</tr>
</tbody>
</table>

from technical revision (correction) to re-vision was bound with teachers’ practical knowledge about teaching, perception of salient outcomes, beliefs about student preferences, and so on.
The extent to which *Question Structure* prompted and sustained re-design and reconceptualization was striking. I realized that teachers’ re-thinking was not merely technical, but bound up with re-thinking how students learn and how persistent pedagogical problems might be addressed.

### 6.2.1 Revision of curriculum materials

#### i. Gayle’s seigneurial system assignment

Gayle claimed that the “biggest” benefit of *Question Structure* was that it refined her work. For Gayle this process began with technical question work—Snapping, identifying Type of Requested Information and Type of Match, and locating questions on the *Taxonomy* (level of difficulty). Gayle’s account of how her seigneurial system assignment evolved (See Appendix T) illustrated how technical refinement developed into redesign and reconceptualization. Working with her own questions resulted in

- clarifying the end goal of instruction and articulating it as a high-level question
- scaffolding questions to build to that high-level question using the *Taxonomy*, and
- eliminating non-essential (irrelevant), low-level questions on text content.

Gayle explicitly connected this work to Wiggins and McTighe’s (1998) backwards design, which she studied for her Masters degree. However, although she came to *Question Structure* with these principles in mind, it appeared that *Question Structure* helped put these into practical effect.

Although in the seigneurial system assignment the overall number of questions was not reduced, the type and level of questions changed significantly. For example, in her revision,
Gayle eliminated and/or rephrased the many *what* questions in her original version, understanding that these are less clear to students.\textsuperscript{56}

In addition, a preponderance of low-level (Zone 1 and 2 Locate questions) gave way to a purposeful and efficient progression of questions scaffolded along two dimensions—from Zone 1 to Zone 6 (Type of Requested Information) and from Locate to Generate (Type of Match) (Figure 6.2). These questions were sequenced in order of learning/order of difficulty, rather than in order of location of information in the text. This scaffolding prepared students to answer the key question of the activity: Why were the French in New France unable to defend themselves? According to Hardt (2010), questions establishing such a trajectory are “authentic” in learning situations. Most significantly, Gayle clarified *for herself* the global understanding that was the lesson’s goal and refined, redesigned, and reconceptualized accordingly. The new version was about understanding the big concept, not about ‘covering’ all the details in the text.

\textsuperscript{56} *What* requires a ‘partner word’—what name, what route, what duties—or interpretation of ‘what’ plus a verb—such as ‘what action’ from ‘What did so-and-so do?’ While other Requested Words point to level of difficulty, *what* is a ‘wild card.’ Most of Gayle’s *what* questions were Locate questions on content not pertinent to the global understanding.
### (a) Original Question Set

<table>
<thead>
<tr>
<th>Type of Requested Information</th>
<th>Zone 6</th>
<th>Zone 5</th>
<th>Zone 4</th>
<th>Zone 3</th>
<th>Zone 2</th>
<th>Zone 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Conditions</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Relational Conditions</td>
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<td></td>
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<tr>
<td>Status Conditions</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Purpose/Function</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Location, Action, Attribute,</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Amount, Time, Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person, Animal, Thing, Place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Match</th>
<th>Locate</th>
<th>Cycle</th>
<th>Integrate</th>
<th>Generate</th>
</tr>
</thead>
<tbody>
<tr>
<td>What could happen to habitants who did not perform their duties?</td>
<td></td>
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</tr>
<tr>
<td>Why did settlers want their land to be located along the river?</td>
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<tr>
<td>How were the rivers travelled in winter and summer?</td>
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<tr>
<td>What did they call the French settlement?</td>
<td>What were the duties of the habitant?</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>What was the main transportation route in New France?</td>
<td>What were the duties of the seigneur?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who owned all the land in New France?</td>
<td>What were the three cities of New France?</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>What hardships would the settlers have encountered?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Requested Information</td>
<td>Type of Match</td>
<td>Zone 2</td>
<td>Zone 3</td>
<td>Zone 4</td>
</tr>
<tr>
<td>-------------------------------</td>
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<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Person, Animal, Thing, Place</td>
<td><strong>Locate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location, Action, Attribute, Amount, Time, Type</td>
<td><strong>Cycle</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purpose/Function</td>
<td><strong>Integrate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status Conditions</td>
<td><strong>Generate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Zone 1**
- **Person, Animal, Thing, Place**
- What was the main transportation route in New France?
- What were the duties of the habitant?

**Zone 2**
- **Location, Action, Attribute, Amount, Time, Type**
- How much land was each habitant given?

**Zone 3**
- **Purpose/Function**
- What were the purposes of having a seigneur?

**Zone 4**
- **Status Conditions**
- List the differences between the seigneurial system in France and New France.
- How did the seigneurial system affect the distribution of land in modern times?

**Zone 5**
- **Relational Conditions**
- What people were required to make up the seigneurial system, and what were their roles?
- What conditions led to all the land being along the waterfront?

**Zone 6**
- **Generalized Conditions**
- Explain how the seigneurial system of land distribution impacted the lack of towns in New France.
As is evident from Gayle’s worksheet (retyped as Figure 6.2), the Taxonomy lay at the heart of this rethinking, providing both a stable framework and rationale for the ordering of questions. All of the teachers used this taxonomic framework (though not always so literally) as the “map” on which they plotted how to move students from lower-level thinking to higher-level thinking.\textsuperscript{57} (In fact, Hardt encouraged teachers to think in terms of a more general easy-moderate-hard framework, a simplified approach to the Taxonomy.) In addition, teachers’ revision of questions and tasks was informed by knowledge that test designers would use to develop assessments—for example that an indeterminate number of Requesteds is more difficult than a specified number of Requesteds. This did not mean that teaching and learning were driven by evaluation and measurement.

Gayle’s revision of questions was accompanied by two additional dimensions of design. First, this high-level thinking on Gayle’s part was bound with concurrent development of the Land Development Activity (see Appendix T). The Land Development Activity demonstrated that Gayle complemented question-answering with other kinds of activities that required students to generate original solutions to an ill-defined problem. This paradoxical synergy between clearly defined structure and ill-defined, open-ended problem-solving for both teachers and students was a theme common to all participants (and also characteristic of students’ work with Agenda/Narrative Structure and PFC).

Second, Gayle extended her thinking beyond this particular lesson. Concern for student readiness and program coherence resulted in Gayle’s introducing a beginning-of-the-year activity that prepared students for the Land Development activity. In this preparatory activity, students mapped the classroom and gave directions for visiting classmates. Thus Gayle increased program

\textsuperscript{57} Keith and Mark both posted the Taxonomy in their classrooms, and explained to students where they were located and how they ‘moved through’ the taxonomy during particular activities.
(course) unity and coherence. (In Question Structure terms, she was thinking in terms of Parts, Functions, and Connections.)

i. Dawn’s short story handouts

Dawn described her revision process for a lesson on Doris Lessing’s short story “Through the Tunnel” (see Table 6.3, next page, and Appendix U). This process illustrated how applying understanding of Question Structure and working within the framework of the Taxonomy resulted not simply in refining questions, but also in reconceptualizing pedagogy and the lesson’s connection to the rest of the course.

In contrast to Gayle, Dawn had identified her main inquiry question (on the significance of the story’s concluding sentence). As indicated in Chapter 5, the secondary school English teachers regarded being able to explain the significance, or importance, of a literary element or Detail to the whole as a higher-order skill central to discipline thinking. Dawn had placed this question first on the handout, implying that students were to respond to it before responding to the other questions. However, based on her new knowledge of the Taxonomy, Dawn realized that the other questions (on plot and conflict) should precede the inquiry question and prepare students to answer it. So, in the second version, to help students construct understanding and instead of answering questions on plot structure, Dawn had students collaboratively create a plot diagram for the story before responding to the main inquiry question.

However, Dawn said she then realized that she also needed to have the students focus on character and character change, in order to be able to respond to the inquiry question. She therefore revised the lesson again so that in the third version students worked collaboratively on Agenda/Narrative Structure, which entailed analysis of both plot and character. Of the collaborative work using the Agenda/Narrative Structure, she said, “I can’t believe how task-
oriented they are, and how absolutely different their agendas are. So there’s very unique thinking going on as they use these structures to ask questions and answer questions about the story.”

Table 6.3 Evolution of Dawn’s “Through the Tunnel” handout

<table>
<thead>
<tr>
<th>Version 1</th>
<th>Version 2</th>
<th>Version 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-reading:</strong></td>
<td><strong>Pre-reading:</strong></td>
<td><strong>Pre-reading:</strong></td>
</tr>
<tr>
<td>View short documentary film</td>
<td>Collaboratively complete Agenda/Narrative Structure (configured to reflect subject-specific language about story structure)</td>
<td>Collaboratively complete Agenda/Narrative Structure (configured to reflect subject-specific language about story structure)</td>
</tr>
<tr>
<td>Think individually about documentary</td>
<td>Individually complete 3 scaffolded questions:</td>
<td>Individually complete 3 scaffolded questions:</td>
</tr>
<tr>
<td>Discuss with partner (Think-Pair-Share) questions posed using Journey language</td>
<td>o Narrative qualities</td>
<td>o Narrative qualities</td>
</tr>
<tr>
<td>Free-write about quality of perseverance in context of documentary and journey</td>
<td>o Conflict</td>
<td>o Conflict</td>
</tr>
<tr>
<td></td>
<td>o Character (beginning, last line, significance)</td>
<td>o Character (beginning, last line, significance)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Individually complete Reader response: same topic, better sequenced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Snap question</td>
</tr>
<tr>
<td><strong>Post-reading</strong></td>
<td><strong>Post-reading</strong></td>
<td><strong>Post-reading</strong></td>
</tr>
<tr>
<td>Individually write answers to 3 unscaffolded questions:</td>
<td>Collaboratively complete plot structure</td>
<td>Collaboratively complete plot structure</td>
</tr>
<tr>
<td>o Concluding line</td>
<td>Individually complete 3 scaffolded questions:</td>
<td>Individually complete 3 scaffolded questions:</td>
</tr>
<tr>
<td>o Plot structure</td>
<td>o Narrative qualities</td>
<td>o Narrative qualities</td>
</tr>
<tr>
<td>o Conflict</td>
<td>o Conflict</td>
<td>o Conflict</td>
</tr>
<tr>
<td>Individually write Reader response: personal experience testing oneself</td>
<td>o Character (beginning, last line, significance)</td>
<td>o Character (beginning, last line, significance)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Individually complete Reader response: same topic, better sequenced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Snap question</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Complete T-chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Write paragraph</td>
</tr>
</tbody>
</table>

In addition, Dawn created a “Minds On” activity, involving viewing and writing-to-think, task that connected the story thematically to other texts. When asked whether “Through the Tunnel” had been taught in the context of the journey archetype (the course’s central theme), Dawn said (about the first version),

No, this was just a short story we studied, focusing on plot and conflict. … we would do a unit on short stories. So, there was no sort of coherence as far as how does this relate to the next story, other than the fact that it has a plot, and it may also have conflict.
By the last revision, the story was integrated into the study of the journey archetype and linked both to multiple texts, including film, and to the students’ own lives through reflective writing.

After completing collaborative activities, students individually responded to the inquiry question, using a T-chart (Expository Structure) to draft their answer.

Dawn’s revision of her “Through the Tunnel” lesson:

- attended to student readiness through pre-reading activity and scaffolding of activities
- reflected the gradual release model
- included a wide range of activities: viewing, discussing, reading, writing
- included more collaborative work
- asked students to make connections to self, to text, and to world
- used structures and strategies that students used regularly and frequently (so that they eventually no longer required explicit instruction, but were routine): Think-Pair-Share, Agenda/Narrative Structure, Question Snapping and T-chart
- connected the story in multiple ways to the unit and course, and
- enacted constructivist theories of learning.

Most interesting was how this process evolved into thinking about the entire course, in which this single lesson was an integral part. It was not only connected thematically, but structurally, in that students used the same structures across texts and genres—and ultimately, the final examination.
6.3 Program

6.3.1 Curriculum emerging from Agenda/Narrative Structure

As the “Through the Tunnel” example illustrated, the structures became the lenses and tools for encountering text and for preparing students to respond to complex questions. As the Chapter 5 description of Mark’s use of Agenda/Narrative Structure indicated, he also re-thought his approach to texts, such as *Hamlet* and documentary film. Contrary to my expectations, the structures were perceived as supporting complex (as opposed to simplistic) thinking, and as warranting (and rewarding) repeated use.

Like Dawn, Mark recognized that the “versatility” of the structures meant they could be used to support a variety of activities and content. In my experience, a common teacher complaint about differentiation is that it is difficult to design “equal” options. Mark realized, however, that the Agendas students had completed for *Vertigo* and the documentary films had “covered” what needed to be covered (curriculum content and kinds of thinking); and that students could use their completed Agendas in a number of ways, such as a resource for essay writing (Mark’s “default”) or as a tool for planning (creating) a documentary film. The vision Mark tentatively described entailed identifying task/course requirements *and* providing students with choices concerning how they might satisfy those requirements, including the order in which they did so. He said:

And, you know, when I think about how I’ll restructure this particular course, it would be nice to sort of build into that as part of the differentiation the option of essay or documentary, or you know, that’s sort of how we have checks and balances. “You didn’t do documentary last unit,” or “You did a media piece last unit…—or for your last project—so maybe that’s why you need to do a piece of writing.” Or, conversely,
“You’ve done nothing but writing, so….” You know. But I think the thing about the [program] arch is: at this point, there are pieces of it that haven’t got fully connected yet. But we’re getting there.

The structures provided a program “spine”: a coherent progression of interlinked tasks in a clearly conceptualized unit and course. The structures, apparently so simple, supported students in completing complex tasks that address a significant number of curriculum expectations at appropriate levels of complexity and nuance. Although design and planning processes seemed to be very conscious, I was intrigued by how they initially emerged spontaneously out of limited and technical applications of structures.

6.3.2 A learning curriculum

In some respects, Question Structure provided teachers with a (cognitive) learning curriculum. The Taxonomy mapped the terrain and teachers held that framework in mind when thinking how to move students from lower-order (“in the box”) thinking to higher-order thinking. (The “box” is indicated on the Taxonomy with a heavy line and on Figure 6.2 (a) and (b) with a heavy red line.) The structures (for example Expository and Agenda/Narrative Structures) also mapped a developmental route from simple forms to complex. In addition, the structures—and the strategies and processes predicated on these—provided lenses and tools for encountering text and for learning to engage in various kinds of thinking. Use of these was tied to thinking about how students learn, such as the following:

- learning could be described as a pixelization process, in which learners gradually increased cognitive “resolution” (pixilated their cognitive carpet)
- pixelization is synonymous with increasing cognitive complexity, which was conceived as an implication hierarchy—lower levels are inherent in higher levels
scaffolding could be understood as methodically building from the simple to the complex

as students developed automaticity in use of structures (thinking processes), they attended to them less explicitly (did “Quick Cuts”).

The teachers accepted that structures facilitated learning because they were universal: they underlay all content, from simple to complex. Effective instruction entailed the following:

- teaching students to use the structures
- being explicit and direct and thinking processes and criteria
- modeling
- providing students with sufficient practice to develop automaticity
- building in productive talk through collaborative use of the structures
- providing specific (descriptive) feedback
- building systematically through the “steps” from simple to complex, paying particular attention to the middle
- providing degrees of freedom within a structure
- repeatedly cycling through the structures across content, texts, activities, and so on.

*Question Structure,* in other words, provided a broad learning curriculum into which teachers integrated their official curriculum, texts, and so on. In fact, a significant finding was the extent to which principles of teaching and learning guided teachers’ use of structures: their use of structures was highly intentional and focused on learners. This was most evident in Keith’s case. Even though Keith’s official course of study listed genre-based units of study (as English courses of study often do), he conceptualized his program as a spiral learning curriculum in which students gained mastery of structures (ways of thinking, learning tools, and processes).
Keith asserted that he focused on “train[ing] the mind how to think.” For him, the primary tool for doing so was PFC. He said, “And now this year we’re kind of tying it all together in terms of Parts, Functions, Connections—having that as the foundation for Agenda Structure, for Question Structure, and then Expository Structure.”

This curriculum operated below the official curriculum. As Jennifer observed, *Question Structure* was a “continuum, not an activity.” Literature and content served as vehicles for developing learning, thinking, reading, and writing skills—reflecting a shift in thinking about the role of texts (the canon) in Language Arts/English. Keith understood the structures as *processes*: as a “methodology” for accessing, processing, generating and expressing knowledge. He commented that the students were “basically teaching themselves” because the structures “[break] it down.” Particular texts were less importance than ways of thinking and processes. In this way, Keith reminded me of Elbaz’s (1980) Sara, who was “concerned not with intricacies of literature, but with students and how they are learning, and with her own teaching and how it is evolving” (p. 278).

### 6.3.3 Implications for instructional units

#### i. Implications for lessons

Overall the lessons I observed or heard about reflected a conscious effort to shift from teacher- to student-centered activity, from lecture to collaborative work, from random or text-based organization to logically structured, goal-directed series of activities. All teachers seemed to feel less pressure to produce lessons in which they directed every moment and provided students with interpretations of text. Lessons were less complicated, less artificial or “cutesy”. Keith said of a professor at the faculty of education:

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58 I suspect that Keith *told* more than he intended. For example, when reviewing students’ collaboratively generated point-form chapter summaries, he posed probing questions and provided a gloss or commentary. While the latter
… he had mental set and all that stuff too. But this! *Bingo-bango-bongo*, away we go, and the kids are involved. It’s not me being the sage on the stage. It’s just so much more fun. In fact, I’ve got a theory that the lesson plan is killing education, ‘cause we make the connections for the kids. And they just sit there. …. [In contrast] They start to play with *[Question Structure]* and it starts to grow and grow and grow.

He added, “I know what I’m doing and why I’m doing it and how I’m going to get there. It’s just so much better. … My lesson plans are far more simple.” And indeed I was struck by the relatively bare wall, the absence of handouts, and teacher-created artifacts.

**ii. Implications for units of study**

Interestingly, *all* of the secondary teachers were in the process of moving away from organizing courses into units of study (typically based on genre). This seemed to be directly related to their thinking in terms of Agenda/Narrative Structure and in terms of the ideas about learning encountered in *Question Structure* in-service. For example, Keith said:

Well, here’s what I used to think: that every unit had a specific goal to it. I’m *really* rethinking that now. I’m thinking that every unit should emphasize your *ultimate* goal. And in that unit the unit is stressing the same skills over again, especially if you have to apply them. So that’s the way I see units. (emphasis Keith’s)

Mark and Jill also explicitly questioned the division of learning into units. Mark said:

… it does mean being much more open to not being tied to the idea that *x* must be done in this amount of time. In fact, the challenge is the whole concept of units, really, I mean, what other profession does anything by *units*? What do we do in *life* as a unit? ‘This is my *spring* unit”? (emphasis Mark’s)
Mark’s description of how his department was redesigning program and Mark’s description of the teacher as a GPS called to mind orienteering: the teacher possesses the map (the big picture), identifies the destination, and provides students with the tools (structures and skills) to find their way there. Describing in-process discussions about changing the grade 12 University program, Mark said:

Currently we’re teaching fiction, prose analysis, modern drama, Shakespeare, there’s an independent study unit which is a blog, French-Canadian novel—they choose the novel—and what we’ve been thinking we would do is teach the principles of prose analysis, non-fiction—that’s basically mid-term—and second half, group the kids into thematic study groups in which they’re going to work through essentially any collection of related texts. In the thematic study groups, the blog would become “more collaborative” because their study group would function as a “reading-writing group—peer group, support group.” Mark noted that the department would have to “[build] webs [of resources], as opposed to massive class sets of things” to support this program vision. Ultimately, the goal would be to increase options and differentiation. He attributed this thinking to Question Structure:

…it’s all coming out of thinking about the Taxonomy, and thinking about empowering students in their own learning, knowing that we’re going to spend six or seven weeks grounding them in fundamentals of structural analysis—which of course is the thing they really need for going on to university: how to read the text critically and how to examine that structure—and then say, “Okay, so we’ve done that.” We might then walk them through a sample of one of these, and then, start the release process. So, you know, “Set your Agenda. What are you going to do?”
At a late point in data analysis, I read Applebee’s (1994) article on (Language Arts/English) curriculum—and was struck by correlations to this study’s findings. Applebee identified the following as significant:

- Teachers’ sense of what they are doing and why
- Overall coherence and direction (to which students contribute)
- A focus on priorities
- Conversational action/interaction evoked by content and supported by relevant argument and evidence, and
- Helping students enter into the curricular conversation.

All of these were evident in these teachers’ classes. However, most striking was an additional point: “relatedness among the parts” that “makes cumulative conversations possible and provides a sense of direction” (p. 49). Applebee argued that while thematic teaching is one way to connect parts, theme doesn’t necessarily entail “rewaving … into a conceptual whole” (p. 49). The teacher, he said, has to “reconstrue the curricular domain” (p. 49). This seemed to be what I was seeing, in different ways, in Mark’s, Dawn’s, and Keith’s classrooms.

6.4 Assessment and evaluation

6.4.1 Implications for assessment of learning

Alignment of curriculum, instruction, and assessment has been a “critical feature” of recent reform (Roach et al., 2008). Roach et al. (2008) explained that alignment emphasizes “assessments and ‘expectations,’ the latter of which could be interpreted as standards, a written curriculum, or perhaps instructional content” (p. 160). As the examples above indicate, Question Structure supported—and perhaps promoted—a backwards design approach to curriculum design and instructional planning, in which learning goals (the desired result, or destination,
priorities, conceived globally as overarching questions and driven by inquiry questions) drive the design process. Rust (2007) similarly contended that programs “should” embody “the principles of constructive alignment” (p. 230). Assessment of learning figures prominently in backwards design in that the second design step is identifying how achievement of those goals will be measured (evaluated). As Wiggins and McTighe (1998) wrote, the teacher decides what performance will be accepted as evidence of students’ understanding. The third step is designing instructional strategies to prepare students to be successful in their demonstration of understanding.

Table 6.2 Design principles

<table>
<thead>
<tr>
<th>Design principles</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Used backward design</td>
<td>Integrated and aligned instruction and assessment</td>
<td>Aligned goals, instruction, and assessment</td>
</tr>
<tr>
<td></td>
<td>Used Taxonomy to scaffold toward global understandings</td>
<td>Conscientiously integrated assessment policy and principles, e.g., developing performance walls</td>
<td>Deemphasized oral communication because difficult to evaluate; felt pressure to provide marks for formative work</td>
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<tr>
<td></td>
<td>Was explicit about expectations and criteria</td>
<td>Modeled, defined, provided practice and feedback, and gradually released responsibility</td>
<td>Began to integrate assessment principles and practices, e.g., self- and peer assessment</td>
</tr>
<tr>
<td></td>
<td>Provided practice (not evaluated) and both group and individual feedback</td>
<td>Attended to scaffolding, particularly middle steps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used Taxonomy to clarify feedback about next steps for individual students</td>
<td>Encouraged assessment conversations</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Interpreted Taxonomy in terms of provincial Achievement Chart</td>
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</tbody>
</table>

The new Ontario Ministry’s (2010) assessment, evaluation, and reporting policy distinguishes between assessment of learning, assessment for learning, and assessment as learning. Assessment of learning is evaluation, also referred to as summative assessment or summative evaluation. While assessment of learning can be used formatively, typically it refers to a judgement made at the end of a learning period or sequence. Assessment for learning refers to a process in which classroom assessment is used to support learning. Assessment as learning is a type of assessment for learning in which students learn to assess their own work. It is metacognitive and associated with self-regulated learning.
The Agenda/Narrative Structure, which Hardt recommended for program design and instructional planning, incorporates the design back process. In other words, the design back process can be understood as developing an Agenda: identifying what the goals are, how to measure them, and how to achieve them (Solution Set-up) in a particular context (Where, When) for particular persons (Character, Character Set-up). For this process, Question Structure provided the metric—the taxonomic map, or framework—that enabled teachers to plan the learning route to the pre-articulated destinations.

Like Dawn and Mark, Keith was committed to this rational, purposeful, problem-solving approach. He said, “I think what we tend to do as teachers is to say, ‘Our end goal is this and how am I going to get them to engage in this?’” He was concerned with explicit alignment between goals, instructional approaches, and evaluation. Making explicit connections satisfied the principles of transparency and fairness. These explicit alignments, he implied, pointed to a more respectful relationship with students than resorting to “these cutesy little tasks” in an effort to “engage” them. He believed that students’ being able to connect tasks to “the end product” was more meaningful and motivating. He wanted more than compliance. He added:

Kids will do those [“cutsey” tasks], but they don’t make the connection between that and the final summative assessment. It’s something I’ve been really thinking about in terms of my teaching: to cut it to the quick, get down to the essentials, instead of all this peripheral fluff.

Dawn’s final evaluations also demonstrated this concern for alignment between instruction and evaluation. While this concern might be interpreted as valuing efficiency, Dawn seemed more concerned about transparency, fairness, purposefulness—on clearly identifying, focusing on, and integrating priorities.
For example, Dawn’s grade 9 course, which focused on the theme of the journey, culminated in what she called “The Journey Project.” In this project, students developed a portfolio of pieces in which they applied the archetype to their own life and supported that with analysis of half-a-dozen pieces, including texts they had studied and pieces they had written throughout the year. Ultimately, the curriculum was each student’s individual learning journey through the course. Throughout the year and in the culminating activity, students thought about journeys in a wide range of texts and made connections to their own life journey. The year also culminated with a final examination. For one part of that examination, students created questions and used List Structure, Snapping, and a T-chart to prepare for a Socratic Circle—all activities they had practised during the semester. (See Figure 6.3, next page.) Another part of the examination involved a dramatic oral presentation based on Internet research and the T-chart as part of the writing process.

Dawn attributed the conceptual clarity of her program to Question Structure. She said:

What the structures have done, it’s given me license to lose little things. If I focus on providing [students] with structures that run from the very beginning to the very end, and they work, and they reveal their thinking, and they help them organize, and they help them track their comprehension as well as their critical thinking. It really doesn’t matter what text I use. It doesn’t matter what direction I’m going in. If they have that at the core of each of the sections and they’re using it, and using it as a default strategy by the end, which is what I’m hoping, I don’t think it much matters what I’m teaching. So, I think it’s given me license to do that “big picture” kind of thing, and it’s allowed me to … reduce the amount of things I’m requiring them to do, and focus in on the really important things.
About her teaching approach in general, Dawn said:

I do tend to look in patterns. I do tend to look at things and try to make connections between them. … I'm all of a sudden at the place where I feel I'm teaching the whole kid, rather than the unit-based things. Although I do see structure within those too—parts, functions, and connections. But I love the way that we are now making connections between different forms and different experiences, finding the patterns within those.

(emphasis Dawn's)

Figure 6.3 Dawn's instructions for Socratic Circle portion of final examination

<table>
<thead>
<tr>
<th>STEP ONE:</th>
<th>Poem: &quot;Loyalties&quot; by Ron Borson (Poetry Alive 171) photocopy</th>
<th>Poem: &quot;The Stoker&quot; by David McFadden (Poetry Alive 181-183) photocopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Story: &quot;The Kayak&quot; by Debbie Spring (Language and Writing 9 33-37) text</td>
<td>Quote: &quot;Nancy Sims&quot; (Heroes: A Guide to Realizing your Dreams 171) photocopy</td>
<td>Profile: &quot;Nelson Mandela&quot; (Heroes: A Guide to Realizing your Dreams 174-175) photocopy</td>
</tr>
<tr>
<td>Media: <a href="http://www.youtube.com/watch?v=8AG4rGkC8U">http://www.youtube.com/watch?v=8AG4rGkC8U</a> (&quot;The Matrix: Joseph Campbell Monomyth&quot;) Youtube</td>
<td>Drama: &quot;To Thine Own Self Be True&quot; by William Shakespeare (Introducing Shakespeare 24) text</td>
<td>Movie: Up (Walt Disney Pictures 2009) DVD</td>
</tr>
</tbody>
</table>

NOTE: Also included in this package is a Poster: "Cultivating Character" (AMDSB 2010) photocopy

STEP TWO: Using the list structure attached, find possible similarities and differences between five of the sources above. This will become the "research" portion of your preparation. You will be responsible for handling this in work.

STEP THREE: From your initial reading and thinking about the sources (STEP TWO), create an integrate or generate question that will help you to narrow your focus for the discussion—consider how these sources reflect or address the stages of "Tests, Enemies and Allies, The Approach to the Immoral Cave, the Oedipal, the Reward or the Return Home (Resurrection, Return with the Elixir) and/or how they instruct us on the intricacies and patterns inherent to human behavior and relationships.

STEP FOUR: Transfer this question to the T-chart provided. You will submit this T-chart as part of your process.

STEP FIVE: When you have completed the T-chart, you are now ready to contribute to the Socratic Discussion with your group members.
All of the teachers seemed to be developing programs that reflected this sense of interconnectedness. Their program is not simply an accumulation of alignments. As Cole (1990) pointed out, ‘criterion-referenced’ is often interpreted as linking individual objectives from an “unconnected pool or list of objectives” (p. 6) to assessment items. The intention, he argued, was instead to align assessment to a learning trajectory: “a scale of increasing competence … corresponding to an instructional path building toward increasingly advanced forms of learning” (p. 7). This trajectory was particularly explicit in Dawn’s and Keith’s programs, both of which spiraled through the structures and Taxonomy in increasingly complex ways.

### 6.4.2 Implications for AFL

#### i. The Taxonomy

All of the teachers regarded the Taxonomy as central to the ongoing process of gathering information about students’ learning and using that information to improve students’ learning, thus contradicting assumptions that the metric was useful only for identifying and measuring students’ attainment of learning objectives.

Teachers used the Taxonomy constructs and Scope and Sequence continua as frameworks for identifying where students were, and, as Dawn commented, for figuring out where to go from

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**The Taxonomy (Gayle)**

The other big thing was: every student’s learning fits on the Periodic Table, so you can actually see they’ll reach a certain point and they can’t get past it.

And I never before had a visual means to identify where that was, and after that, the next thing they need to do.

I never found anything in education that clearly showed me what students needed. It was kind of they got it or they didn’t, and if you didn’t, that was really too bad.
Mark said: “The thing that I like … is the interventions. I feel like for the first time I have a framework.”

This is what Dawn meant when she said that *Question Structure* explained “[s]tudents’ thinking” and made it “explicit … public.” Dawn, indicated that her participation in *Question Structure* in-service resulted from a conversation with a board lead about the provincial emphasis on critical thinking, what critical thinking *meant*, how to recognize it, and most importantly, how to instruct students in critical thinking. She said, “How do we take kids and *move* their critical thinking?… How do we get those kids who are sort of at Level 2 or even a Level 3 to move into Level 4 critical thinking?” *Question Structure*, she said, “revealed” the steps.

Dawn used the *Taxonomy* as a “processing model” with which to analyze students’ responses to questions/tasks. For example, when she examined students’ T-charts (which included the Snapped question), she could identify precisely what the issue was—in terms of thinking. This enabled her to provide specific feedback. She explained:

So, when I get to their answer, I can go back and say, “Oh, do you know what? You tripped up on: This is a *way* question, this isn’t a *why* question. You’re tripped up on the *way*. You’re telling me the process and I wanted to know the reason, or vice versa.” And I’m able to go back to that thinking and say, “Oh, okay. Let’s take a look at your details. You’re listing step-by-step *how* this character changed, you’re not focusing in on the *reason why*. So, let’s-let’s pause here and can you add a reason to this now?” (emphasis Dawn’s)

She continued:

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She continued:

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Dawn refers in this quotation to Type of Requested information: students have not provided the information that was requested.
Whereas before I would collect paragraphs and look at it and think, “Okay, *how* did you possibly get this?” I had nothing in place to see that *how*, to see *that way*. And so I think it’s become more, I guess, “mathematical” in that way. Where there are steps, and the steps are specifically designed to reveal their communication or reveal their thinking or whatever. (emphasis Dawn’s)

This is tied to Dawn’s seeing herself, not as an evaluator of learning, but as coach for learning; to her emphasis on process, rather than on product. She said:

I think if you, as guide or coach, are willing to allow students the structures as not a final piece in their learning but as a process piece in their learning …I guess it would be formative stuff. Then it does become a tool for increased metacognition.

Ultimately, the goal was to help students develop the metacognitive strategies to control their own learning processes. Dawn illustrated how she believed her approach benefited students by referring to one of her former students, who was pursuing post-secondary studies in English. She said:

She’s learned what she needs to do to acquire information. So, as a student who’s able to reflect and make adjustments and things like that, makes her a lot brighter than a student who is solely content-based and may have a higher mark, but is unable to do the things that [she should be] able to do. And so, who’s more successful in their first year writing course?

**ii. Parts, functions, and connections**

For Keith, Parts, Functions, and Connections clarified classroom assessment, in that questions of various types and levels of difficulty map onto PFC (just as they map onto the
For example, “Identify two things Malvolio did” maps onto Parts; “Describe Viola’s character” maps onto Attributes; “Explain what you believe to be the most important theme” maps onto Levels in the PFC. Keith made this correlation explicit to his students. Several times, he mentioned a colleague—who had begun using Parts, Functions, and Connections—who said that for the first time he knew how to assess his students because he “could see where they are.” He confessed that he had been “faking it for twenty years.”

**iii. The T-chart**

All of the teachers used the T-chart to make visible students’ thinking. It was the basis of their feedback to students. Although I was skeptical (thinking that students’ work would be too sketchy to see thinking), teachers were adamant. Dawn understood the source of my skepticism. She said:

The T-Chart, … really does stand out as a pre-writing tool. Because of the openness. You look at it and go, “Okay, how could this be working?” It’s this little, simple, structure. But it really does. … I found this time round, because this is now my third go at it, I really was able to focus my comments on what I saw and what I didn’t see in their thinking. And I was able to see where they sort of tripped up, where they needed help with organization, and how their T-Chart could help them organize. So … I think those are some pretty good reasons to use that.

Mark provided a very clear illustration of how the T-chart could be used as a strategy to open a window into students’ thinking and to support both formative assessment and summative evaluation. (This was an example he had used with colleagues in a moderated marking session.)

The assignment, which he evaluated, required students to explain how the character in a film, Mel Fisher, illustrated the journey archetype in his search for the Atocha. In other words,

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62 These questions/directives (my examples) focus on Type of Processing, signaled by the directives (verbs).
students were applying their understanding of the journey stages to a new text. Mark wanted to know if students understood the journey stages, if they could identify these stages in the new text, if they could provide specific examples of the stages, if they could write a paragraph demonstrating this understanding. He collected three pieces: a preliminary graphic organizer, a T-chart, and the paragraph. In the particular example he showed me, despite mention of archetypal journey in the topic sentence, the student essentially provided a plot summary. In other words, the paragraph did not address the question; it did not provide the Requested Information: how the story reflected stages in the journey archetype.

Figure 6.4 Sample student paragraph from collegial marking

How does Mel Fisher’s search for the Atocha resemble the archetypal journey?

The ways that Mel Fisher’s search for the Atocha resemble the archetypal journey is because they searched around the whole ocean fir the boat and they found treasure at first in the shallow water. Then there was a storm that hit that night and then there was nothing else left after the storm hit, so they decide to move on to another place to search. Then he meet up with a archeologist again to show him the stuff he found and he ask him if there is anymore to the story or anymore place they could go. Then something terrible happened to Dirk Fisher, Angie and a crew member, they drowned and most of the other people on the boat jumped out, there was a leak in the boat and it tipped over. Then his son found two cannons in the deep water. So they decided to go a bit more deeper and they went to the bottom of the ocan and found more treasure and they seen wood from the Atocha. Then they seen the boat. They discovered more things that where on the boat. And he was trying to locate Mel Fisher’s boat to see where he drowned.
Taken alone, the evidence—the paragraph—suggested that the student did not understand the archetype. (See Figure 6.4.) The graphic organizer, however, indicated that the student did know the archetype and could provide examples from the text. (See Figure 6.5.) This was borne out by the student’s T-chart, which listed both the journey stages and the text details. (See Figure 6.6, page 198.)

Figure 6.5 Sample student graphic organizer

Mark explained that he had figured out what had happened by examining the T-chart: the student had had difficulty summarizing the Details as a topic sentence (Answer), and instead had
summarized the movie’s plot. This summary—a different kind of summary that identified key events but did not synthesize or interpret—had been copied and submitted as the paragraph answer. Mark said that he had been able to point out to the student exactly what the difficulty was and to address it so that the student was able to correct the problem. (In other words, Mark used assessment of learning formatively.)

Figure 6.6 Sample student T-chart

**QUESTION:** How does Mel Fisher’s search for the Atocha resemble the archetypal journey?

**GIVEN:** There are ways that Mel Fisher’s search for the Atocha resemble the archetypal journey.

**REQUESTED:** What are those ways?

**DETAILS:**
- **Ordinary World** – he owns a chicken farm, scuba diver shop and he has 4 kids
- **Call To Adventure** – there was a ship by Marquesas Island and the ship was called the Atocha ship
- **Cross The Threshold** – he takes his 4 kids with him on his journey and another boat bring supplies for them to live on the boat.
- **Meeting the Mentor** – he meet a archeologist and he tells him about the Atocha ship and what it was about.
- **Test, Animes, Allies** – he find a few things. Then there was a storm that hit and they didn’t find anymore things from the boat after the storm. So they moved on to a new place.
- **Meeting The Mentor** – he meets the archeologist again to show him the stuff they found and ask if there was more to the story or anymore places.
- **Ordeal** – there was a leak in the boat and it tipped over and most people escaped but it killed Dirk Fisher, Angle and a crew member.
- **Reward** – his son found two cannon in the deep water. So, they decided to go out a bit more deep and they went to the bottom of the ocean and found more treasure and they seen wood from the Atocha. Then they seen the boat. They discovered more things that where on the boat.
In addition, because Mark’s department evaluated student work (and recorded results) by Achievement Chart category (instead of providing a summary Level for the whole assignment), he was able to identify specifically on the rubric which aspects of the assignment that were proficient (Level 3 in Knowledge) and aspects that were limited (Level 1 in Thinking/Processing). See Figure 6.7, a sample rubric (for another student) for this assignment.

For all of the teachers, curriculum design, instruction, assessment for learning, and assessment of learning were inextricably bound together. Being able to provide feedback on progress toward a learning goal, also meant having a clear concept of that goal and the criteria by which attainment is assessed.
iv. Performance criteria and exemplars

Key to the process of ongoing classroom assessment was the identification of performance criteria and exemplars, which were the focus of classroom conversation, teacher and peer review and feedback.

As for Mark and Dawn, Keith’s essay-writing criteria were largely extracted from the Scope and Sequence for Expository Structure, which is what drove his teaching of essay writing. Evident here was one of the issues pertaining to implementation of Question Structure: some teachers were having difficulty connecting Question Structure to provincial policy. Keith’s marking scheme, for example, reflected neither the provincial Achievement Chart categories (which Keith said were “embedded”) nor Levels (see Appendix W).

To be sure, this was largely an issue of assessment reform implementation rather than of Question Structure: even though policy required teachers to evaluate by Levels, they reported in percentages, and not every teacher had developed deep understanding of the shift from percentages (as determined by accumulating and averaging points) to Levels. This was a case in which there was indeed a discrepancy between the realities of practice and the theoretical basis of policy. Keith’s marking scheme, which combined Likert scales, analytic evaluation, and Levels, indicated how Keith was struggling with these assessment issues. Assessment and evaluation were, as Keith noted, a work-in-progress.

That said, Keith’s practice was congruent with assessment for learning principles and practices. He regularly involved students in explicit conversations about evaluation criteria, had students generate the questions for “content” tests, and included extensive and intensive peer review sessions and feedback on work-in-progress. He scheduled essay-writing so that the evaluation of one essay came just as students were embarking on the next assignment (using
evaluation formatively). He was also trying to think like a learner. This meant, for example, that he had revised some of his expectations of students. He said that he now believed that teachers “expected too much,” because students simply did not yet “have enough experience with a literary lens” to write sophisticated literary analyses. He no longer required students to write on a theme that he identified; instead, they wrote on topics they identified.

Mark and Dawn, on the other hand—whose department seemed to have developed considerable understanding of the province’s assessment reform—were connecting performance criteria to the provincial Achievement Chart. Mark claimed that Question Structure had helped him distinguish between levels of achievement. He said, “Instead of it being that nebulous ‘you have it—you don’t have it,’ ‘I’m Level 2+,’ ‘I’m Level 3’ and not being sure what the difference was, he now had “a framework in which you can have a discussion.” So, if a question or topic required a student to focus on cause and effect,63 he could say to a student: “You’re describing the status of the character as he is now. You’re not really telling me the cause. You’re not really dealing with these issues. So, here’s a way we might talk about how you might do that.” In all cases, task clarification (for example through Snapping questions) helped assessment of and for learning not only because it removed the question as an obstacle to students demonstrating what they knew, but also because they had a shared language for examining questions and answers. Dawn said:

And I think [Question Structure] too has offered [students]: “Okay, I know exactly what she’s asking me, I know where I need to look for it, I’ve got the text, I’ve asked all the questions before so I understand what I’m doing.” Every single kid in that class can successfully answer that question. Certainly I’m going to explain to you how to enhance

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63 Mark is referring to Snapping the question and providing the Type of Requested Information.
your thinking and enhance your answer so that it matches this one over here that I consider to be a [Level]4+ for thinking and integration of quotations and whatever else…. Mark and Dawn were developing “Performance Walls” (Figure 6.8): criteria and exemplars were scaled according to Levels that could be used formatively to support teacher- and peer-provided feedback (assessment for learning) and to support students’ self-assessment (assessment as learning).

Figure 6.8 Dawn’s Performance Wall exemplars (retyped excerpt)

<table>
<thead>
<tr>
<th>Question</th>
<th>R</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. What does Phaeton request of Apollo?</td>
<td>To use his chariot</td>
<td>To drive Apollo’s chariot</td>
<td>Confirmation that he is his father and to drive the chariot of the sun</td>
<td>Phaeton asks Apollo for proof that he is in fact his father. AS proof, Apollo grants Phaeton a wish, and Phaeton asks to drive his chariot</td>
<td></td>
</tr>
<tr>
<td>4. Why does Apollo not want to grant Phaeton his wish?</td>
<td>Because he is scared</td>
<td>Because it’s blazing hot, very powerful and you would cross Taurus, Leo, Crab, and Scorpion.</td>
<td>Apollo does not want to grant Phaeton’s wish because it was too dangerous.</td>
<td>Apollo does not want to grant Phaeton his wish because his son, who is mortal, has asked to drive Apollo’s chariot. Apollo thinks this request is much too dangerous for a number of reasons: even Zeus, the god of thunder cannot handle driving the chariot: the horses are wild and they breath flames making the chariot hot; the journey is steep; and the path through the stars passes near many dangerous creatures.</td>
<td></td>
</tr>
</tbody>
</table>

One example was the checklist (Figure 6.9), used to help students improve how they responded to questions. Although not explicit, the Achievement Chart categories are easily identified. Some references to question Snapping and T-charts are embedded in the criteria.
Mark regarded tools like Performance Walls as integral to program design. About his courses, he said, “They’re getting closer” but needed Performance Walls. He (somewhat jokingly) said that his summer project would be to develop these. He hypothesized: “[I]f the taxonomy is sort of a universal, then I should be able to construct a fairly universal Performance
Wall.” Such an ambitious tool would identify criteria tied, for example, to directives, like summarizing (Type of Processing):

So if I’m saying I want you to summarize, I’d better provide you an example of what a summary looks like. You know, so, now that I’ve got my head around that concept I can now do it as a progression.

6.5 Making a difference

Being able to help students make changes in their work that increased their success was highly important to all teachers. All stated explicitly and strongly that they were focused on increasing students’ success (primarily but not exclusively academic achievement). All stated that they thought or hoped that students knew that their success mattered to the teacher.

In the focus group conversation, this emerged in a discussion in which teachers distinguished between change for the sake of change and change for the sake of students, between system-imposed “flavor-of-the-month” changes and changes that really made a difference. For example, Gayle pointed to a quotation from several I provided as prompts:

…another reason is that when teachers use an innovation, there can be heightened attention to what is making a difference and what is not, and it is this attention to what is not working that can make the difference—feedback to the teacher about the effects of their actions! (Hattie, 2009, p. 12)

The teachers agreed that Question Structure provided them with tools—not only to make a difference—but also to show them that they were making a difference. Gayle said:
That’s like Keith saying, “Why are we doing all this hoop jumping?” When you start to look at, through the Question Structure training, you start to look at what’s making a difference, what’s not, and what’s getting you where you want to be.

About his own program, Mark concluded:

I really do think that it’s a much-improved program, and it’s an improving program. And I think the kind of things that are happening might have longer term impact on their learning. I’m hopeful that they might remember, or that they have been changed somehow, and that that change shows up in more than being successful, in more ways, longer, in terms of their education. You know, if they can’t pinpoint that to a particular thing or person that’s fine, but if their overall pattern of being successful is greater, then I think we’ve arrived—as opposed to: “Oh, remember when we did such-and-such a story? That was fun.” Yea, well, that’s an experience, but that’s not intrinsic to them as learners.

6.6 Looking ahead

Chapters 5 and 7 examined how teachers used Question Structure in the classroom and for their own professional purposes. The next chapter focuses on the nature of those changes and conceptualizes how teachers thought about Question Structure and their use of it.
Chapter 7: Images and Themes

7.1 Introduction and overview

Figure 7.1 Chapter 7 overview
7.2 Change

As indicated earlier, the research question assumed that teachers’ practice changed in some way as a consequence of Question Structure. However, all participants asserted that their practice not only was different, but also improved. For example, Keith said that previously his instructional strategies were “… sort of hit and miss. I mean, sometimes they’d be good, sometimes they’d be bad, sometimes you feel you do really well, sometimes you feel, ah, maybe not so much.” The differences teachers identified were traceable both to the in-service and Hardt’s ongoing support, and to teachers’ enactment of and reflection on their use of Question Structure (Clarke & Hollingsworth, 2002).

Primarily, this change entailed refining and/or replacing former practices with practices derived from Question Structure, rather than merely adding practices. Teachers seemed to regard these changes as “significant and worthwhile” (Richardson, 1990), and often spoke of Question Structure’s “power” (Gayle).

Although teachers were doing things they hadn’t done before, and even though they agreed in the focus group that change in their practice was “fundamental,” they didn’t necessarily think of what they did as change, or of their actions as indicative of clusters of other, far-reaching differences. In response to a question about change, Mark said, “It didn’t feel like that. It felt like teaching.” When I asked Gayle if and how her practice had changed as a result of learning about Question Structure, Gayle at first acknowledged only increased awareness of questions. However, she gradually built on this response, and by the time we discussed how she had revised her seigneurial system assignment (which began with refining handout questions),

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64 Indeed, two consultants from another board, interviewed as part of background context, joked that they were banned from using the word powerful, because they used it so much to describe Question Structure.

65 Interestingly, this was the only interview topic that prompted Gayle to repeat my questions to herself. See insert, next page.
Gayle commented that her overall orientation had shifted—in particular her stance toward students.

One of the most consistent findings was the degree to which *Question Structure* influenced teachers’ conceptualization of teaching/learning, and how this manifested as reconceptualization of program, particularly for secondary teachers. *Question Structure* structured their practice—and was therefore relevant to issues of coherence, integration, educational goals, and subject content and pedagogy. In fact, this finding touched on every research sub-question and research problem in some way.

In the focus group, teachers spoke of change as *deep and enduring*. They attributed this to two things. First, they referred to *Question Structure*’s rich possibilities, which they had not yet exhausted. (During member checking, Keith’s wife, Jennifer—who had used *Question Structure* for six years—commented, “It just keeps going and going. It keeps unraveling.”) Second, *Question Structure* fundamentally affected the way teachers thought about

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**Gayle on change**

How have I changed? My questions are better. I certainly wouldn’t be aware of questioning the way that I am aware of all questions now—even on forms. It’s horrible! You start Snapping everything, even when people speak and they’re unclear.

... Am I different than I was before? It’s hard to say what part’s *Question Structure* and what part’s just as you get older. I would definitely say that I’m far more open.

We talk about questions more, we look at the way things are asked, at what’s being asked, I would say in the last couple of years I’ve had really good *thinking* discussions.

... I had never really thought about that before. Maybe that’s part of *Question Structure* that I don’t even see.

You say, ‘Well, what were you like before?’ and I’m thinking, ‘Well, what was I like before?’ And I’d never thought that maybe my groups are not as quiet now because of the way I run my classroom.

It could very well be.
teaching and learning. Dawn, for example, said: “… it has significantly changed my philosophy.” (Keith also referred to Question Structure as a philosophy.) She said, “[Question Structure has] changed us in that it’s not just something we’re going to be using for the next few years and then get on the next train” (emphasis Dawn’s). See Table 7.1 for a summary of teacher change.

Table 7.1 Characterizing teacher change

<table>
<thead>
<tr>
<th>Hook</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
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<tr>
<td></td>
<td>• Excited by new “stunning” understanding of learning disabled students and how to support them (cognitive carpet)</td>
<td>• Discovered that the Taxonomy mapped where he already was</td>
<td>• Struck by realization that students can participate in setting the learning agenda</td>
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<td></td>
<td></td>
<td>• Discovered that structure use covers “a boatload of [curriculum] expectations”</td>
<td>• Confronted with not being explicit enough</td>
</tr>
<tr>
<td>Seeing</td>
<td>• New lens: heightened awareness, new way of looking at things</td>
<td>• New lens: can no longer present text any other way</td>
<td>• New lens: new way of looking at things</td>
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<tr>
<td></td>
<td></td>
<td>• Instincts validated, but can now build with explicit constructs</td>
<td>• New understanding of educational buzzwords, e.g., facilitate learning</td>
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<tr>
<td>Direction</td>
<td>• Purposeful: the Taxonomy is the visual, the map</td>
<td>• Conscious, informed: Explicit constructs allow building</td>
<td>• Purposeful: instead of wandering through the subject, conceptualizes course as clear path to particular goals</td>
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<tr>
<td></td>
<td></td>
<td>• Taxonomy maps the landscape</td>
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<tr>
<td>Personal change</td>
<td>• More open to students’ questioning</td>
<td>• Sets context, oversees, intervenes as necessary, but attempting not to be the center</td>
<td>• More willing to step back, rather than be the center</td>
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<td></td>
<td>• Increased sense of self-efficacy with respect to coaching</td>
<td></td>
<td>• Increased sense of self-efficacy</td>
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<tr>
<td>Type of change</td>
<td>• Structures “fit into” teaching style (teacher-directed) and program</td>
<td>• “Fundamental” change in program: student-driven and student-empowering</td>
<td>• “Radical” change in stance and orientation, e.g., teacher- to student-centered</td>
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Even though the initial ‘hook’ and ‘type of change’ varied, clear patterns emerged. I believe these pointed to a common way of conceptualizing the effect of Question Structure in practice. 

7.3 Conceptual metaphor: Strangers in a strange land

7.3.1 Overview

As indicated in Chapter 4, analysis of Keith and Mark’s interview transcripts alerted me to images of their teaching Self that indicated how teachers understood—and therefore implemented—Question Structure. The images seemed to have the characteristics of images as defined by Elbaz (1980): they encompassed feelings, values, beliefs and needs; they were inclusive but not explicit; they were ill-defined in terms of boundary and structure, and did not point to specific practices. However, while Elbaz (1980) distinguished between images and principles, seeing the former as “intuitive” and the latter as “reflective” (p. 47), Keith and Mark had clearly reflected on these images, and explicitly articulated them as principles of effective teaching.

While Mark’s Sisyphus image pre-dated Question Structure, Keith’s no-man-behind-the-curtain image seemed to have emerged from his work on Question Structure. For Keith, this image and embedded principles defined a vision and a standard to which he aspired. The two key themes were “Teach like a learner” (also “Think like a learner”) and “Be a facilitator.” In Keith’s transcripts there was also a secondary cluster of attendant principles and images (Elbaz, 1980), which took the form of symbols, metaphors, axiomatic statements, and motifs. These included “playing,” “building [blocks],” and “ba-da-boom, ba-da-bing.” (See Appendix L.) Although not always expressed in the same images and words, these motifs were evident to some degree in all cases.

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66 I tentatively suggest that differences speak to teachers’ unique professional emphases or concerns (‘hook’) and to implementation contexts (‘type of change’), as discussed in Chapter 4.
In my own analysis (thinking and writing), these images eventually took the form of “Sisyphus” and “No man behind the curtain.” (See Appendices M and O.) These pieces, substantiated by data across the cases, pointed to a central **conceptual metaphor** for teachers’ use of *Question Structure*.

To name this conceptual metaphor, I borrowed the title of Robert Heinlein’s (1961) novel, which—if we refrain from pursuing it too far—captures commonalities in study participants’ thinking about *Question Structure* (Figure 7.2). This allusion was suggested by interview details, my thinking about the Sisyphus and Wizard images—and also Dawn’s classroom work with the journey archetype. Each participant seemed to be a *stranger*, who had “crossed the threshold” from a familiar world into a “strange land.” Ultimately, this was a metaphor for teachers’ change process.

Long after developing this metaphor, I noticed that Pajares (1992) referred to pre-service teachers as “insiders in a strange land” to convey the idea that continuity of experience and familiarity with schooling hindered change/learning. Along the same lines, Buchman (1991)
reflected on the roles of continuity and “radical breaks” in teacher change. Both continuity and breaks were evident in these cases, though the balance or relative proportion varied. In Gayle’s case, for example, continuity was “stronger” than radical breaks, while in Keith’s case, breaks dominated, in that he redefined the teaching/learning situation and his role. Mark seemed to be managing (controlling) the relationship between continuity and breaks—a process he said felt “like teaching.”

### 7.3.2 Crossing the threshold: implications for professional learning

Teachers spoke of how difficult it was to “cross the threshold” between familiar and unfamiliar worlds, between how they had approached teaching previously and how they approached it at the time of the study.

#### i. The threshold: Acquiring, using, and generating new information

The “threshold,” if you will, was *Question Structure* in-service—though as I have argued, teachers’ relationship with Hardt evolved over time. Metaphorically, of course, a threshold is an entrance, a point of beginning—not a portal out of which one abruptly appears, altered. The threshold was less a point of change than the beginning of a process, an extended time of ambiguity and uncertainty. Keith said:

… when you first start [using *Question Structure*], you’re not too sure and you kind of put your toe in and pull it back and do a little bit more and it kind of bears out and you take a big jump and it fails so you come back and you re-evaluate, and you keep going back and forth, until you think you finally got it and then it just *shoom*, takes off. And you keep going.

For these teachers, crossing the threshold was a long process of learning and experimenting.

Dawn said:
... I’ve got this knowledge and I don’t know quite yet what to do with it. So it’s very unnerving. ... we spend a lot of time saying to each other, “I totally suck. I’ve done nothing right so far.” And you’ve got to go to that little base level and rebuild. So I can see that it’s a scary process ....

Teachers’ comments, above, call to mind Nelson and Harper’s (2006) concept/metaphor of liminality to describe the process of engaging with difficult and transformative learning. The first phase involves a receptivity to learning and “willingness to suspend disbelief,” to experiment, and engage in critical reflection. Turner (1974) described the liminal state as “neither here nor there, betwixt and between” (p. 37, in Nelson & Harper, 2006, p. 11). Just as Nelson and Harper intentionally provided pre-service students with “rigorous and challenging readings and ideas” (p. 12), so Question Structure provided teachers with challenging concepts and unfamiliar language.

Because of their leadership roles, teachers were particularly aware of other teachers’ inability or unwillingness to follow. Keith attributed reluctance to an unwillingness to think and rethink:

... it’s a new way of looking at things. And so it is front-end heavy, in terms of, okay, I’ve got to rethink a lot of things. ... there’s a lot to learn before you start to apply it. And that’s also why a lot of people don’t do it. ... I think a lot of teachers don’t want to do it because they just don’t want to think about their thinking. They just want to get ‘er done: let’s go in there and let’s teach the play. (emphasis Keith’s)

Gayle said:

I was a co-lead in our board last year and you just want to get up there and be so—you’re so excited about it because you know what a change it can make. But I’m trying to look
at it like the kids in my classroom where you have to take a different approach with every
different child, so [to] some teachers you need to say, “Look, just Snap the questions.
You can do this. Here are some handouts. Do the Snap. You’ll be fine.” ... I think
sometimes because there’s so much frontload, and such a big concept, that people think,
“That’s not for me, that’s way too much.”

She observed that many teachers “want[ed] the package. ‘Just give us a package. What do we
do?’” She then added: “Where[as] some of [the teachers], already you can see them starting to
globalize, and [to ask.] “How can I use this?” And “I want to write curriculum,” and “I want to
question differently.” In other words, Gayle suggested that Question Structure in-service
required differentiation—and not only by subject. Gayle seemed to feel that teachers’ response
depended on the kind and amount of work teachers were willing to do.

Teachers in the study agreed that Question Structure in-service was less prescriptive than
other professional learning in which they had participated, and required a lot of thought-work to
explore how it might work in their classrooms. For them, this was a good thing. This is
congruent with Franke et al.’s (1998) finding that teachers used information about student
learning either as fixed information to be applied, or as a framework for continued classroom
inquiry and knowledge generation. As Franke et al. (1998) observed, ultimately change lay “in
the meanings [teachers …] constructed” (p. 68). This study suggested that these teachers—and
particularly the secondary teachers—approached Question Structure as a framework for ongoing
inquiry (though there were factors, such as implementation contexts, that seemed to constrain or
facilitate their inquiry). To return to Nelson and Harper’s (2006) liminal metaphor, teachers who
approached new information as fixed information to be applied, were, perhaps, “open only to
technical forms of learning” (p. 13).
ii. Being a stranger: Need of professional community

Teachers indicated that knowledge of Question Structure set them apart from their teaching communities (though again this differed, influenced, for example, by implementation contexts). Conscious of the hyperbole, teachers used words like “leper” and “pariah” to express their feeling of difference. At one point, Keith joked that he felt like a cult member.

This was one reason that interaction with colleagues who shared this knowledge, language, and way of thinking, was particularly important. Gayle commented that had she not attended in-service with two colleagues with whom she closely worked, Question Structure “would not have gone” (emphasis Gayle’s).

Contrasting her situation with a teacher who had only “dabbled” with Question Structure, Dawn asserted, emphatically striking the desk:

Mark and I talked every single day about this, Lesley. Every. Single. Day. Even if it was just: “You’ve got to come and see this,” “Okay, this is how I got them there,” or “Okay, look what my 2Ps produced,” “Take a look at this T-chart,” “Okay, I’ve tweaked the T-chart because,” “We’ve changed the name of this because,” “Here’s a new chart—I’ve added the Given.”… I think you need that. You absolutely do. (emphasis Dawn’s)

It was Dawn who reinforced for me that teacher stories are necessary if Question Structure is to be accessible [to teachers]. She said:

If Mark brings me something and says, “This really worked well” and he tells me a story about it, I’m more likely to understand how it works. If I have to read the instruction, for whatever place, if I fall down on one of the instructions, I’m done. I flip over and say, “Okay, let’s try something else. Maybe I’ll understand this.” I almost need that story to be told, that classroom story to be told to me, and I think that too, like Michael’s
[Hardt’s] presentation, it’s story. He tells lots of stories, and you get it—and you had the time.

As Nelson and Harper (2006) observed with respect to their liminal metaphor (citing Habermas), learners require the opportunity to engage in dialogue; they require a “critical community of conversation” (p. 17, italics in original). And dialogue, like story, as Dawn pointed out, requires time.

In the focus group, teachers agreed that their work with Question Structure was only possible because they had enough confidence in the quality of their teaching to persevere. For example, Mark commented that he needed a “lifeline” when he “hit rock bottom.” He said:

I think the key thing, the lifeline that keeps you going is that it’s about making your existing program better. So, once you hit rock bottom, you realize, “Wait a sec. I actually have a pretty good program, so now I’m going to try and make my program better.” So now you start looking at what you know is your good program, and those good units or lesson concepts—you use them year after year, and they always get tweaked and added to and adjusted and they’ve always worked—, but this is so much better.

Gayle remarked not only that Question Structure “fit into” what she already did, but also that she had confidence in having “a solid foundation” even though her “pillars were shaking.” She added:

Think about bringing it to people who are not as confident. So pre-service people, or beginning teachers, or teachers who maybe aren’t so comfortable, it’s going to be a tough sell for those people. And you start looking at your program, and if you know it’s already good, it’s less scary than if you start looking at a program that you think might be a little shaky to begin with and now you’re going to tear it apart and really see the mess.
iii. The familiar world: Local implementation contexts

In the focus group, teachers cited local professional learning contexts (External Domain) as problematic. For example, system and school administrators had little understanding of what teachers were doing. Mark commented that administrators commented on the excellence of his English program, but that they “[didn’t] know why.” On the one hand, this lack of understanding meant potential loss of support, such as funding to meet with Hardt. On the other hand, it gave teachers considerable freedom to experiment.

Teachers also concurred that contradictory goals and system messaging—what Gayle called “conflict in education”—made implementation of Question Structure difficult (see Kennedy, 2005). Gayle said:

We have this Question Structure stuff that is totally based in reflection. I mean, really, it’s all about reflection and reflecting on the work that we’re producing and the work that the kids are producing and then we have this other thrust that is all about speed and flash and use the technology. We have a full class set of iPod Touches, we have SmartBoards in every classroom in our school. Yea, it’s crazy.

Dawn, Mark’s colleague, was even more vehement about how system directives ostensibly valued the time, effort, and reflection required for deep professional learning and implementation, yet undercut these with other directives. Always, there was the sense that administrative support—funding, time—might be withdrawn.
7.3.3 The strange land

i. The beast: former practice

The thing about journeys, of course, is that the strange land is the familiar world seen anew. Like Heinlein’s protagonist, who is a vehicle of social satire, teachers find themselves ‘back on earth,’ seeing the old world with fresh eyes.

Although each spoke about it in a slightly different way, all participants indicated that Question Structure compelled them to question their practice—they all “descended into the underworld” and “battled the beast,” as it were. Keith, for example, commented that Hardt had challenged him about being insufficiently explicit in his instruction. He said, “When I think back to the stuff I used to do and just assume so much, you just shake your head and say, ‘How did those people—those poor students—do so well?’” Describing the long trip home from an in-service in another part of the province, Dawn said: “…[Mark and I] … didn’t stop talking the entire way. ‘Okay, how are we going to do this? What’s going to happen next? Oh, my God, my classroom is a disaster!’”

This reassessment and subsequent change in practice tended to mean that teachers no longer had to pretend that they knew what they were doing. For Gayle, this meant understanding for the first time why some students weren’t successful and how she might support them. It also meant being less defensive and more open to students questioning her questions. For Dawn, it meant the end of secrets: half in jest, she said: “I kept waiting to be found a fraud. I kept waiting for someone to come in and say, ‘Everything you’ve done so far is awful. Let’s go. We’re taking you out of the classroom!’” They seemed both anxious and relieved—and somehow released—when they made these comments.
ii. Seeing: clear vision

This self-(re)assessment was tied to a different way of seeing: it was impossible for teachers to look at teaching and learning as they had before. Keith said, “… it really transforms how you look at the world.”

The recurrent image associated with teachers’ pre-threshold, familiar land is limited or obscured vision. They spoke of finding their way by feel (Mark), by instinct (Mark), by hit and miss (Keith)—or of simply not knowing what to do or where to go (Gayle), of not having direction (Dawn), of “wandering” through the subject (Keith), or of laboring behind (beneath?) a view-blocking stone (Mark). In contrast, all saw—realized, understood, discovered—things that had previously been unclear or troubling. Gayle, for example, was “[stunned]” by her new

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67 I was struck when analyzing transcripts by the frequent association of Question Structure with sight. In hindsight, this is unsurprising, the association of light and sight with knowledge being a common metaphor. (See Lakoff & Johnson, 1999.) Furthermore, I was aware that Hardt’s language and his PowerPoints are replete with verbal-visual metaphor. A former fine arts student, he frequently uses visual paradoxes or pictures containing hidden or ambiguous images—for example, his pixelization series which culminates in a photograph of himself, or Istvan Banyai’s (1995) picture book Zoom to teach about Zoom Strips. In fact, metaphors embedded in the teachers’ talk aligned with Lakoff and Johnson’s (1999) discussion of metaphors for change (movement through space) and thinking (perceiving).
understanding of cognitive load and how she might support learning disabled students. Keith learned what it meant to “facilitate” learning and to implement a “spiral” curriculum. Mark was able to survey the “big picture,” the “cognitive landscape” in which as a teacher he had always “played” (see “in it,” p. 224).

When I asked teachers what—if anything—*Question Structure* explained for them, they all immediately responded: *thinking*. That is what they *saw*. Keith said *Question Structure* enabled him to “get inside the head of a kid”—to “think like a learner.” Dawn said, Thinking. Students’ thinking. It makes it explicit to me. That something that was private has now been made public, and I have my own structure to communicate that to the students. There was a quote⁶⁸ that made me think of that—“The act of teaching requires deliberate interventions to ensure that there is cognitive change in the student.” To me, [*Question Structure*] shows those cognitive changes.

She added, “It’s that common language, right? Like, we’ve exposed our own language.” Keith then said, “I think it also explains to the students how we’re thinking.” He said:

It’s not just common language it’s—… we tend to teach the way we *think*. And the kids that buy into that are the ones who are able to do well. But we’re not just teaching those kids. We’ve got *everybody*. So if we give them a framework to understand how we’re thinking, then they have better access. … How do kids see us as *thinkers*? And if we give them this framework, so that they can see it, so when they see a question, they can say [snapped his fingers], “He’s going for an *Integrate* here. I know exactly what I’ve got to do.” (emphasis Keith’s)

Indeed, the focus on thinking—on sharing how they think about something, providing students with “thinking tools,” using structures like the T-chart as windows into students’

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⁶⁸ Hattie, 2009, p. 23. Provided as stimuli to participants in the focus group.
thinking—seemed to be one of the most significant attractions for teachers. In fact, this was tied to how they characterized student engagement: as “cognitive engagement” (Dawn). Dawn said:

Students are engaged in thinking, whether it’s independent or with a partner. I cannot believe how my kids gobble up T-charts and Agenda Structures. When we look at an Agenda to map the story out and I tell them they can work with a maximum of three—because I don’t think much learning takes place with more than that—I can’t believe how task-oriented they are, and how absolutely different their Agendas are. So there’s very unique thinking going on as they use these structures to ask questions and answer questions about the story. (emphasis Dawn’s)

At this point, Dawn turned to me. Referring to my question in an interview about her “red thread” (Ritchhart, 2002), she said:

— you asked me the question: what would my kids say about me as a teacher? I would hope that they would say that I want them to be successful. That I want every single person to be as successful as they possibly can be in my classroom. And the structures have allowed that. So my 96% student over here and my 62% student over here can use the exact same thing to increase their cognitive carpet more than what they have been using. And I think it has done that. The T-charts that we’ve used with Question Structure have given absolutely every student a chance to show their thinking. (emphasis Dawn’s)

iii. Cognitive maps: Knowing where you are and where you’re going

Embedded in teachers’ discussion of Question Structure (the Taxonomy, the Scope and Sequence of the structures, the Four-Step Strategy) is the image of maps.69 Whereas teachers

69 The map image is particularly relevant to the issues of coherence, program, and evaluation. These issues are taken up in the final chapter.
could not previously identify *where* they were or *how* to get *where* they were going (which was sometimes also unclear), they now had “maps” that indicated locations, destinations, landmarks, routes and directions.

Dawn commented that she was a better teacher because she was “more purposeful….I think that’s something that these structures have given me” (emphasis mine). She continued: “When I say that I’m purposeful, I’m able through the question Snapping and the structures, I think I’m able to see that revealed a little better” (emphasis mine). When one *sees*, one can intentionally *choose* direction—because there are directions.

This too was unsurprising: maps are about what one knows, how one sees, and often, what one imagines. A map (I think here of Peter Turchi’s (2004) *Maps of the Imagination: Writer as Cartographer*) represents a particular perspective and interest, and serves particular purposes. Maps are spatial lists: *structures* with parts, functions, and connections (Evetts, 1996); the *Taxonomy* is a map. The teachers consistently spoke of articulating/envisioning destinations, of moving students from here to
there, of seeing the “steps” they could take, of being purposeful instead of wandering. As mentioned above, Mark explicitly refers to the Taxonomy as a “cognitive landscape,” a place where as a teacher he had always “played.” It is as if with Question Structure, the uncharted geography is mapped. Maps name things, tell you where you are, where you want to go, enable you to plan possible routes, and provide landmarks by which to assess progress. A map, after all, is a framework than can be operationalized. Gayle said,

[The Taxonomy] provides the next step, that’s what I like about it. Because sometimes I could see the child was stumped, but I didn’t know how to get them from there to a really high level thinking question, because there’s all those little incremental steps in between that if I can identify them there, then I can probably move them up…. Whereas I can really honestly say, I didn’t have a framework for doing that before. I often knew where they were bogged down. I just didn’t know what to do about it.

Mark concurred: “Yea, everything seems to fit. Especially with differentiation. It’s really establishing where are we going to move, where are we on the Taxonomy, where is a kid. And once you figure that out….,” For Mark, the teacher becomes a “device” students use to find their way through the landscape to their destination: “It’s kind of liberating because it, you know, it takes a lot of pressure away in the sense that I don’t have to drive every minute of this period. You are the GPS device.”

7.4 Role of the teacher

Everything seems to spin out from the stranger-in-a-strange-land metaphor, and the embedded images of seeing and of maps.
7.4.1 Facilitating learning

In one way or another, all teachers spoke of Question Structure as enabling: it enabled them to take a more facilitative role. This is consistent with Cohen’s (1998) finding that strategy training results in a shift in the teacher’s role from instructor to “partners in the learning process” (p. 97, in Lawes & Santos, 2007). Although Gayle described her style as teacher-directed, yet she also indicated that students often drove discussion, that she no longer had to prepare to direct every moment. The theme was particularly strong for the secondary teachers. Mark described himself as a GPS system, a head-waiter solicitous of “client” needs, as Sisyphus70 (see Appendix O), who carefully, thoughtfully, and purposefully led the way up the mountain each year. (In his metaphor, he parted from students on the mountaintop, and then returned to lead a new group from the bottom.) It was Keith, who used the term “facilitator.” He said:

…I’ve always struggled with this idea of teacher as facilitator. We used to hear that.

What would that mean? Never knew how to do it. This has allowed me to do that, and it’s allowed me to step back and let the kids do the work. And some of them get really excited by it, and it’s great.

Theories of learning. For Keith, this meant shifting from lecture (transmission theory of learning) to collaboratively building understanding (constructivist theory of learning). The abandoned lectern in Keith’s classroom (front center, used primarily for attendance) symbolized this shift. To some extent, all of the teachers consciously shifted from “talking at” students to having students talk with one another.

70 Mark’s meaning can be contrasted to Robert Garioch’s interpretation, quoted and ‘translated’ in Swan (2008) and to Labaree’s (1998) description of the educational researcher’s task as Sisyphean: “One last problem that the form of educational knowledge poses for those who seek to produce it is that it often leaves them feeling as though they are perpetually struggling to move ahead but getting nowhere. If Sisyphus were a scholar, his field would be education. At the end of long and distinguished careers, senior educational researchers are likely to find that they are still working on the same questions that confronted them at the beginning” (p. 9).
They all used a ‘building’ metaphor to describe what they thought happened in their classroom conversations. Keith, for example, used an extended house construction metaphor to describe the process of writing a research essay. This metaphor seemed central to their understanding of “constructivist.”

**Positioning and perspective.** Facilitating also meant that teachers “stepped back” (Keith). All either said they disliked being at the center of classroom activity and/or physically enacted that idea. Keith, for example, ranged through his classroom, mostly in the open space, approaching now this and now that group of students, and rarely using the lectern at the front of the room. Each “pod” of students (they faced each other) formed another point of perspective in the room. Thus, in one way or another, the teachers tended to remove themselves as focal points.

**Perspective.** This is related to a second principle of teaching (Keith): facilitating required being able to “teach/think like a learner”—that is, understand the learner’s point of reference. Of his discarded *Fifth Business* lectures Keith said:

> We had stuff, … we would lecture and lecture and lecture. We had a whole lecture on the name in *Fifth Business*. That means nothing to the kids. … We’ve read it twenty times, they’ve read it once. And then we ask them questions on that stuff and they’re stuck. And it … made us [Jennifer and Keith] change our approach to teaching…. Teaching like a learner, rather than a teacher.

Understanding of the students’ point of reference meant understanding the relative sophistication of their thinking. (In *Question Structure* terms this meant de-pixelating.) Keith commented that while students’ knowledge often lacked sophistication, it reflected a necessary

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71 In general, teachers seemed to be using the five processes identified by Richardson (2003) as conducive to creating a constructivist classroom. That said, their understanding was broad and without the awareness, distinctions, and cautions of Richardson’s critique.
stage in the students’ learning. For example, while what students said or wrote seemed to lack originality, these insights were new to the learner. He said,

…when my kids [grade 10] are writing essays for the grade 12s, that’s what they’re creating: knowledge. “This is what I really think and this is original.” It might not be original to all of us, but to them, it’s original. … That excitement is so essential. And like, ten years ago I’d have said, “Oh, that’s a Level 3 or 2, yea, that’s so obvious.” No! To me it’s obvious. To him it’s not. Go for it. (emphasis Keith’s)

He added:

So we’ve read Fifth Business. [Teachers] can talk about all these really, really interesting themes and stuff like that. I think we need to get away from that, and we become more student-centered in terms of “What do you think about this?” We may have heard it before, but that doesn’t lose its originality with respect to the student. This is the first time they’ve done it. So it’s important for them as the first-time reader. (emphasis Keith’s)

Keith’s approach is not, however, the laissez-faire approach provided by Richardson (2003) as an example of misconstruing the pedagogical implications constructivist theories. Keith’s efforts to think like a learner was more a case of respecting the learning process than of accepting anything and everything.

7.4.2 Demystification

“Teacher as facilitator” is tied to the cluster of related binary opposites that ran through teachers’ interviews (not only Keith’s). As I suggested above, all of these pertained to the seeing metaphor: obscured/exposed, hidden/visible. The hidden was associated with closure, obstacles, complication, secrets; the visible with openness, access, simplicity, revelations. The former was
associated with artificiality, dishonesty, and defensiveness; the latter with naturalness, honesty, and vulnerability. Teachers associated structures with the latter set. For example, they argued that education unnecessarily complicated learning, erecting “unnatural” and “artificial” obstacles. Keith saw lectures as a kind of self-serving intellectual ostentation and obfuscation that divided teacher from student. In contrast, his post-Question Structure lessons were low-tech and uncomplicated. He said, “I think we create all these artificial systems, and I’ve started to realize that learning and knowledge is a more natural process.”

Mark argued that the dominant ways of thinking in education imposed “artificial” constructs on teaching/learning situations, preventing teachers from making common sense judgments and taking practical action to foster learning. His comments emphasized the importance of praxis (Carr & Kemmis, 1986; van Manen, 1977) and phronesis (Hibbert, 2012). For example, he saw the Oral Communication strand in the provincial English curriculum as a “construct” that compelled teachers to require group work. He said:

> We don’t allow it to occur naturally, as it would when you say, “I really don’t know what to do about this. I don’t know how to make this work.” “Well why don’t you talk to so-and-so and so-and-so to see if you guys can figure something out?” We end up using [group work] as an end product. … I think we need to give ourselves permission to realize that we need to build in the freedom for students to choose a collaborative form. I mean, you look at their learning skills, the kids with strong interpersonal skills are going to gravitate to working in a group anyway. “Can I work with so and so?” “Well, yea, if that’s what you need to do.” (emphasis mine)

For Mark, this was an issue of control: permitting students to make decisions about collaborative learning based on need and inclination was a way of ceding control of learning to students. He
added that the consequence was that teachers imposed “this artificial construct of summative assessment in a formative situation”—a line of thinking congruent with AFL principles.

7.5. Making it happen: Implications for practice

7.5.1 Enablement

All teachers repeatedly spoke of how Question Structure was accessible to all students regardless of ability level, how it provided a “foundation” for “building” knowledge and skill, and how it enabled all students to be successful and to demonstrate their learning. (See Table 7.2.) Keith said, for example, “…[students] can do this using these tools.” He added that these have “really made a difference for students.”

Table 7.2 Teachers’ thinking about the capability of students

<table>
<thead>
<tr>
<th>Success</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Everyone can do something</td>
<td>• Everyone can do it and then we build on it</td>
<td>• Students can do it and then we build on it</td>
</tr>
<tr>
<td></td>
<td>• Superstar: every student can shine</td>
<td>• Just: things are easier than anticipated</td>
<td>• Ba-da-boom, ba-da-bing: Things are easier than anticipated</td>
</tr>
</tbody>
</table>

Demystifying learning.

A common theme was that Question Structure helped teachers show students how things were built and how they worked. This was tied to a principle of teaching: be explicit and transparent.

Keith’s earliest experiment with Question Structure was having students create questions which he then used on a test. In a conversation about the improved test scores, Keith’s vice principal said: “… of course they all did marvelously on it. … They know what’s on … the
test.” Keith commented, “Well, ba-da-boom, ba-da-bing, shouldn’t they know? … That was the turning point, because at that point, I started to play with it.”

For Keith, the key to Question Structure was that it is “very explicit in terms of how you access information … and how you express information.” Being explicit was a key principle of teaching: Keith saw the teacher’s role as showing students how, for example, to write essays. This was related to transparency about assessment criteria. His “philosophy of teaching” was that we’re demystifying knowledge and how we gain access to it. I mean, [Question Structure] just makes sense. There’s no man behind the curtain that … comes up with this stuff and then how does this fit into a structure base. (emphasis mine)

His comments called to mind Elbaz’s (1980) Sara, who was relieved to discover that “tasks that were mysterious to students … could be made concrete and structured, could be taught” (p. 161).
7.5.2 Teachers on structure

Teachers said that the *structures* enabled them to facilitate students’ learning, for example by making *processes* explicit. The remainder of this chapter examines how teachers understand *structure*. (See Table 7.3.)

### Table 7.3 Summary of teachers’ understanding of ‘structure’

<table>
<thead>
<tr>
<th>Understanding of ‘structure’</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• A framework, consistent way of organizing content and activity</td>
<td>• Framework: landscape in which teaching and learning takes place</td>
<td>• A philosophy</td>
</tr>
<tr>
<td></td>
<td>• Lens, a new way of seeing things</td>
<td>• Lens: unable to approach teaching in any other way</td>
<td>• Word ‘structure’ tends to be used for anything concrete consistent, e.g., elements of form, format conventions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Lens: shapes approach to everything</td>
</tr>
</tbody>
</table>

It wasn’t always clear whether teachers held the ontological belief that structure existed in the world or believed that structures were constructs. Mark frequently used the word *constructs*, but Keith seemed to believe that structure is inherent in all phenomena. He said, “We tend to … look at wilderness just as chaos. It’s not. There’s a specific hierarchy and structure there to it.” He also said:

*Story has a structure to it. If I have to do a presentation, it has a structure to it. And really good people, they play with the structure. Think of the movie *Memento*, how they play with plot structure. You think of postmodern literature, how they play with the structure. In science, there’s a structure to a lab experiment. There’s a structure to a report. Understandably, articulating what they understood by “structure” in propositional form caused some difficulties for the teachers. For example, *structure* was interchangeable with *strategy, form*, and *convention*. In the focus group, though, a consensus emerged.*
The word *framework* seemed to function as a synonym for *structure* for all participants. During the focus group, Dawn said, “It’s the framework, the underpinning, the thing that exists before content” and “Everything else [is] built into this.” When we unpacked it, this statement had two aspects.

First, the structures are like skeletons or building foundations: they lie under the surface; everything else is built on them. Dawn said:

[S]tructure … gives support to anything else you put on top of it. So structure-based learning is providing the kids with … specific strategies that are tied to the building blocks of learning, the building blocks of thinking, so in any learning task, they can fall back on those structures. In *any* learning task.

Referring to the graphic representations of the structures, which teachers used as graphic organizers, Dawn added:

The charts become that base, that base from which other things can then happen. And it’s at the core, so honestly, if I only had a T-chart and an Agenda Structure and a List Structure and a Question Structure, if I had only that, I could probably [teach] for 75 minutes—with no content.

I wish to highlight two points. First, teachers saw *Question Structure* as providing an *underlying* framework or foundation; this did not mean that teachers did not employ other strategies and pedagogies.

Second, although Dawn seems to be dismissing (subject) content as irrelevant, in fact teachers’ lessons were *full of* content. All teachers emphasized the importance knowing text content (the who, what, when, where, why of texts) to higher-order thinking, such as developing a thesis or supporting an argument. Students’ reading, rereading, and talk about the content they
were reading mattered. Lessons were replete with discipline-specific curriculum content—
rhetorical devices, logical fallacies, effective techniques for opening essays, recognizing multiple
perspectives, identifying author bias, seeing archetypal patterns, explaining how media
conventions functioned, doing close critical analysis of text, and so on.

I believe Dawn’s point was that using structures strategically is a way of interacting with
content. The teachers insisted that the relationship between structure, strategy, and content is
central to Question Structure. The key seemed to be that the shifted from telling students how
texts functioned (as O’Brien et al. (1995) observed: teacher telling about text substituted for
students’ reading of text) to structuring students’ interaction with text. Being able to facilitate
these interactions depended on teachers’ considerable subject knowledge.

The teachers did believe that the structures were “universal”—that they lay under
everything (though this study cannot provide evidence that they underlie disciplines other than
Language Arts/English). Underlying universality meant that the structures were both irreducible
and ubiquitous. On the one hand, then, the structures were elemental. Dawn described them as
“core,” Keith as “simple,” Mark as true to the nature of things. On the other hand, a “true
structure” is transportable because can be used “here, there, and everywhere” (Keith). That’s
“what makes it successful” (Gayle). Dawn said, “They’re all I need.”

The teachers also thought of structures as comprehensive frameworks that mapped and
organized all things. Most often, they thought of the Taxonomy this way: as a(n organized) map
of cognitive possibilities. However, Keith also thought of Parts, Functions, and Connections
(PFC) this way and Mark thought of the Agenda/Narrative Structure as comprehensive, or
holistic. In short, the structures were understood as present both at a micro (zoom in) level and at
a macro (zoom out) level—as something inside everything and as something teaching and learning were inside of.

i. Exposing structures

Being explicit was tied to showing students the underlying structure. Keith believed that if teachers were “explicit in terms of how things are built or how you build things,” then “kids can do it.” This principle of explicitness was tied to an incremental view of learning. Keith said, “It’s not a great mystery” and “It’s not some hocus-pocus you’re born with or you’re not.” As Mark said, “You start to realize: I can just give [students] this framework.” He continued:

… you make kids part of the use of the language—terms of reference—that you’re using, from a design point of view. Because that’s part of your learning, … you’re providing the student with the same framework. You’re letting them in, to know what you know, see what you see. The fact that I might know stuff is because I use structures to help me know stuff and be able to do stuff. It’s not because I’m so smart.

Gayle, too, believed that by giving students the structures, she gave them the means to learn independently, to take control of their own learning. She said, “… if you make the structures transparent, … then everybody has ownership of it. It’s not something we have and they don’t have. If it’s transparent, then it’s a learning community, as opposed to the teacher holding all of that.”

Keith was most emphatic about being explicit with students. At the same time, structures in his practice were the most *submerged*: it was a question of *thinking* that way. He believed that students could learn to use structures quickly while using them *without* his explicitly teaching them *about* the structures. He said, “Keep it simple” and then the structures “bleed over into the
lesson.” Although he occasionally needed to clarify use of the structures, he mostly focused on using them to teach explicitly how to think about the content.

**ii. Relationship to content**

Teachers’ feeling about content was a consistent theme. Although Gayle described the provincial history and geography curricula as “tight”—as specifying content to be covered and evaluated—to her content was “irrelevant” and less valued than other educational goals. Mark had revised his understanding that the provincial curriculum was about content, seeing it now as skills-based and structures as the means of accessing content. Keith focused more on teaching students to learn how to learn; content (literary text) was the vehicle for doing so. I believe that teachers were grappling with several issues. First, Language Arts/English curricula have been reconceptualized, for example shifting from literary study of the canon to an emphasis on processes. Second, as Luke (2004) argues, “‘what counts as English’ has become somewhat unclear” (p. 88). Third, in Ontario at any rate, there has been considerable pressure to transcend discipline boundaries. (In Keith’s board, for example, board consultants are generalists and a cross-discipline position has been created in each school.) And fourth, teachers are trying to figure out how to “facilitate” learning and implement constructivist learning theories.

Mark, Dawn, and Keith all spoke of throwing out lecture notes and old curriculum materials as “liberating.” Commenting that English teachers “like our stuff,” Dawn said, “I think it’s allowed me, like Keith said, to let go. It’s given me license to have Mark go and throw out all those files. I can always find content.” She added, “And it’s really given me the ability to say, ‘I don’t need it. I have what I need. Everything else will fall into it.’” Gayle said:
It takes pressure away because I don’t have to drive every minute of the period. And I’ve never been a photocopy for the next week kind of person, but I even feel more that I don’t have to plan for the whole session because the kids will direct it.

Dawn suggested that structures were the essential missing piece in the work she and Mark had been doing on program. She said: “I know this is a good program, but there’s something missing, and you can’t put your finger on what that is.” She continued:

Lesley asked me: Would I be able to go into a classroom with just these structures and teach? Into any classroom? And I said, “Except for maybe Math and Science, yes.” So, I bring what I know about students, what I know about how they learn, what I know about what it takes to get them to listen to you and respect me, and I take these structures and you put me in a history classroom, I’m good to go, without knowing the content. I thought, “Yea! I could walk into any classroom. I could walk into my English classroom without planning for the week, and teach a 75-minute lesson.”

I don’t believe Dawn was dismissing the importance of subject expertise. Rather, I believe she was claiming to have tools that she could use to facilitate students’ interaction with and learning from text. She could get started, she could manage to do something useful. Like Richardson (2003), Dawn and the other were considering the possibility that there might be “skills, ways of thinking, habits of mind that may transfer across subject matter and that may be of interest and importance within the learning of different subject matters” (p. 1632).

Dawn’s comment also pointed to a common theme: in contrast to the heavy professional learning required before being able to use structures, teachers agreed that in the long run structures simplified their work. Their lessons were less complicated. They were able to prepare and teach with much less effort—and have a lot more “fun” (Keith).
Teachers said that the structures enabled them to set up activities in which students drove the learning. The key seemed to be—not only the structures and strategies—but the use of structures and strategies to help students socially construct understanding. Repeatedly, teachers indicated that they had relinquished some control to students. In a provocative essay on content literacy, O’Brien et al. (1995) argued that the hard edges of subject disciplines in secondary schools are a barrier to education reform. When learning strategies are used within content disciplines to achieve traditional goals (such as essay writing), then strategies reinforce “the culture of teacher control” and “represent little that is new” (p. 446) to teachers. Use of question Snapping for OSSLT preparation might be interpreted this way. O’Brien et al., suggested, however, that it is the combination of strategies with collaborative learning pedagogies that shifts control of learning to students. In this way, strategy instruction might be considered a “radical pedagogy” (p. 446) that changes fundamental aspects of teaching. This fits, for example, with Keith’s perception that his practice has broken with previous practice and radically changed.

### iii. Strategies and graphic organizers

Part of the impetus for this study was my perception that teachers were responding differently to strategy resources, such as Think Literacy (Ministry, 2004) and to structures, as in Question Structure. I asked:

- Do teachers think about strategy resources differently than the structure-based approach?
- Do they use these differently in their practice?

My intention in this line of thinking was to understand better teachers’ thinking about Question Structure. I referred to the Ministry’s (2003b) Think Literacy resource as an example of strategy resources, because I knew that all of the teachers were not only familiar with the
initiative but had in most cases had some form of related leadership role. Here, I need to note two things. First, all teachers respected the Ministry resource and used strategies from it or similar resources. Some of the teachers recognized that strategies in these resources are built on structures, such as Narrative Structure (Somebody Wanted But So) or List Structure (K-W-L). Second, *Question Structure* structures are used as strategies.

However, teachers did distinguish between structures and strategies in the literacy resources. Although Figure 7.3 (next page) simplifies teachers’ thinking, it summarizes these distinctions.

Gayle, who had been board lead during *Think Literacy* resource implementation, spoke most strongly about the usefulness of the strategies, although of the participants, she seemed to use them least. She argued that *Think Literacy* strategies were suited to *individual* purposes and lessons. For example, she said she used the “Chain Reaction” graphic organizer “for *one* section of history where we’re just doing the events leading up to the American Revolution.” She added, “But I never felt the urge to use it again.” As she articulated how this strategy differed from *Question Structure* structures and processes, Gayle focused on how the former was *particular* whereas the latter were *generally applicable* and more applicable across subjects—an interesting comment given that *Think Literacy* (Ministry, 2003b) strategies were explicitly presented as cross-curricular. She said: “… they’re *all* tied—all of the examples are tied—to a specific text or tied to a specific activity. What if I’m not doing that activity? How do I *use* this?”
In addition, Gayle felt that the *Think Literacy* strategies were teacher- rather than student-oriented. She commented that most were instructional strategies that required handouts or a drawing of some kind of figure or organizer and were more suited to whole-class activities. Dawn also commented on the need to photocopy templates and to find content (including ways of thinking) to which they applied. She indicated that in cost-benefit terms, the considerable work required to implement structures paid off, whereas work on the other resource did not.
While many of the *Think Literacy* strategies are *structures*, such as K-W-L, the key difference seemed to be that Gayle and Dawn saw Hardt’s structures as more fundamental (Dawn’s “core”) and therefore as applicable “here, there, and everywhere” (Keith). Gayle observed that students can Snap questions anywhere—Snapping is something they can take with them. She noted that when her students practised using a T-chart in her class, they began asking, “Can we use the T-chart for this?” in math class.\(^{72}\)

Teachers also suggested that structures, unlike the *Think Literacy* strategies, were applicable beyond the educational context. Indeed, a colleague of Mark and Dawn’s recounted the story of how she had been compelled to testify in court after having witnessed a fatal double shooting. The situation was particularly traumatic in that she and her daughter had been caught, by happenstance, in the line of fire. Anxious about maintaining composure and clarity of thought during cross-examination, she used *Question Structure* mentally to Snap the lawyer’s questions—effectively, she thought. Keith and Jennifer repeatedly commented on how *Question Structure* thinking had penetrated “all aspects of our life.”

Essentially, teachers seemed to believe that *Think Literacy* strategies lay closer to the surface, where the content details were; structures lay deeper, at the core of thinking. Strategies tied to ‘content’ were seen as less transferable.

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\(^{72}\) Interviews with teachers of mathematics indicated that this transportability did not obviate the subject expertise teachers needed to help students make effective use of strategies in their subject.
Three of the teachers distinguished between graphic organizers found in strategy resources and Hardt’s structures. Keith’s story about the board consultant who shared over 100 graphic organizers resonated with the other teachers. Dawn said:

I know there were lots of blackline masters [in Think Literacy], but again, you’ve got that issue of, okay, you’ve got this graphic organizer, which is completely different from this graphic organizer, which is completely different from this one, and every time you’re explaining to the kids how to use it. And so… it becomes a learning task for the kids each time, when really, if you’re looking at a true structure, it should be something that’s used all the time, rather than switching things up a bit.

She continued:

I know novelty is always a good thing in your classroom, but you don’t have to be novel when you’re going after thinking. If you want your kids to do some deep thinking then let your kids so some deep thinking. Don’t get them distracted by pretty boxes and different shapes and things like that. …I think it just distracts them from the task at hand.

(emphasis Dawn’s)

In other words, many of the graphic organizers were perceived as impeding rather than facilitating teaching and learning. Dawn commented that although “[i]nnovative,” they were “not necessarily good teaching practice.” Dawn pointed out that she needed only four structures: Question, List, Agenda/Narrative and Expository. She said: These four structures replaced “a lot of things, but it’s not going to be extra. It’s not going to be something else I have to do. It’s going to be something I do instead of something else”—and is furthermore “better practice” than using other graphic organizers (emphasis Dawn’s). When I asked her if she could choose four strategies from Think Literacy to use instead, she said: “I don’t know if I could use all of those...
[Think Literacy] four in anything I did. … I’m pretty confident that the [Question Structure] structures I’m using are good, so I don’t know why I’d use any other ones.”

In fact, Dawn believed that the Think Literacy strategy collection could be simplified and rendered for useful if ‘translated’ into their underlying structures. While we spoke, Dawn flipped through her copy of Think Literacy. Indicating one of the pages, she said, “Like for me, I would turn this into a question. Like, I’m immediately trying to think how I could organize this as a small T-chart.” She then proceeded to describe how she might use T-charts as a metacognitive tool for figuring out word meanings. Such an approach would reveal students’ thinking, acknowledge individuals’ prior knowledge, and allow unique ways of problem-solving—all of which she valued and believed were enabled by Question Structure.

Dawn thought of the Think Literacy strategies as inflexible and as requiring a disproportionate amount of unnecessary work. About another graphic organizer, she said:

And to me, like I look at this and my kids are going to say, “Do we have to fill in all of those boxes? What if I only have one idea? What if I get it right away? What if I already know what the word means, because I’ve heard it somewhere else? Where’s the space for that?” So, this

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**Figure 7.4 Mark’s reading strategy bookmark**

Reading Symbols with Post-its

Mark the text with these symbols on post-its during or after reading. You can combine symbols on a single post it or create alternate ones.

- ! You are surprised by the text and didn’t see something coming.
- ? You are confused or puzzled by words, references or meaning.
- 😊 Positive personal connection: The text reminds you of something good in your past or present.
- 😞 Negative personal connection: The text reminds you of something bad in your past or present.
- ❤ You really like this part.
- ✗ You really don’t like this part.
- “ Quote this later.
seems to me as being too much work for the task you’re asking them to do.

Other teachers echoed Dawn’s comments. The limited number of “universal” structures meant that students could build automaticity of use, freeing cognitive space and energy for thinking. Furthermore, although structure often connotes pre-determined rigidity and boundedness, teachers saw the structures as generative, flexible, and open, even as they provided stability and familiarity. For example, Mark described how Agenda/Narrative Structure enabled senior students in the university program to handle the ambiguity of Hamlet. Keith described how his use of Parts, Functions, and Connections enabled him to address a wide range of thinking skills, from low- to high-level. Dawn described how her revision of curriculum materials for short story study demonstrated how she used Agenda/Narrative Structure and the T-chart both to “cover” content and thinking skills and to encourage in her students “unique” ways of thinking about text.

Keith felt that the structures “facilitate[d] [students’] thinking, rather than telling them what to think.” He argued that the structures were “easy to apply,” that students “can do [this] without knowing a lot of stuff. They can apply it very fast…through all grades.” Keith contended that the PFC was cognitively more comprehensive than ‘literacy’ strategies and graphic organizers. He said, “Those strategies come close but [they’re] not quite the cigar. It doesn’t allow [students] the full demonstration of their knowledge. I think this stuff [Question Structure] does.”

That said, all teachers did use these strategies from resources like Think Literacy. Dawn, for example, was a master at incorporating wait time and Think-Pair-Share into instruction. Keith and Mark spoke about the value of Place Mat for initiating conversation about a topic. Mark and Dawn used highlighting, reader response book marks, and complex strategies like
Jigsaw, Reader’s Theatre, Choral Reading, and Socratic Circle. These were components in their pedagogy. Mark said, “I do think that the Matching and the use of the T-chart … doesn’t supercede, but seems to work as well as some of the other strategy approaches, in terms of cracking a text.”

7.5.3 The repertoire-coherence problem

Despite Dawn’s comments that the structures were all she needed, teachers incorporated many other instructional and cognitive strategies. The key point seemed was that these “fit into” (Mark) or were “built into” (Keith) the structures from Question Structure for particular purposes. Mark, for example, combined reading comprehension strategies with Question Structure strategies, such as using different colours to highlight information that could serve as the answer for Locate, Cycle, or Integrate questions. He used the T-chart for paragraph and essay writing, but noted that he needed to pull in other strategies—perhaps from Think Literacy—to help students with summarizing Details when doing T-charts to obtain their Answer (topic sentence). He would “slot it in as a stage.”

For Mark, the Taxonomy provided the “landscape,” a “context.” Referring to the reading of short stories, he said:

[The taxonomy] is the superstructure in which my thinking exists. … I … was taking all those stories in the white book, their brainstorming for each Type of Match, sorting them … then bringing in reading strategies, things that you might find in Think Literacy for example, and then putting them into the context of structure. I think what’s happening is that the strategies are now getting a context, instead of “It’s Tuesday, therefore it must be Think Literacy, page 37,” or “I haven’t tried that strategy, or maybe I’ll try that now.” There’s a kind of framework.
Thus, for these teachers, structures to a certain extent addressed the strategy repertoire-program coherence problem by providing processes that could be repeatedly used across the semester/year and by providing frameworks and structures into which strategy use could be integrated. (See Table 7.3.)

**Table 7.3 The repertoire-coherence problem**

<table>
<thead>
<tr>
<th>Use of strategies</th>
<th>Gayle</th>
<th>Mark</th>
<th>Keith</th>
</tr>
</thead>
</table>
|                   | • Provided students with a few alternate strategy options (e.g., T-chart) that complemented strategies learned in other grades and subjects (e.g., web); worked with these over time  
• Consistency important at both classroom and school levels; considerable awareness of students’ whole-year and *school* experience  
• Emphasized integrating obligations (provincial initiatives, board directives, strategies) into coherent whole  
• Numerous instructional strategies used, including sophisticated strategies, e.g., Socratic Circle (in class and in examination)  
• Strategies integrated into structures  
• Coherence and integration enables rational action and options  
• Requires reflection and “a lot of thinking”  
• Integrated some instructional strategies, e.g., Place Mat, are into the *Question Structure* framework/learning curriculum  
• Program based on learning theory; structures underlie genre units and strategies |

Keith, Dawn and Mark all indicated that it might be useful to revisit *Think Literacy*, now that a structure-based approach was established in their practice. Mark said:

So, I think for me, I’d like to revisit—‘cause I haven’t looked at *Think Literacy* for ages—is to start looking back through those sources and see, especially in light of Type
of Processing, how those strategies then could become things to help, link us through some of those steps.

7.6 Looking ahead

The discussion above has in part addressed what I called the “repertoire-coherence problem.” The next chapter discusses and pulls together findings from chapters 5-7.
Chapter 8: Discussion (REturn to nub)

8.1 Overview of chapter

Figure 8.1 Chapter overview

Theorizing practice and generating knowledge

Implications for research
8.2 Review of study

This multiple case study used grounded theory to examine how teachers of grades 7-12 used Question Structure in their practice.

I first encountered Question Structure in the context of adolescent literacy. This experience prompted questions about how teachers used the constructivist information processing approach to reading, how structure-based learning differed from generic strategy instruction, how universal structures functioned in particular disciplines, and whether Question Structure helped teachers put intentional focus on the learner.

It became clear, however, that Question Structure was more about the instructional use of assessment than literacy—though its ties to the traditions of educational measurement made it atypical as a route to assessment for learning (AFL). In fact, based on its origins, Question Structure might be perceived as antithetical to AFL, which has been described as a new paradigm (Broadfoot & Black, 2004).

In order to study possibilities, I deliberately selected teachers in at least their third year of use; the central case (Keith) was in his sixth year of use. All taught language-based subjects: primarily Language Arts/English. On the one hand, this commonality facilitated cross-case comparison and the identification of themes and patterns. On the other, it limited findings by discipline.

I took an interpretive and psychological approach to teachers’ practice, considering (like Kennedy, 2005) teachers’ lines of thinking as well as their actions. Bennett’s (2011) theory of
action further clarified dimensions of practice as \textit{what, how}, and \textit{why}. Although Guskey’s (1986) model of teacher change process described the introduction of \textit{Question Structure} to teachers from an external, systemic point of reference, I took the teachers’ point of reference, assuming a complex ecology of influences, interactions, reflections, and enactments (after Clarke and Hollingsworth, 2002).

Data were collected through classroom observations and semi-structured interviews and in the form of teaching artifacts. Interviews and observations were staggered across the winter semester in order to see how structures were used over time in a single context and to help think about a teachers’ practice as a whole, and not only as practices. Data were analyzed through sub-questions emerging from personal experience and literature and from a grounded theory approach. Strategies of poetic inquiry evolved out of grounded theory analysis.

8.3 The ‘images of practice’ problem

An important part of the study was the images of practice problem: what \textit{Question Structure} looked like in teachers’ practice. Although Hardt (personal communication, March 27, 2012) indicated that he has a clear vision of what \textit{Question Structure} would look like in practice, there were no fulsome, concrete descriptions of that vision in the literature or resources, particularly as it might be realized in various grades, programs, subjects, or institutional

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{research_questions.png}
\caption{Research questions: images of practice problem}
\end{figure}

\textbf{Images of practice problem:}

- What does \textit{Question Structure} look like in practice?
- Which \textit{Question Structure} components do teachers use?
- How do they use them?
- Why do they use them this way?
- How do teachers use \textit{Question Structure} for their professional purposes, such as instructional planning or test design?
- How do teachers use \textit{Question Structure} in the classroom, with their students?

(from Chapters 1, 5, 6)
As Dawn commented, colleagues’ stories are often more effective than any explanation. One goal of this study was to diminish that gap with examples of practice, and specifically, of the practice of teachers experienced in using Question Structure. These examples are intended, not as definitive models, but as descriptive possibilities. My intention was that these might be of use to

- classroom teachers considering commitment to professional learning in Question Structure who want to have a sense of what it is
- classroom teachers implementing Question Structure who are looking for ideas
- system leaders who are making decisions about what initiatives to support
- system leaders and staff developers who need to understand Question Structure in order adequately to support teachers
- researchers who wish to study use of Question Structure in other contexts, for example in other subjects or with particular groups of students
- researchers who wish to develop Innovation Configurations or similar tools, building on that initiated by McVey (2011c)
- researchers who wish to use these examples as a basis for designing studies of Question Structure, for example, of effect on student achievement.

8.4 Change

The study found that teachers frequently and routinely used multiple components in a variety of ways over a semester. However, the study was based on the premise that teachers’ practice changed—that is, differed—as a consequence of using Question Structure. In other
words, teachers had not merely inserted new practices. One of the goals of this study was to examine the quality and quantity of that difference.

Voluntary, long-term commitment to implementation was considered an indicator that teachers thought Question Structure useful. Teachers indicated they believed that Question Structure had not only changed their practice, but also improved it. For example, Dawn said that using structures was “better practice” than using graphic organizers. Mark described his program before Question Structure as good, but said, “…this is so much better.” Keith and Jennifer said to me, “We are so much better teachers.”

Although teachers did not articulate it this way, they seemed to feel that change was “significant and worthwhile” (Richardson, 1990). They spoke of these improvements in terms of power—that is, in terms of having an “impact” or an effect. As Gayle commented, teachers saw that Question Structure “[made] a difference,” unlike other educational fads and “hoop-jumping” with which they were familiar. Gayle continued: “…through the Question Structure training, you start to look at what’s making a difference, what’s not, and what’s getting you where you want to be.” There was a sense that this was “the real deal.” Ironically, given the abstract nature of the Taxonomy and structures, teachers thought Question Structure practical.

Teachers concurred that the change that had occurred was “fundamental” and enduring, irrevocable and pervasive. Gayle commented, for example, that she would “always” use the T-chart for writing. Mark commented that he could “no longer do what [he] used to do” with text.
Jennifer and Keith described how *Question Structure* had penetrated “all aspects of [their] life.” All in all, *Question Structure* gave teachers new ways of *seeing*. All told stories of small but significant epiphanies: Gayle of her new understanding of cognitive load, Keith of his realization that students could co-participate in agenda-setting, Mark of locating his teaching within a previously obscure cognitive landscape, all of them of having thinking—their own and their students’—made visible for the first time. In some ways, this set them apart from their teaching communities. They could no longer look at instruction and learning as they had before.

8.4.1 New ways of thinking

In-service focused initially on using the *Mosenthal Taxonomy* to analyze the relative difficulty of questions. This discussion was embedded in a broader conversation about how students learn. I was struck by the degree to which this work sparked disequilibrium, provoked examination of assumptions, and provided new ways of thinking and principles of practice. For example:

*Explicitness.* This new way of analyzing questions—coupled with the unfamiliar language—prompted teachers to *question* the meaning of commonly accepted terms. For example, what does *analysis* mean? What does *evaluation* mean? Couldn’t analysis and evaluation be easy, moderately difficult, or hard? What does it mean to *facilitate* learning? (Keith) This seems to have prompted teachers to be *more explicit* about the kind of thinking they expected and the meaning of the verbs (directives) they used. This meant making *no assumptions* about students’ understanding of questions, tasks, and terms.

*Thinking like a learner.* This analysis also compelled teachers to approach questions *as learners do*: as respondents authentically grappling with the problem of what questions were asking for. In *Question Structure* terms they de-pixelated. They said that they began to think like
learners and realized that poorly conceptualized and articulated questions were often the source of students’ difficulties.

**Responsibility for students’ success.** This led to thinking about the purpose of questions. If questions were intended as opportunities for students to demonstrate what they knew and could do, then questions needed to facilitate rather than complicate understanding of tasks. (It did not mean simplifying content or reducing cognitive demands.) In terms of assessment principles, unclear questions were unfair, invalid, and unreliable. Teachers no longer assumed that students’ failure to answer a question meant students didn’t know the answer. In practice, teachers took some responsibility for students’ performance.

**Scaffolding.** Also, if questions were intended to help students learn by guiding their thinking, then questions needed to build toward that thinking. Teachers commented that question analysis cast doubt on their intuitive sense of question difficulty. They realized that they asked too many lower-order questions—many of which simply covered content without contributing to key understandings—and jumped from very easy to very difficult questions without building through moderately difficult questions. Working with the Taxonomy, then, heightened awareness of the need to pay attention to “building blocks” (Gayle, Jill), and be selective when scaffolding questions through the entire range of difficulty.

**Learning theory.** Teachers espoused the learning theory embedded in the Taxonomy. For example, implication hierarchies suggest that learning builds from simple to complex and that the complex “contains” the simple. To use Hardt’s (2010) metaphor, teachers could use the Taxonomy as a framework to ‘de-pixelate’—that is, scale back to simpler thinking, and then to ‘pixelate’—that is, explicitly build on simpler thinking to move students toward more complex thinking. Teachers understood this as meaning that students needed the Details accessed in lower
order thinking and simple questions in order to engage in higher order thinking. This added another layer to sequencing questions and had implications for content coverage.

8.4.2 The nature and scope of change

I began with criteria from Levels of Use (Hall, 1979) as lenses to think about change. These were helpful but of limited value for my purposes, as I was not examining system change over time. This limitation was also a function of my criteria for case selection, and teachers’ implementation contexts. Teachers were selected because they were committed to using Question Structure, participated in a significant professional conversation about Question Structure (communities of practice), and had considerable knowledge/understanding and experience. None was part of a mandated systemic initiative. Although teachers referred to outcomes, this study did not examine effect of implementation on student outcomes; it focused solely on what was implemented, how, and why. With respect to implementation, many studies examined fidelity. However, I had confidence that teachers had solid understanding of the system—even if their understanding was imperfect and evolving, and even if they weren’t always managing to do what they thought they were doing. Furthermore, Question Structure is not prescriptive. Because Question Structure is a system, not a program, there is no model or completed template against which to judge fidelity.

The following change dimensions emerged:

- **Displacement**
  - Did teachers use Question Structure in addition to or instead of other approaches?
  - If use of Question Structure replaced other practices, what was discarded and what was gained?
• Integration
  o *Question Structure* is a system: Did teachers extract single elements of
    *Question Structure* and use these discretely, or did they use multiple elements
    in interrelated ways?
  o A practice is a totality: Did teachers connect structures to other aspects of
    practice? (for example, subject content, subject pedagogy, instructional
    strategies, assessment practices)
  o Was use of structures localized or everywhere apparent?
  o What was the emphasis, or importance, of *Question Structure* use relative to
    other aspects of practice?

• Theorizing practice and generating knowledge
  o Innovation is regarded as a ‘higher’ Level of Use than replication. Have
    teachers used *Question Structure* in new ways?
  o Have teachers generated new educational knowledge?
  o What significance, or meaning, did teachers attach to *Question Structure*?

• Change in practice as a totality:
  o Did teachers’ overall orientation change? For example, was instruction
    traditional or reform-oriented (constructivist)?

8.4.3 Displacement

*Did teachers use Question Structure in addition to or instead of other approaches? If use of*

*Question Structure replaced other practices, what was discarded and what was gained?*

Teachers insisted that they *replaced* previous practices with uses of *Question Structure*.

For example, for paragraph writing, Gayle used Snapping instead of identifying key words, and
T-charts instead of web diagrams. Her explanation was that she was providing students with an alternative approach, and her hope was that they would continue to use the approach that suited their purposes in school and beyond.

The secondary teachers replaced previous approaches to constructed response with Expository Structure. In so doing, they combined Expository Structure with writing process—collecting and organizing ideas, drafting, revising, peer reviewing, editing, and publishing. The T-chart replaced outline templates (and to this Keith added a prose outline, which students generated, in contrast to his previous practice of distributing outline templates). Some of the language changed, but teachers believed that the new metaphors (for example Leads and Exits) were effective with students. Teachers used question generating, Agenda/Narrative Structure, and/or PFC as new ways of generating writing foci.

Teachers had several reasons for preferring the new approaches. Because the T-chart built on question Snapping, they could then clarify the task and focus on framing. Most appealing was that the process seemed both effective and easy: collecting Details into the T-chart and summarizing these as an Answer (topic sentence) seemed to get students over the biggest hurdle in writing. At that point, students had much of the work done and “just” had to “move it over” (Mark) and convert to sentences. Teachers contrasted the (surprising) facility of this work to the hard work of writing essays and of motivating students (especially students in Applied and College programs) to write essays that characterized previous practice.

In secondary, lists of teacher- or textbook-questions were replaced by student-generated Type of Match questions. Teacher-directed instruction, such as lecture, was replaced by collaborative work on generating questions and using Agenda/Narrative Structure or PFC as thinking tools. These two tasks were used for building comprehension, but teachers indicated
that they were also used generatively. Teachers described these activities as student-centered, inclusive, flexible, non-directive, open-ended, and comprehensive. Teachers could identify higher-order thinking required to work with the structures and used the structures to address curriculum expectations and discipline-specific kinds of thinking.

I also realized that teachers were not only substituting new practices for old, or combining them, but also *reinterpreting* other practices, and *translating*, or *converting*, them into *Question Structure* terms. For example, Dawn leafed through *Think Literacy* (Ministry, 2003b) and, pointing to various strategies, said she’d do this as a question or that as a T-chart, and so on.

When teachers spoke of *additions* to their practice, they did so in the context of first *learning* how to use *Question Structure*. For example, Gayle did suggest that teachers new to *Question Structure* could begin by *adding* *Question Structure* elements to their practice. However, when secondary teachers spoke of the additional work involved in implementing *Question Structure*, they were referring to the related tasks of deepening their understanding and figuring out how to use it. For Gayle, *Question Structure* “fit into” what she already did, suggesting that it was a new way of doing what she had done before. Secondary teachers, however, that strategies that they had used previously *fit into Question Structure*.

All agreed that, in the long run, using *Question Structure* lessened and simplified their planning and preparation. For secondary teachers in particular, this seemed to be connected to the relationship between *Question Structure* and subject content and pedagogy. Teachers no longer prepared explanations of content/text, but rather planned use of structures that *enabled students* to interact with content/text, *freeing* teachers from driving every moment of instructional time. The secondary teachers described this as facilitative (Keith) and “liberating” (Mark). Nevertheless, it appeared that it was teachers’ experience and strong subject knowledge
made discipline connections and facilitation possible. Themes of student empowerment, freedom, and simplification (consolidation) ran through the transcripts.

8.4.4 Integration

Did teachers extract single elements of Question Structure or use elements in interrelated ways? Were structures connected to subject content, subject pedagogy, other practices and aspects of practice? Was use of structures localized or everywhere apparent? What was its emphasis, or importance, relative to other aspects of practice?

In all cases, teachers’ work with Question Structure moved toward complex integration. By this I mean that their use was characterized by multiple connections that strengthened the role of structures in the whole. Some of these connections were specific and explicit, others far-reaching and implicit. For example, because Gayle used only Snapping, Matching, and T-charts, connections were fairly obvious: for example, the T-chart is built on Snapping the question. However, she was beginning to see how she could make connections between various activities, for example, between Type of Match and reader response journal prompts. This layering and these forward-backward links also typified secondary teachers’ uses.

The secondary teachers built instructional activities around the interrelated use of multiple structures. For example, Keith used collaborative question-generating and PFCs to build comprehension, and then used the PFC information to generate theses (Levels category). The PFC categories were linked explicitly to types of questions and also used to teach Integrate during quotation analysis. Finally, PFCs served as class notes and sources of information for essays, which were written using Expository Structure.

Role in program planning. These uses pointed to one of the biggest findings: the role of Question Structure in instructional planning and program design. As mentioned, a central
activity early in in-service was the technical analysis of question difficulty using the *Mosenthal Taxonomy*. As expected, this activity focused on refining curriculum materials such as assignments and tests. Unexpected was the degree to which this activity prompted rethinking instructional approaches, redesigning units or programs of study, and, in Keith’s case, reconceptualizing teaching. This activity evolved to include additional structures.

It appears that analysis of question difficulty helped teachers develop an understanding of the *Taxonomy*, which functioned as a cognitive map, or framework. Working iteratively *between* the specific, technical focus and the framework seemed to encourage teachers to attend both to the parts (for example, an assignment handout) and to the whole (their instructional program), to move from refinement of particulars to substantial revision and re-conceptualization. (See Figure 8.5, next page.) This iterative movement between parts and wholes seemed also to characterize students’ use of the Agenda/Narrative Structure and PFC: students also seemed to be negotiating between the local and global, between the particular and the “big picture.” I began to think that Hardt’s Zoom Strip (and his metaphoric use of Banyai’s (1995) *Zoom* and *Re-Zoom*) as conceptually and functionally significant to use of the structures.

Gayle’s seigneurial system assignment and Dawn’s short story lesson handouts are two examples of this process. Close examination of these two examples revealed how many instructional planning acts occurred:

- increased clarity about what and how much information students were to provide in response to each question (clarifying specific questions)
- articulating the point of the assignment (clarifying global understanding)
- scaffolding of questions from easy through moderate to difficult (sequencing)
• elimination of questions that focused on content without building toward the biggest, most difficult and most important question (selecting)
• adding open-ended tasks in which students constructed understanding (for example, Gayle’s Land Development Activity)
• substitution of structures for questions (for example, Dawn’s substitution of Agenda/Narrative Structure for questions on short story elements)
• collaborative work on open-ended tasks (student-driven work)

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73 I began to diagram this as a from...to... progression, but discovered that I needed three cells, which eventually became Parts, Functions, and Connections. Numerous times while writing, I found myself thinking in Question Structure terms, without having planned to go there.
• combination of global question with consolidating activity (for example, Dawn’s use of the T-chart with the one remaining question)
• attending to student readiness (for example, by linking to earlier activities)
• building coherence (for example, by building process connections between texts).

Four aspects of Question Structure seem to have fed this thinking. First, because Question Structure is a system, all components are interrelated. For example, the Snapping and Matching used for analysis and refinement of specific questions operationalize dimensions of the Taxonomy, so teachers are always working back and forth between the two.

Second, teachers realized how the same structure could be used in a variety of ways across texts and contexts. This meant, as Dawn pointed out, that while teachers were using structures to link study of different texts (and genres), they also built students’ facility with and understanding of structures. This was the core of Keith’s spiral curriculum. This transportability did not preclude either the nuanced and complex analysis of specific texts or the use of other strategies as pedagogies that zeroed in on particular problems and thinking tasks.

Third, because all elements of structure (Parts, Functions, and Connections) and all structures (Question, List, Expository, Agenda/Narrative) are interrelated, teachers learned how to build learning activities by sequencing and combining structures.

Fourth—and this is key—because theory about how students learn is congruent with the Mosenthal Taxonomy, teachers began to conceptualize learning as movement through the Taxonomy. This supports Hardt’s (2010) statement “I think we teach about learning.” I see this as consistent with the literature finding that a focus on students’ learning, rather than on specific strategies or programs, results in significant change in practice. (See for example Franke et al., 1998.)
All in all, the issue of integration central to this discussion of program proved central to the overarching research question about teachers’ use of *Question Structure* in practice. The sub-questions and research problems are related to it:

- the educational measurement problem: the instructional use of assessment (AFL)
- the repertoire-coherence problem
- the universality problem.

### 8.5 The educational measurement problem

In some ways teachers used the *Mosenthal Taxonomy* in the methodical way researchers suggested that teachers use Bloom’s (see for example Airasian & Miranda, 2002; Ferguson, 2002): to identify the range of cognitive objectives that could (should) be addressed. The difference is that the teachers used the *Mosenthal Taxonomy* as a guide also for mapping *how to reach* the objective—perhaps because it is a *Taxonomy* of cognitive processes, rather than of cognitive objectives. In other words, the system supported both a measurement-driven approach to program design and instructional use of assessment (AFL).

#### 8.5.1 Program design

*To design* means to plan for a particular purpose so that the parts function together to achieve that purpose. In *Question Structure*, Agenda Structure is an instructional design tool for identifying Goals (learning objectives) and strategies for obtaining them (Solution Set-up). *Alignment* of goals, instruction, and assessment is central. A corollary is that all elements be relevant. This rational, Tylerian means-ends approach assumes that worthwhile ends can be articulated and measured. Such alignment can increase the validity of assessment. Teachers had
already been introduced to versions of this, usually through backwards design. Question

Structure seems to have clarified, confirmed, and built on this way of thinking.

Teachers believed that this approach strengthened their programs. For example, Keith commented that he no longer “wandered through a subject” and that he had resolved to eliminate activities that did not directly and explicitly pertain to learning objectives. In addition, he believed that students better understood and were motivated by the connections between classroom activities and assessments. Although I obtained no detailed, comprehensive description of any program (these were works-in-progress, the importance of which became apparent towards the end of the study), data suggested that they were purposeful, coherent, and aligned. Teachers had a vision of the whole—not as a sequence of lessons or texts or units of study—but as a complex, layered learning process that integrated many elements, circled repeatedly through the same structures, and made numerous links forward and back. Dawn’s comment on how previously each short story was “just a story” superficially connected to other parts of the course by genre or element speaks to how teachers’ thinking changed.

Teachers seemed to have reaped the benefits of this backwards planning approach without becoming trapped within it. The alignment of learning goals, instruction and assessment helped teachers direct their energies to teaching what they assessed (and assessing what they taught: a validity issue). The approach helped them make learning goals, criteria, and the relevance of learning activities explicit to themselves and to their students. It helped them provide a problem-solving rationale. However, I had the sense that measurement flowed from instruction; measurement did not drive instruction.

First, there was a healthy tension between sparseness and rigor of the design framework and the bricolage of teaching. (I am reminded of advertisements for Electronic Data Systems
(EDS) advertisement posted on You Tube: “Cat Herders” and “Airplane,”74 which capture for me the complex, social, in-the-moment dimensions of teaching.) From the teachers’ perspectives, change occurred in a series of incremental changes spread over three years. In fact, teachers did not think of their work as implementation of an innovation that would change practice from one thing to another and reform education. As Mark commented, “It didn’t feel like that. It felt like teaching.” Further, Mark, in particular, illustrated how teachers struggled to integrate diverse initiatives, directives, and resources. Carr and Kemmis’s (1986) description seems to fit:

…practitioners tend not to experience their expertise as a set of techniques or as a “tool kit” for producing learning. They can identify some “tricks of the trade” and techniques, certainly, but these are employed in complex patterns, in overlapping sets, in combinations …… (p. 37)

The Taxonomy functioned as a framework for making sense of and incorporating these. As Mark said, “Everything fits into it.”

Second, while it appeared that teachers began by applying technical knowledge, they were engaged in (judicious) experimentation and inquiry in which they generated educational knowledge. As Jennifer commented, they had to “absorb the theory” before they could “play” with it. Teachers did the thought-work: they (re)created their programs. Revision resulted from processes of enactment and reflection and extended interaction with Hardt (see Clarke and Hollingsworth, 2002). The revisions I saw took three years or more. And teachers’ programs were fluid, not fixed: they were

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74 Available: [http://www.youtube.com/watch?v=Pk7yqlTMvp8](http://www.youtube.com/watch?v=Pk7yqlTMvp8) and [http://www.youtube.com/watch?v=L2zqTYgcpfg](http://www.youtube.com/watch?v=L2zqTYgcpfg)
in a constant state of revision as teachers discovered how they might use structures. Mark—who expressed surprise at Dawn’s modification of the Agenda/Narrative Structure, which he had thought inviolable—was one indication that the most benefits (and intense commitment to Question Structure) accrued to those teachers who saw the question-answering strategy and structures not as fixed information to be applied, but as frameworks for continued inquiry in their classrooms (see Franke et al., 1998).

Third, teachers’ thinking was changed by working with the taxonomy and structures, just as their instructional actions were changed by their thinking. As Gayle commented: Question Structure is “totally based on reflection … it’s all about reflection and reflecting on the work that we’re producing and the work that the kids are producing.” Programs and instructional approaches were in a continual state of revision. Carr and Kemmis (1986) identified reflexivity as a critical distinction between techne and praxis. There seemed to be considerable room for the art of “practical judgment,” for “the wise man aiming to act appropriately, truly and justly in a social-political situation” (Carr & Kemmis, 1986, p. 17).75

In keeping with this process, Hardt’s role seems to have shifted from authority who communicated information to consultant who helped teachers make “sound practical judgments” (Carr & Kemmis, 1986, p. 31) about their use of Question Structure. Although Question Structure provided a framework and tools, teachers still had “moral and prudential answerability for practical judgments actually made within the context of existing educational institutions” (Carr & Kemmis, 1986, p. 31).

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75 It is not clear, however, whether practical judgement is what Hardt means when he refers to the “art of education” that necessarily complements the science. He could be referring to skill.
8.5.2 Instructional use of assessment

The Mosenthal Taxonomy, of course, is a “metric” (Hardt, March 27, 2010) and measurement tools are associated with (summative) evaluation. It is easy to assume that the considerable knowledge teachers gained about test design correlated to an emphasis on testing and evaluation. However, teachers in the study did not use the Taxonomy for measuring or quantifying student performance in a literal sense. Rather, the taxonomy served as a scaled “map” or backdrop that facilitated the process of classroom instruction and assessment (AFL). Teachers’ use confirmed my hypothesis that the Mosenthal Taxonomy could provide a framework for assessing (in the sense of “gathering information about”) students’ progress. It provided points of reference that enabled teachers to interpret students’ responses in relation to other points of reference. It provided criteria (unrelated to content) that could provide the substance of feedback.

i. Theorizing practice and generating knowledge

Have teachers used Question Structure in new ways? Have teachers generated new educational knowledge? What significance, or meaning, did teachers attach to Question Structure?

This use of the Taxonomy was complemented by theory about instruction and learning. Teachers’ use (including sequencing) of structures was based on their thinking about how students learned—not on traditional courses of study, genre units, favorite activities, and so on. Teachers were very conscious of the complexity scales and of the need to build from simple to

\footnote{Some teachers did connect the Taxonomy to measurement and evaluation. Jennifer, for example, suggested that categories of the taxonomy corresponded to the provincial Achievement Chart in that Types of Match might define Levels 1, 2, 3, and 4. Darlene saw lower-order cells (“in the box” cells) on the Taxonomy as correlating to the Knowledge category and other cells to Thinking.}
complex—and in one dimension at a time without jumping across the middle steps. Teachers believed in providing students opportunities to practice (not to be confused with drill and skill exercises) and build automaticity in skills, strategies, and processes. They believed in providing explicit instruction in how to do things (as opposed to assuming that students should know how) and in providing feedback on progress (the Taxonomy providing a point of reference for assessing progress). They believed that every student was capable of learning and improving (an incremental rather than a fixed view of learning capability). This is most obvious (though least articulated) in Keith’s case, where learning how was the program.

In other words, teachers seemed to have a solid understanding of formative assessment and AFL. (See Table 2.2, Chapter 2.) For example, in in-service, Hardt emphasized the continual gathering of information about students’ understanding. Teachers certainly seemed to understand and implement the continual, seamless, cyclic process of instruction, assessment, and feedback central to AFL. “Dropping a T” (using a T-chart) seemed to be the primary tool teachers used to obtain a window into students’ thinking, treating it both as a snapshot of thinking and as a process piece that opened a window onto students’ writing. However, teachers also used student-generated prose outlines developed from T-charts (Keith), student-generated questions, and to a certain extent, Agenda/Narrative Structure and PFC for this purpose. These were supplemented with oral questioning and discussion. My observation days indicated that teachers used these instead of strategies like Traffic Lights suggested, for example, in the Ministry (2010) policy document and resources.

Teachers were also developing nuanced understanding of feedback. Strictly speaking, feedback is information that contributes to improved learning or performance (Sadler, 1989). Teachers were finding ways of ensuring that information was used for that purpose. For
example, Keith was using checklists and a series of peer reviews. He also discovered that if he scheduled the writing of two essays back-to-back (as opposed to staggered throughout the semester), the feedback on students’ first finished product served as a timely source of goal-setting for the second essay. Gayle collected practice pieces and then provided whole-class and individual feedback, usually in a problem-solution framework. The latter took the form of coaching. In other words, the learning theory driving teachers’ practice was constructivist.

In addition, as Keith’s description of teacher as facilitator suggests, teachers developed their role as guide, or coach (as opposed to roles as communicator or conduit of information and evaluator). In this sense, they “sat beside” their students. This was tied to teachers’ emphasis on transparency, clear communication, and explicit instruction—represented by Keith’s image of pulling aside the curtain. This was tied, as well, to efforts to involve students in the assessment process, for example in conversations about criteria and review of work-in-progress.

Teachers had a clear sense of how to help students develop self-regulation, which Perrenoud (1999) suggested should provide the framework for AFL. Keith, for example, frequently solicited “metacognition” from his students—short pieces in which students identified their strengths and weaknesses. The responses he shared from Applied Grade 10 students demonstrated knowledge of specific, detailed criteria, particularly with respect to essay writing. Mark was experimenting with using simple Agenda/Narrative Structure for goal-setting and self-monitoring. This was supplemented with one-on-one conferencing, though Mark was frustrated by the lack of time to do this sufficiently (and I wondered if his struggles pointed to a significant challenge pertaining to goal-setting). Mark and Dawn were developing performance walls and checklists.
Assessment information, incidentally, pertained to teachers as well as to students, as is consistent with AFL. In contrast to earlier defensiveness, Gayle frequently solicited oral feedback from students and readily assessed her own work, for example the quality of questions, in front of students. Keith regularly solicited oral and written feedback. Dawn was more hesitant about soliciting feedback on instruction from students, but like all the teachers in this study was engaged in a process of continual self-criticism. This was particularly evident in her candid discussion of how she revised lesson handouts and how she analyzed video of her own teaching.

To be sure, teachers were struggling with aspects of AFL, but these were issues of policy and practice unrelated to Question Structure per se. Despite their emphasis on learning, Keith and Gayle, for example, struggled with students’ desire for marks as feedback on their work-in-progress. By the same token, teachers’ implementation of AFL was not entirely attributable to Question Structure. Assessment reform in the 1990s and the release of the Ministry’s (2010) assessment policy no doubt played a role. Mark and Dawn, whose department had clearly explored the meaning and implications of Ministry assessment reform over the previous decade, were best able to make connections between these assessment principles and Question Structure. Overall though, teachers’ use of Question Structure is congruent with and supportive of AFL principles and practices.

8.6 The repertoire-coherence problem

8.6.1 Question Structure and Think Literacy

In my staff development experience, I had observed the same teachers responding to both literacy resources/in-service and Question Structure in-service. It was not that one was better than the other, it was that the nature, appeal, and use of these seemed to differ in significant ways. I thought that a structure-based approach might provide a coherent framework for strategy
use and so leverage the power of instructional strategies. I thought also that by examining this hypothesis more closely, I would better understand how teachers understood the strategy approach in literacy and the structures-based approach in Question Structure. On the whole, this study supported my initial hypotheses.

**ii. Structure and Strategy**

Dawn reflected that for her, the structures were the “something missing” in a sound English program. She described structures as the “underpinning,” as what “exists before the content.” That a structure is evident “here, there, and everywhere” (Keith) is “what makes it successful” (Gayle). Thus, teachers felt that Question Structure provided both an essential core (foundation) and framework (big picture map). Instructional and cognitive strategies were built onto the foundation and ‘fit into’ the framework. In other words, structures could be seen as underlying strategies and as providing a comprehensive cognitive context for them. While teachers identified observation days relevant to Question Structure uses, it was apparent that, in varying degrees, teachers incorporated other pedagogies; structures were not the only tools they used. The framework provided an overall “landscape” on which teachers mapped instruction and learning; strategies could be pulled in to address specific thinking and learning problems. As Mark commented in

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**Figure 8.10 Initial hypotheses**

**Hypotheses:**

- While a strategy repertoire increases teachers’ flexibility and ability to support a wider range of students, sheer quantity doesn’t necessarily improve instruction. Knowledge of underlying structure could make strategy use more intentional and selective.

- The taxonomic framework and universal structures could provide a nexus for linking various initiatives, such as assessment, literacy, differentiation, critical thinking, and informational writing.

- *Question Structure* could help teachers leverage the power of questions in instruction, assessment, and learning. Specifically, the *Mosenthal Taxonomy* would provide a framework for scaffolding questions, differentiating instruction, and assessing progress.

(from Chapter 1)
the focus group (and the others concurred): “Everything fits into [the Taxonomy].” He noted, for example, that composing the Answer (topic sentence) in the T-chart required a strategy that would help students summarize the Details. All in all, however, teachers felt that structures fit into, or supported, their own teaching approach.

Unlike instructional strategies in Think Literacy (Ministry, 2003b) which were seen as fairly elaborate, the structures were seen as being irreducible and uncomplicated—though this didn’t mean that they were simplistic or that they involved only lower-order thinking. Because these few structures were also universal, they were more transportable. Thus, whereas Think Literacy strategies were described as suitable for specific uses, structures were described as suitable for multiple purposes, content, and contexts. Whereas Think Literacy strategies were described as teacher-friendly and labor-intensive, the structures were described as student-friendly and facilitative (for both students and teachers). Whereas Think Literacy strategies were seen as pre-determined and directive, structures were seen as flexible and open-ended.

Dawn was most vehement in her criticism, particularly of graphic organizers. Mark was most restrained in his praise of Question Structure, commenting that structures don’t “supercede, but [seem] to work as well as some of the other strategy approaches, in terms of cracking a text.” Although introductory lessons (for example in using the T-chart to write an opinion paragraph) seemed to focus on step-following, in fact the thrust was away from mechanical use and toward mindful use of structures and strategies as thinking tools.
Looking for connections in the research literature, I also juxtaposed structures to West et al.’s (1991) work on cognitive strategies and instructional design. In some ways, Expository (T-chart), List, and Agenda/Narrative Structures and PFC resemble frames, a “spatial learning family of cognitive strategies” (West et al., 1991, p. 79). West et al. (1991) defined a type one frame as “a grid, matrix or a framework for representing knowledge” (p. 60). The examples provided by the authors are Intersected Lists. Interestingly, all of the authors’ informational examples of Type 1 frames (types of rock in earth science, forms and functions of memory, parts and functions of the human digestive system) could be reconfigured as Parts, Functions, and Connections (PFC) (p. 60-61) and all of the narrative examples (goal or story frame in history) as Agenda/Narrative Structure. The difference seemed to be that West et al.’s informational examples are task-specific configurations of PFC (that eliminate dimensions or nest a layer of detail) and the narrative examples are simple forms of Agenda/Narrative Structure.77

I was interested to note that teachers’ uses of Lists, Agenda/Narrative Structure and PFC correlated with uses of frames noted by West et al. (1991). For example, the authors commented that the frames organize information, render text more accessible and understandable, aid recall, support group discussion, and facilitate generation and evaluation of ideas. In other words, they can be “used to promote thinking, decision making and creativity” (p. 72). They cited Davies and Greene (1984), who found that frames aided reading comprehension, and could be used to take notes, interpret information, or plan. They also referred to experiments by Broadbent, Cooper and Broadbent (1978) that suggested that matrix and hierarchic organization had similar effects

77 Type 2 frames are matrices (Intersected Lists) that promote inferencing. Learners can provide some information, for example from experience or from text. The remainder of the information is generated through making logical inferences based on the given content and structural relations (“law-like statements,” p. 78) between the cells. PFC, Lists, and Agenda/Narrative Structure exhibit these relationships between cells. I have seen Hardt demonstrate this use of structures (for example, in math), but I did not see this use during observation. That said, the material didn’t warrant it.
on recall. The distinction, they argued, is that whereas a hierarchy provides a single “retrieval path” between labels and items, the matrix provides several possible retrieval paths—and this seemed to be the kind of unique thinking that teachers (Dawn, Mark, and Keith) wanted to encourage in their use of Agenda/Narrative Structure and PFC. West et al. cited studies indicating that framing supports all learning groups (Fitzgerald, 1984), particularly low-ability students (Dreher & Singer, 1980). They noted that there are two predominant uses of frames. The first is “integrative”: that is, they help learners see the whole picture. The second is “disintegrative”: that is, it helps learners break a whole into parts. This calls to mind Gaudelli’s (2001) juxtaposition of the rationalist (macro) and constructivist (micro) perspectives, and points (again) to the part-whole, zoom-in/zoom-out aspect of Question Structure.

The difference between frames and structures seemed to be that the Scope and Sequence in Question Structure identifies (or claims to identify) fundamental, universal, underlying structures and elements of structure. Teachers then selected and modified according to their purpose and context. The structures were used to access and think about content. West et al., however, indicated that frames are constructed from content: “major ideas, concepts and principles” and from “organizing strategies” such as cause-effect, form-function, advantage-disadvantage, plans-actions-outcomes (p. 69). West et al. advised that too many frames can become confusing—a common criticism of graphic organizers by teachers using structures. Indeed, as Dawn pointed out, one of the strengths of the structures-based approach was that it reduces the number of frameworks to four.

Although West et al. (1991) wrote about instructional design, they did not address issues of sequencing frames, using frames for learning how to learn, building automaticity of use, instructional coherence, or designing overall learning progression. There is no Scope and

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78 This seems to be what Gayle is referring to when she suggested that students could develop their own structures.
Sequence. In fact, they suggest that avoiding overuse helps ensure the instructional novelty that can hold students’ interest. In short, frames are not structures, in the sense of those in Question Structure. They are strategies, and while structures can be used strategically, as teachers suggested, there is a difference. Dawn referred to structures as the “building blocks of learning … of thinking … [in] any learning task.”

8.6.2 Localized and pervasive use

As indicated above, an important and unanticipated finding was the degree to which the structures-based approach contributed to—or became the basis of—program re-conceptualization and increased coherence. This derived in part from the universality (transportability) of and interrelationships between the structures. As Keith said, they could be used “here, there, and everywhere.” They functioned as a program ‘spine’: supporting activity from below the surface. Keith attributed his low-tech, simply structured lessons to his use of structures. Teachers spoke of lessons being more authentic and “natural” (Keith and Mark), more directly focused on engagement with text (Keith), less complicated by “cutsey” strategies (Keith), and less impeded by official constructs (Mark). Dawn was also confident that the four structures could be used anywhere. She didn’t have to teach a new structure or strategy each time; instead students could build automaticity, develop complex uses, and free cognitive space for thinking deeply about the matter at hand. She said, “I have what I need. Everything else will fit into it.” For this reason, teachers used structures across texts, tasks, contexts, and units of study—though they varied the approach in some ways each time and used instructional strategies for variety and interest. I did not, however, think that teachers treated texts and contexts as if they were the same. Keith ‘spiraled’ through the same structures in each unit of study, demanding increasingly
sophisticated and independent use. To misquote the title of the old television series: “Have structure, will travel!”

8.7 The universality problem

In part my question about universal structures is a question about their place in the teaching of particular subjects.

Researchers have argued that the infusion of generic strategies across the curriculum becomes increasingly ineffective as subject specialization increases (Alvermann, Friese, Beckmann, & Rezak, 2011; Cohen & Hill, 1998; Conley, 2008a; Mayer, 2004; O’Brien et al., 2001; Porter et al., 2003; Shepard, 1991; Shulman, 1986; Shanahan & Shanahan, 2008. Although Grossman and Stodolsky (1995) argued that researchers are moving away from “generalizations about teaching that transcend subject matter” “to a recognition of subject matter as a pivotal context for teaching” (p. 228), the literature is not unanimous. Richardson (2003), for example, wondered about the possibility of transfer across contexts, citing Salomon and Perkins’ (1987) finding “that there are general skills that operate in contextual ways” (p. 1632) and Leinhardt’s (2001) study of what explanation looks like across subjects. O’Brien et al. (1995) argued that strategy instruction within specific disciplines, itself structuralist, often serves the technical interest. While Grossman and Stodolsky (1995) argued that educational reform must be shaped from within the disciplines, O’Brien et al. (1995) argued that organization into disciplines is related to power struggles that impede reform.

As mentioned above, I initially equated the generic and the universal, and therefore considered Question Structure in light of the criticism of generic strategies and generic in-service, and wondered if teachers were connecting universal structures to subject pedagogy.
Theorizing practice and generating knowledge.

Have teachers used Question Structure in new ways? Have teachers generated new educational knowledge? What significance, or meaning, did teachers attach to Question Structure?

A major finding was that teachers were linking structures and Language Arts/English subject content and pedagogy. Frankly, this should not have been as surprising as it seemed to be. On the one hand, a central image in Question Structure in-service emphasizes the relationship between structure, strategy, and content. On the other hand, teachers brought subject expertise to their learning about Question Structure. The links they made depended on their subject expertise and teaching experience. (That said, this finding in no way suggests that Question Structure can be connected similarly to other disciplines.)

This was perhaps least true of Gayle—at least, she did not speak to me about discipline-specific thinking or practices. In her interchange with students in the opinion-paragraph-T-chart lesson, we can see Gayle addressing a pedagogical problem (teaching students to select information to support an opinion) common in writing lessons. Overall, however, Gayle is focused on processes (for example writing) and cross-curricular skills.

The other teachers were also using structures to support processes of oral communication, reading, and writing, which, I suppose, are cross-curricular concerns. (The Ministry (2003c) identifies them as such. See for example p. 24.) Certainly they are central to the provincial Language Arts and English curriculum:

Literacy development is a communal project, and the teaching of literacy skills is embedded across the Ontario curriculum. However, it is the English curriculum that is dedicated to developing the knowledge and skills on which literacy is based – that is,
knowledge and skills in the areas of listening and speaking, reading, writing, and viewing and representing. (Ministry, 2007, p. 3)

Question-generation, Agenda/Narrative Structure, and PFC were the platforms for regular collaborative discussion. Teachers relied on students to confirm and clarify understanding for each other. Mark observed that use of Agenda/Narrative Structure with challenging text seemed to provoke students into spontaneously posing questions. Teachers structured these activities further with strategies such as Think-Pair-Share, Place Mat, Jigsaw, Choral Reading, Readers Theatre, and Socratic Circle.

All teachers used Question Structure to support reading comprehension and reading-to-learn activities. During classes I observed of Gayle’s, this took the form of answering lists of questions and responding to prompts (which she was relating to Type of Match categories) in reading response journals; for the others, it took the form of students creating Type of Match questions. Teachers felt that the process of creating questions—even Locate and Cycle questions—compelled students to closely reread text and build (basic) comprehension, which teachers believed necessary to higher order thinking, supporting Guan Eng Ho’s (2005) argument that lower order questions may serve pedagogical purposes (see also McNamara, 1981). For Keith, particularly, it was necessary that these be considered in the context of the whole, for example, in terms of contribution to meaning or to achieving the author’s purpose. Secondary teachers directed their energies to Integrate and Generate questions, which became the focus of discussion or writing. Gayle and Mark also used Agenda/Narrative Structure and Keith used PFC to support comprehension. The orientation of these activities was constructivist.
All teachers used Expository Structure for paragraph, essay, and report writing. Most of the writing I observed was of this type, but that may be due to teachers’ selection of observation days that focused on Question Structure and to the emphasis on constructed response in schooling and on the OSSLT. All of the secondary teachers mentioned informal essays, although I did not see these. Mark spoke of having students use the Agenda/Narrative Structure as a planning tool for an essay (his “default”) and a documentary film.

Teachers combined Expository Structure with writing process—generating ideas, organizing details, drafting and revising, reviewing (including peer reviewing), editing, and publishing. At various times teachers insisted that the Scope and Sequence and the metaphors (for example, Leads and Exits for the introduction of quotations and for elaboration) “worked,” although it did not solve all pedagogical problems (for example articulating sophisticated topic sentences in Mark’s Applied grade 10 class) or preclude the need for clarifying interchanges—hard work! (for example, Gayle’s efforts to help students understand what an opinion was). In Keith’s classes, the focus on Expository Structure merged into a focus on formatting conventions, pointing to an emphasis on the procedural and quantitative.

Hardt (2010) contended that Expository Structure lends itself to paragraph/essay writing that is question/directive-driven. That said, teachers did not limit themselves to taking this literally. Keith, for example, developed a process in which he used PFC (specifically, Connections and Levels) to develop thesis statements. These then functioned in much the same way as questions/directives to drive the writing.

In a general way, then, universal structures were used for pedagogic purposes in language-based subjects. What struck me, however, was how the structures fore-grounded

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79 The only other writing that I saw was Gayle’s students writing a highly-structured rhyming poem in geography and Keith’s students composing a sonnet (building it based on the form and structure). Dawn spoke of a variety of writing forms, including freewriting, and writing a myth, but didn’t describe her approach.
pedagogic problems I had thought, based on my teaching experience, as important in the context of the discipline. For example, how do you help students construct understanding of text? How do you ensure that they know the details well? How do you move students from lower-level to higher-order thinking about text? How do you teach students to develop topic sentences and thesis statements? Examples of subject content and pedagogy include the following:

- Dawn’s use of Agenda/Narrative Structure to address the short story elements (previously addressed through series of questions)
- Mark’s use of Agenda/Narrative Structure to analyze character’s often conflicting agendas in drama and film
- Teachers’ use of Expository Structure in writing paragraphs and essays. (This was particularly evident in Mark and Keith’s Applied grade 10 class, where having students begin and complete such writing is a persistent pedagogical problem.)
- Teachers use of Expository Structure to grapple with specific writing issues: topic sentences/thesis statements, supporting statements with relevant evidence, using transitions, introducing quotations, elaborating on evidence
- Gayle’s and Mark’s use of the T-chart and Keith’s use of PFC to teach his students how to draw a conclusion from evidence
- Keith’s use of PFC to engage students in various kinds of discipline thinking, such as making inferences and making connections
- Keith’s use of PFC for quotation analysis
- Mark’s use of Agenda/Narrative Structure for critical literacy—the concept of constructing text, author purpose and perspective, bias, and audience manipulation. (As he said, the structure enabled him to cover “a boatload of expectations.”)
• Mark’s use of Agenda/Narrative Structure to engage with textual ambiguity and explore the nature of tragedy

• Mark’s use of Agenda/Narrative Structure as a holistic approach that counteracts the pedagogical tendency to fragment text, for example, through assigning lists of questions.

I’m not sure how much to insist on the content-specific pedagogy. I see, for example, a difference between Keith and Mark. The structures did not solve all Mark’s discipline-related problems. For instance, the structures were insufficient in helping students develop the sophisticated thesis statements he aimed for. Keith, on the other hand, believed that students did not yet have sufficient literary experience to generate the kinds of sophisticated thinking valued in the discipline. He was more willing to accept statements that he believed original to his students and appropriate to their experience, although he indicated that he would intervene if students were “off base.” This may also have been a function of the relative responsibility they felt toward the official curriculum: Mark, who was a member of the provincial writing team, felt an “obligation” though it is a guideline, not a prescription; Keith admitted that he (and his department) did not attend carefully to the curriculum. It may also have been a function of orientation and emphasis. Perhaps Mark is more text-oriented and Keith more reader-oriented. Keith’s primary focus was on the learning program underlying the conventional genre-based units listed on his course outlines.

Although all spoke with great relief about discarding lecture notes, then, it appeared that, in part Question Structure appealed, not to their discovery of another way to teach the discipline, but to their already solid discipline knowledge as experienced teachers and their new knowledge of students’ learning.
8.8 In conclusion ....

(Not because it’s effective style, but because Bob has waited years for me to write this.)

8.8.1 Change in practice as a totality

Did teachers’ overall orientation change? For example, was instruction traditional or reform-oriented (constructivist)?

If I might refer once again to Bingham’s (2008) discussion of Kafka’s story, “The Law”80: I yet stand in the “entranceway,” “the venue where one learns” (p. 53).

Of course, I didn’t expect to find the answer (as in Solution), only answers (as in replies); not the truth, but truths. But as I ponder lingering questions, I realize they are inappropriately framed as yes-no questions, as if (as in the old joke) they referred to pregnancy: either you are, or aren’t.

The two lingering questions about putting intentional focus on learners and developing new pedagogic practices were draw from the Ministry’s Student Success initiative (Ungerleider, 2008), with which I was working when I first encountered Question Structure. But what, really, were these questions

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80 Bingham uses Derrida’s interpretation of the story as a metaphor for the relation of reader and text.
about? In part, they pointed to a shift from traditionally oriented to reform-oriented theories of learning and instruction—that is, to constructivist theories of learning. As such, they embedded questions of stance: of teachers’ relation to knowledge and to students, of teachers’ and students’ roles, of teachers’ philosophy, of what Question Structure meant to their practice. In part, they pointed to ways of thinking about the relationship between teachers’ professional learning and practice. Ultimately (as Bingam argued), both questions of orientation and professional learning boil down to rethinking issues of authority.

As the discussion of program design and AFL illustrated, teachers were working with constructivist theories of learning. In various ways, they adopted the role of guide. Authority derived from their years of experience, rather than their role as teacher; to a willingness to learn, rather than to inherited ability. To a certain degree, then, they positioned themselves in a somewhat similar relation to knowledge as students. Even Gayle, who described her teaching as teacher-directed, invited students actively to question questions, rather than passively respond, and to drive discussion with their own inquiries. For secondary teachers, structures were the accessible and universal tools that enabled students to engage with literature, build comprehension, pose questions, and generate knowledge.

Again, the key seemed to be that while some structures (for example, Expository Writing) were used in technical ways serve traditional goals (for example, respond on-demand to constructed response), others were used to help students socially construct understanding. As O’Brien et al. (1995) observed, relinquishing control of learning to students “is antithetical to the traditional culture of teacher control prevalent in secondary schools” (and maintained in part through disciplinary divisions) (p. 446). I believe teachers in this study were caught between these two cultural extremes. Still, their practice was principled, driven by beliefs about how
students learn. They were trying to think like learners, and gather information about students’
learning so they could support it. They worked in the entranceway, on the threshold, knowing
there was nothing written in stone beyond the door. The change in practice was consonant with
thinking that assessment reform requires fundamental and far-reaching changes to teachers’
practice (Broadfoot & Black, 2004; Tierney, 2006). Just as I re-evaluated the importance of the
theory about learning and zoom strips in Question Structure, I have also had to re-evaluate the
importance of C-IQ: it may have been the combination of structures and strategies and of a
commitment to use these to help students socially construct understanding that was most
powerful.

Overall, Question Structure seemed to have provided the “something missing” (Dawn). It
was not the answer—“the magic bullet,” as Hardt commented (workshop, 2011)—but it did
provide some answers to pedagogic problems: Why are some students not able to do something?
(Gayle) How do you move learners from where they are to where they need to be? (Dawn) What
does it mean to facilitate learning? (Keith) How do you know when and how to intervene?
(Mark) I remember a dear friend telling me of her daughter’s first flight on an airplane and her
amazement at clouds. “Now,” my friend said, “you’ll never look at clouds the same way again.”
No matter how imperfect, uneven, incomplete, provisional their efforts, the teachers looked at
teaching and learning differently.

Most interesting was the paradoxical sense of liberation and fluidity that working with
structures provided teachers. Writing about the value of structural analysis, Gibson (1984) wrote:

It is now possible to see more clearly why the notion of structure should not be
understood as simply constraining. The unfortunate inflexibility about the term … belies
the fluidity, provisionality, and resourcefulness that are intended in the use of the term
structural analysis. Structures are to be thought of as complex rule and relational systems which influence, shape and constrain human thought and action, but which simultaneously are the means by which human competence is exercised, by which individual initiative is fostered and facilitated (p. 140).

The teachers’ relief and surprise were palpable in their awkward laughter when they described throwing away teaching and lecture notes. Teachers also described themselves as more purposeful. They seem to have a renewed sense of efficacy, which was in turn connected to a new sense of honesty. Mark indicated that although he had taught blindly in the cognitive landscape, he could now survey the territory. Dawn spoke of being discovered as a “fraud,” elaborating playfully in an imaginary script describing her removal from her classroom. Keith, who admitted that he himself “wandered” through the subject, told the story of his colleague, who admitted that for twenty years he had been “faking” assessment. Question Structure seemed to have provided a framework that could be operationalized in practical and concrete ways.

**Recommendations for research.** This study built upon preliminary, unpublished studies by examining how teachers with three or six years’ experience were using Question Structure. This case study was limited to four teachers of (primarily) one subject in one semester. This study raised additional questions. See, for example, Table 8.1, next page.

Teachers, of course, have already taught beyond the study’s findings. They are still teaching in their classrooms, constructing replies to my question of how they use Question Structure. As far as I could tell, even as I finished data collection, they were continuing with “self-sustaining, generative change” (Franke et al., 1998). As much as I thought I might identify a future course, like Tristram Shandy, I will never “catch up” to their practice. They are not in
the business of *reforming* teaching; they are *immersed in* teaching, which is, for them, an ongoing (re)thinking and (re)shaping.

Table 8.1 Possible research foci

<table>
<thead>
<tr>
<th>Focus</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expository Structure</strong></td>
<td>• How is the <em>Question Structure</em> approach to writing similar to or different from process writing approaches? What are the conditions of use? How do they compare in effectiveness?</td>
</tr>
<tr>
<td><strong>Standards of practice</strong></td>
<td>• What are <em>Question Structure</em> teachers’ criteria for claiming that their practice is “better”? Does their practice in fact exemplify these criteria? What standards of practice might also be brought to bear?</td>
</tr>
<tr>
<td><strong>Use in elementary &amp; secondary contexts</strong></td>
<td>• Is there a significant difference between how elementary and secondary teachers use <em>Question Structure</em>? If so, what are the implications?</td>
</tr>
<tr>
<td><strong>Use in specific programs</strong></td>
<td>• How is <em>Question Structure</em> used in specific programs, for example Workplace, Locally Developed Compulsory Credit (LDCC) courses, or open-level courses, such as Civics?</td>
</tr>
<tr>
<td><strong>Use in specific disciplines</strong></td>
<td>• How is <em>Question Structure</em> used in other subjects, such as Math and Science?</td>
</tr>
<tr>
<td><strong>Effect on student outcomes</strong></td>
<td>• What is the effect of <em>Question Structure</em> (in the hands of an experienced <em>Question Structure</em> teacher) on student achievement? Does the effect differ across grades, subjects, programs, or groups of students?</td>
</tr>
</tbody>
</table>

### 8.8.2 Implications for professional learning

As indicated in Chapter 1, characteristics of *Question Structure* make it difficult to scale up. It’s probably not a viable option for system implementation. However, *Question Structure* was a remarkable professional opportunity, a rich impetus to ongoing professional learning, for these teachers. As Jennifer commented, it just keeps “unravelling” and can be connected to significant aspects of practice, such as AFL.

I think that these cases suggest some considerations for in-service that run counter to conventional wisdom:

- Frameworks that can be operationalized are important
• In-service focused on theories of learning are far-reaching
• The Mosenthal Taxonomy and structures provide an (atypical) route to AFL
• Structures are paradoxically both closed and stable, open and fluid; the procedural can be balanced by the heuristic; the technical can invigorate the practical
• Universal structures differ from generic strategies; they can provide a platform and framework for the implementation of instructional strategies.

As Keith commented, the “beauty and the sadness” of Question Structure was that school and system administrators had little understanding of what teachers were doing with it. On the one hand, this gave the teachers considerable autonomy and freedom to experiment. On the other, teachers couldn’t count on the professional recognition that brings practical and moral support. One of the most lively parts of focus group discussion focused on contradictory system messaging, and specifically on how the ostensible message that teacher reflection and experimentation were valued was undercut by the emphasis on “flash,” for example of technology. It seemed to me that while teachers were themselves negotiating two paradigms of professional learning (described earlier as the technical and practical, traditional and reform-oriented), yet they were caught between these systemically, likely because the implications and logistics of the latter were not yet understood nor supported. Liminality (Nelson & Harper, 2006) not only requires time and a critical community, but also tolerance of non-efficient and messy learning—what Lave (1996) described as teleos (“a direction of movement or change of learning”) as distinguished from goal-directed activity (p. 156). (This was another irony, as Question Structure emphasizes goal-directed, strategic action.)

I was aware that in examining cases from three school boards, teachers’ implementation contexts differed. This raises the question of the extent to which these contexts affected findings.
Might Gayle have experimented with less procedural structures in a different context? Might Keith have made stronger theoretical connections to curriculum and other initiatives?

I also think of the work of Hardt (whom Dawn described as “absolutely the right person” to work with them); of descriptions of similar work in the literature, for example, Richardson (1992), Lester and Onore (1989), Franke et al. (1998), and Cochran-Smith and Lytle (2009); and of my own experience in staff development. Much of the literature on professional learning focuses on training, not on facilitating inquiry, particularly that which examines frameworks, like Habermas’s human interests. Lester and Onore commented that their work with teachers could not be replicated (just as we have learned that teachers don’t just replicate theoretical models). I often felt, when I observed Hardt interacting with teachers—and when I thought about my own teaching—, that that was the only moment for that encounter. The central conversation of teaching is elusive and particular and interpretive. As in Kafka’s story, learning occurs in the doorway, on the threshold, and it is unique for each individual. In this case, Question Structure was the threshold that kept going and going. How can we prepare instructional leaders to facilitate this learning and reflection?

**Implications for research.** That said, as I indicated at the opening of the chapter, my hope was that the images of practice presented here would be useful to teachers, system leaders, and researchers. We had no images of practice from teachers who had been using Question Structure for three or more years. It seemed that at least three years are necessary to see how the step following balances the heuristic use of structures in teachers’ practice. Further, it appeared that a number of factors influence use, including implementation contexts. These observations suggested addition possibilities for research. (See Table 8.3.)
### 8.8.3 Voices and visions

To the best of their ability, these teachers have taken—informally—what seems to be Carr and Kemmis’s “project perspective” (p. 40): actively learning, experimenting in their classrooms, reflecting critically on their practice, and engaging in dialogue with at least one professional partner. Despite the strong connection of *Question Structure* to the technical, *Question Structure* in-service stood in opposition to the “new practicality” of the industry that generated student texts and teacher scripts (Carr & Kemmis, 1986, p. 16). Rather, the implementation of *Question Structure*, demanded “consultative and participatory structures for the development of curriculum” (p. 20). Perhaps *Question Structure* is effective for these teachers *because* the in-service did *not* provide subject-specific materials. Teachers were compelled to take responsibility for developing these. As Mark observed, doing so required “a lot of thinking.” Although individual implementation contexts differed, teachers stressed that this professional conversation was essential to feeding their thinking, prompting reflection, sharing their approaches, and building shared understanding and accepted standards of practice.

It did seem, however, that formalizing this process somewhat, for example as action research, might help teachers problematize their practice and use of *Question Structure*, and open their professional conversations to debate.
**Habermasian human interests**

There are three reasons that I suggest this. First, teachers seemed to sit on the brink of the strategic. It was clear that *Question Structure* is strongly tied to the technical view, which Carr and Kemmis (1986) described as follows:

Among teachers, a technical view of education is altogether more prevalent in our society, which is so thoroughly a technological one. A technical view of teaching and curriculum treats educational provision as a set of means to given ends. It is assumed there are alternative means available to given ends, and that the role of research is to evaluate their effectiveness and efficiency. Teachers’ knowledge is assumed to be about the means available and their relative effectiveness under different circumstances. (p. 35)

However, the authors observed that the technical co-exists with the practical:

Considered from [the practical] perspective, education is essentially a process or an activity. It takes place in social situations of great complexity, calling for many decisions from those involved if it is to be regulated at all. While the technical view of education sees teaching and learning behaviours as elements in a system which can, in principle at least, be controlled as means to given ends, the practical view asserts that the social world is simply too fluid and open. Such control as is possible in the social process of education will only enter through the wise decision-making of practitioners—through their deliberation on practice. (p. 36)

Carr and Kemmis referred to this relationship as *strategic*. According to Carr and Kemmis, the “strategic” practitioner undertakes “*systematic examination*”: “To the extent that is possible to do so, he or she *plans thoughtfully, acts deliberately, observes the consequences of action*
systematically, and reflects critically on the situational constraints and practical potential of the strategic action being considered.” (p. 40, italics in original)

Were system leaders to support *Question Structure* in-service (for example as the focus of action research) and teachers as teacher-researchers (as opposed to *Question Structure* as a systemic implementation), districts might provide *one possible focus* for rich professional inquiry. Doing so might have benefits for teachers.

First, teachers might be encouraged to articulate their work in ways amenable to sharing professional knowledge beyond their immediate communities, for example in professional journals.

Second, such an approach—particularly if set up with access to outside experts who could provide additional “food for thought”—would increase and accelerate teachers’ own learning. Along these lines, all teachers in this study indicated that the study helped them think about and realize things about their practice that they had not previously considered or recognized.

Third, such an approach might introduce a critical lens and debate—something missing in these teachers’ experience. Certainly these teachers have sufficient confidence and solid understanding of *Question Structure* to engage in such discussion.

Fourth, such a structure would provide an opportunity to introduce teachers to other, critical voices and perspectives—without fearing that support for learning about *Question Structure* might be withdrawn.

While teachers’ reflection appeared to exemplify the first two hierarchical levels of Handal’s (1990, in Day, 1993) concept of reflective practice (planning at the level of action and providing practical and theoretical reasons), I was not wholly convinced that ethical justification
(level 3) included political dimensions. It is not that the teachers were uncritical, but the one thing that seems to be missing is an acknowledgement of the ideology implicit in the approach and the limitations of its rational, cognitive focus. As van Veen and Sleegers (2006) commented, any “innovation can be considered an expression of people’s values beliefs, political opinions, and morals—embedded within a particular power context” (p. 90). Not all learning is rational. I was uncomfortable with the assumption that learning (the implication of The Periodic Table of Learning is all learning) can be equated with a taxonomy of information processing, however useful it is. (And in the current system, it is useful.) This seemed to be Alexander, Murphy, and Woods’ (1996) argument: educators need to understand the psychological and philosophical roots (history) of innovations (iterative trends) claiming to mediate between a continually evolving world (incremental trends) and knowledge of how people learning (stationary trends).

As Carr and Kemmis (1986) pointed out, the critical perspective acknowledges that teachers’ aims “may be distorted by ideological forces and constraints and their realization may be impeded by institutional structures” (Carr & Kemmis, 1986, p. 31). A critical perspective provides theory for systematically analyzing “distorted” practices and suggesting the actions that may be taken. While the principles behind teachers’ use of Question Structure were moral and political—there was a strong sense of equality of opportunity, inclusiveness, and commitment to supporting learners who struggle, for example—students were nevertheless prepared to succeed in the current system. Perhaps we could push this further?

My primary goal was to provide examples of how teachers conceptualized the use of Question Structure in practice. It is my hope that these visions and voices and possibilities can serve to connect Question Structure to scholarly conversation and debate—including critical
discussion. Perhaps Question Structure teachers could engage in debate instead of being dismissed, and hang onto something that appeared to be of value.
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APPENDIX A: Michael D. Hardt on Question Structure

Brief excerpts from an extensive interview with Hardt (2010) have been included where appropriate in (blue) sidebars throughout this study. Other topics included

- *Question Structure’s* validated constructs and information processing; potential for profiling and computer-adaptive testing
- development of conceptual metaphors, such as the cognitive carpet and pixelization; the desire to unify multiple theories into a coherent system
- the development and importance of the *Mosenthal Taxonomy*
- debates/conversations about critical thinking, creativity, and the value of ‘open’ questions
- Hardt’s belief that ‘science’ can improve instruction; and *Performance by Design’s* work in school boards.

The excerpts below are intended to provided small windows into Hardt’s thinking and *Question Structure*. Like the sidebars, they are most aptly described as ‘found poems.’ I deleted the tangential, allusive, repetitive, and obscure from the transcript. This “‘diamond-cutting’ activity” (Poindexter, 2002, p. 709, in Prendergast, 2009, p. xxvii) was difficult: Hardt’s was an insider’s account that assumed (some) shared history and knowledge; I was never quite sure that I overcame that. Aware of Gee’s (1991) stanza approach (in Ölen, 2003, p. 559 and Riessman, 1993), I broke the text into small units (determined by content rather than by number of lines). Then I literally cut a hard copy apart and rearranged pieces—clustering, juxtaposing, associating, ordering, echoing. I tightened, cleaning up pronoun references, shifts in verb tense, and various kinds of grammatical disagreement.

**Note:** Pete is Peter B. Mosenthal, and Irwin is Irwin S. Kirsch. The metric is the *Mosenthal Taxonomy.*
**Question Structure and computer-adaptive testing**

Pete’s computer-adaptive article was an influence because it validated the constructs. That was the tipping point for me.

I was already thinking: computer-adaptive testing, that’s the way to go. Pete and Irwin had proposed the profile approach. Computer-adaptive testing was the automation of that approach.

**Conceptual metaphor: the cognitive carpet and pixelization**

Pixelization is something that I developed way back.

The original concept was Bach-y-Rita’s ‘We don’t see with our eyes.’

We make the **totally** false assumption that we see because we have eyes. But our brain encodes images and then creates pictures. It doesn’t *see* anything. It’s blind.

Bach-y-Rita said, ‘Well, I’m going to have people see with their tongues.’

They had those big old tube screens and a big old honking camera in the lab. And a visual image would go in on those electrodes and stimulate your tongue and train it to see black and white images. And so maybe there were—I’m making this up—32 pixels.

Then their research was: Can we get more pixels to get a finer picture?

My God! You really do have a cognitive carpet. As you pixelate, the greater cortical density explains automaticity.

The idea is: it’s not pixelating teachers’ cognitive carpet, it’s always de-pixelating.

That’s the biggest thing. And it’s **so** hard for *anybody* to de-pixelate. It’s the rare person who can see the world through the learner’s eyes. It’s getting it back down to where the learner’s at.

**Information-processing**

Pete had had me read Samuels and Laberge, who did an information processing model for reading. I was trying to take what I was learning about psychometrics from Pete and apply it to information processing.

But the more I looked at information processing, the more the stuff fell apart. Bloom’s fell apart. That was that whole kind of turning point.

Everybody looked at information processing as a single entity, but there were two dimensions to scale psychometrically.
There was information, and there was this huge void called processing. And so as soon as you held information in check, you could start to account for some of the performance variable.

And then you could start looking at the directives, and see things like *explain*—that was everywhere—*explain* *explain* *explain* *explain* *explain*. And explain *how* was easier than explain *why*.

There weren’t as many *justifies* or *persuades*. People would talk specifically about *persuade*, but they wouldn’t put it in a hierarchy. People would talk about directives but there was just awareness stuff.

And that, for me, working with Pete, that was a watershed moment. It was like, Dang! Because I looked at something I’d seen a thousand times, and it was brand new. I had this lens to look at it.

**Developing the taxonomy**

We didn’t start off trying to develop the taxonomy. We were just doing question difficulty. That’s all we worked, constructs and sub-constructs.

The framework we were using was so universal that it would expand any way we wanted to go. It had to be able to expand up developmentally, it had to expand out content-wise.

The data told us it was an implication hierarchy. The assumption going in was there’s got to be an implication hierarchy because it’s a single domain.

**Developing a unified theory**

I’ve tried to unify Bloom, and some of the big players that have come along. In science, you have to have a theory of everything, a unified theory, and that’s the idea of this.

When Pete did the work with Irwin and Jungeblut, they were looking for a universal definition of literacy that always worked, beyond languages and contexts. They had to start with prose-doc.-quan.\(^1\), but the variables hold up,

so now we’re coming behind everything and saying, ‘Look, it works.’

**Improving teaching with science**

Allington says, ‘Let teachers teach.’

Sure, I’ll let the tip of a distribution teach: They’re doing phenomenal things. But what about the other two-thirds? How do you improve instruction?

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\(^1\) The three domains for the *IALS*: prose, document, and quantitative literacy.
Give them the best science foundation for instruction and assessment, so they can build the very best practices that they can.

It works well with people who like that challenge. If you don’t like that challenge, it’s a little slice of hell.

**The need for a metric in data-driven education**

Everybody is trying to bring data to bear, but you don’t have a universal metric to prove anything.

Data-driven curriculum, data-driven instruction, and data-driven management look really good *conceptually*, but they’re pretty nasty, up close and personal. We don’t like to look in a mirror.

I think that the metric forces you to look at yourself and say, ‘I’m not doing it right.’ Keith and Jennifer are probably two of the best examples. When they first saw Question Structure, they did not like it. And those are the folks who become the most successful.

As soon as you put up a defined metric, and instruction is poor, it comes in at a 1 on a rubric of 5. And you can see: the teacher’s instruction has poorly defined Parts, Functions and Connections. There’s no scaffold with the information. There’s no instructional design behind it, no Agenda Structure.

I go into hundreds and hundreds of classrooms, and teaching performance is a distribution. And people can’t get over it.

**Measuring teacher performance**

Imagine you start looking at teacher performance—all the rage, merit-based pay. And you decide you can’t do it because tests really don’t measure teacher performance.

That’s only because you don’t have a universal, consistent metric. Once you start looking at the Question Structure constructs, they become a universal metric. And so you can really scale up, maybe do value-added assessment.

If I’ve got three students, who come from three different teachers, and if I know where the Dials of Difficulty were turned on those constructs on the assessment instrument, I can aggregate that and say, ‘Going from Mrs. Smith to Mrs. Brown, there’s a value added of seven. But going from Mrs. Smith to Mr. Grey, they’re down three clicks.’

**Performance by Design’s experience in school districts**

You know I have some great deliverables and pieces. We took a district mid-50s in performance, across multiple grade levels, 3, 4, 5, and 6 to consistently putting them in the 90s. *Sustainable.*
And that was eight years ago. But it’s decaying. They don’t Snap questions all the time now. They don’t use T-charts and they don’t parse. They’re capturing small moments with a writing program. So their 90s have turned into upper 80s, their upper 80s turn into 80s.

It was great instruction. It was unified from kindergarten, all the way through.

We’ve done state tests in some of the smaller districts. We started in a year when the constructs in the test were turned way down. The next year, the constructs in the test were turned up, so the results went down.

And they dumped us immediately, even though we showed them that the great gain was in growth, relative to what they had accomplished the year before.

The superintendent of the board said, ‘I’m not paying for that.’

Using open questions in instruction

If you take the tip of the distribution (the top one-third of teachers), open questions—what we call indeterminate—are right on.

I was in a classroom last week watching the use of open questions. It was gorgeous.

But I’ve also been in several classrooms in the last couple of months but the teachers weren’t in the tip of the distribution. They just saw open questions as a quick strategy, a quick trick. They’d say, ‘Okay, I’m going to leave this question wide open.’

Well, that doesn’t do anything. It’s what do you do with the responses you get. If I use an indeterminate intentionally, it’s really powerful. I mean, my radar’s on, and I want to see where all those responses are. It’s a scatterplot for me.

But if I don’t know that I’m asking an indeterminate question or what an indeterminate is, then her response and her response and her response, they’re just responses.

And two-thirds of the distribution, those teachers are just asking an open question because they went to training and saw it.

Use an indeterminate when you know what you’re doing, and you’re going to open up student’s thinking.

The Taxonomy and critical thinking

Everybody loves the stuff on posing questions to elicit critical thinking.

I don’t agree with the idea that things like critical thinking just come to be, things just are.

And so you can’t scale critical thinking. Critical thinking can be anything to anyone anywhere.

G’s idea is: ‘Don’t try to box me in. Everything is everything. And it’s all connected, baby.’
It goes to his background, history. An interpretation is completely constructed, right? As we move forward we can endlessly and infinitely construct meaning as a constructivist relative to everything that’s at our disposal as opposed to there are these lines, hierarchies, that we can use to follow-up or measure.

He says: ‘Let teachers teach.’ Learning-Happens-in-the-Moment. There are teachable moments that effervesce as we explore and investigate.

When you look at the Taxonomy, he says:

‘Where’s the word explore? Where’s the word investigate? Oh, my gosh! This is the nail in the coffin for the Periodic Table! do not see anywhere in there the word create! Where is creativity?

He thinks that’s what a taxonomy does: It crushes creativity. ‘It’s not on your Periodic Table.’

So, fine. You’re saying that you can just be creative. That was just a philosophical pppftt.

Using indeterminate directives

You know, explore what? Just explore. What is your operational definition of explore? Do we go out and just explore?

It’s the idea: N — and I can both walk into the high school this afternoon. As soon as I’m walking to the door, my head’s on a swivel, I’m looking, thinking what am I seeing, and as we’re walking in among the students, I’m looking to see is there a pattern in what they’re wearing? Coloured shoestrings, that’s really popular here. Shorts. Looking at the backpack, looking at how students are grouped in the hall, I’m looking down the hallway, I’m seeing three doorways: why are they clustering around one? There’s only one teacher out, passing them in the hall. I mean, I’m just going do-do-do-do-do.

But N — walks in, and she’s like, ‘Oh, I wonder if I have cell phone reception here?’

So the idea is: We ‘go explore the school.’ She might find the boiler, the gym.

But the idea is: at what level was explore going to happen? It becomes an indeterminate, because I may be looking for cause-effect change, I may be looking for patterns, Zone 6 Type of Information, and she might just come along and just do a Zone 1 list of things that she’s found, like water fountain.

The idea is: we both explored. It’s the same as analyze and interpret. It scales informationally but at level of processing, it’s about the depth and kind of connections you’re making.

The difficulty of Question Structure

I’ve had people come up and laugh, you know, ‘Ha, ha, we finally got rid of you in our district.’
‘Why?’

‘’Cause you make things too complex. Teaching is very simple.’

The simple, macro reason for the success or failure of this in a school district, is its difficulty. There’s no silver bullet.

The thing is people come along and they want to pay minimum money, and put in minimum effort, and get maximum results.

Those boards put in maximum money, trained their entire staff, had a learning specialist in their classroom a minimum of once every two weeks for a minimum of one semester—where they did do it, oh yea!

But people come in and they just want to do the structure of questions. They want to get that quick pop on a standardized test—and you will the first year. But there’s no follow through. If you’re only doing it for test prep, there’s no long-lasting meaning to the learning.

The writing’s the same way. You do a quick and dirty, a constructed response or short essay. But it just turns into: here’s how you write the test genre—as opposed to: Here’s how you really think to create better writing.

**The role of tests in education**

I think in the States the great thing that happened was No Child Left Behind, because it really kicks a lot of the crud out of the system. I mean, you have to take tests, right?

Now those tests have to be anchored in something. Adequate Yearly Progress: What are you measuring it with? It forced states to really look at what they were using as their state instruments.

Texas’s scores are going way up, the NAEP scores are holding or going down. Now you’ve got to justify that. ‘Oh, we’ve got to tweak up our tests. We’ll have to tweak up our instruction to it.’

So it gave some accountability to the system and it gave some points of reference to interpret it.

**Using the Taxonomy to assesses whether innovations are making a difference**

If something new fits with what teachers are already doing, it’ll sell.

I mean, you go to a conference and you tell them what you want to see. We need critical thinking, right? And so what happens? Lo and behold! In the next student resource, there’s a little bullet about addressing critical thinking.
There’s no developmental appropriateness, there’s no hardcore research or data that shows that’s the way you should be spiraling that, or working it. But that’s what teachers want, that’s what sells.

I think the same thing happens instructionally. You keep telling me what you want, I’m going to deliver it to you, ‘cause that’s how I make money.

But if you have a universal metric, it’s going to be harder for people to sell things from the business side.

**Recognizing the value of Question Structure**

Pete used to say, “It takes genius to see genius.”

The kick in the pants is: people get gun-shy. People have been sold so much snake oil in education. There have been some real humdingers.

Do I think some people see *my* stuff as snake oil?

I think just the opposite.

... Maybe. ...

... I don’t know. I’ve always thought of it in reverse. ...

... *Do* people?

... Yea, I would think so, because you haven’t seen it, you haven’t played with it.

And so *Question Structure* comes along. You know, ‘Here it is!’

‘Yea, yea, whatever.’

You know what I mean?

If you gave me a new philosophical paradigm that would give me greater clarity and help me be a better educator, assessor, and deliverer, I’ll be first in line.

If it would give me an increase in student performance, I would do it in a heartbeat.
# Learning Structure Scope & Sequence

## APPENDIX B: Scope and Sequence

### APPENDIX B: Scope and Sequence (reprinted with permission)

### Learning Structure Scope & Sequence

#### Level
- **Sort/Select**
- **Simple**
- **Combined**
- **Nested**
- **Intersected**
- **Ultimate**

#### Building Blocks
- Parts
- Functions
- Connections

#### List
- **Sort/Select**
- **Simple**
- **Combined**
- **Nested**
- **Intersected**
- **Ultimate**

#### Read
- **Snap**
  - Zone 1
  - Zone 2
  - Zone 3
  - Zone 4
  - Zone 5
  - Zone 6

#### Task Awareness
- **Task Awareness**
  - Locate (Right Time, Right Place)
  - Cycle (Right Time, Right Place, Right Purpose)
  - Integrate (Right Time, Right Place, Right Purpose, Right Value)
  - Generate (Right Time, Right Place, Right Purpose, Right Value, Right Style)

#### Question
- **Match**
  - Identify
  - Sort
  - Define/Describe
  - Narrate
  - Summarize
  - Compare/Contrast
  - Explain
  - Justify
  - Persuade

#### Narrative/Expository
- **Narrative/Expository**
  - CAS
  - PASS
  - GASS
  - Full (Smart Chart™)
  - Full+ (Super Smart Chart™)
  - Universal (Supreme Smart Chart™)

#### Expository
- **Expository**
  - Single Req. from Single Source
  - Multi Req. from Single Source
  - Single Req. from Multiple Sources
  - Multi Req. from Multiple Sources

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*APPENDIX B: Scope and Sequence (reprinted with permission)*
APPENDIX C: The Mosenthal Taxonomy

(reprinted with permission)
APPENDIX D: The workplace literacy-*Question Structure* connection

D.1 What is the purpose of this account?

Workplace literacy in Canada has been receptive to Kirsch and Mosenthal’s work on document structures and strategies and to *Question Structure*. The brief account below, constructed from interviews and (mostly unpublished) reports\(^{82}\), is intended in part to describe how this *Question Structure*-workplace literacy connection came about. The significant differences between workplace literacy and public education raised questions about how teachers were using *Question Structure* in classrooms with adolescents.

D.2 Workplace literacy

Workplace literacy is pragmatic and utilitarian: instructors provide “just-in-time” (Fownes, personal communication, Nov. 2011) assistance to tradespeople that addresses specific, immediate learning needs. Fownes notes that while these individuals may possess considerable job-related knowledge and skills (and often high school diplomas), they lack literacy skills for a particular job. However, because these individuals often have not been well served by public education, they are unlikely to attend adult literacy programs. Much of this instruction, then, focuses on literacy skills, for example working with specialized documents, which are prominent in workplace occupations. This situation meant that each instructional situation and document was approached as unique.

This approach meant that transferability (necessary, for example, for job mobility) was reduced. This was exacerbated by the lack of assessments to identify the considerable job-related knowledge and skills employees did have.

\(^{82}\) This account is based on interviews with Lynda Fownes (former director of SkillPlan), Debra Mair (a researcher currently at Statistics Canada who was key in the Human Resources and Skills Development Canada (HRDC) Essential Skills Research Project (ESRP), Scott Jones (who conducted research for HRDC and for ETS); and on an unpublished report by Carol MacLeod (2007) that traced the development of the Essential Skills in Canada and reviews by Jones (Jones, 1993a, 1993b; Jones & Déry, 1994).
D.3 The Essential Skills Research Project (ESRP)

The Canadian federal government wanted to encourage the private sector to invest in quality workplace education (MacLeod, 2007; Mair, personal communication, Sept. 2011) that would also address issues such as job-entry, job mobility within and across occupations, and recognition of foundational (as opposed to technical) skills.

It was believed that the usefulness of the National Occupation Classification (NOC)—a standardized framework that organizes information about the Canadian labour market, released in 1992—would be enhanced if descriptions of generic skills common to all occupations linked to the NOC occupations (Mair, personal communication, Sept. 2011). It was reasoned that contextualized descriptions of generic skills could be formally linked to industry standards and stimulate private sector investment in quality workplace training (Jones, personal communication July 6, 2011; MacLeod, 2007; Mair, Personal communication, Sept. 2011). Training in these skills would include training for entry-level jobs and training that facilitated workplace mobility and adaptability. As MacLeod (2007) noted, this move was significant in that it shifted the focus from the uniqueness of particular occupations to the commonality of necessary, or ‘essential,’ skills.

Human Resources Development Canada (HRDC) initiated research on generic skills. Jones (Jones, 1993a, 1993b; Jones & Déry, 1994) reviewed research on Generic Skills sponsored by the Canadian government in the 1970’s (MacLeod, 2007). Jones recommended which skills should be included, which measurement scales might serve as models, and how information could be collected. The Essential Skills Research Project (ESRP) identified what these skills (eventually called the Essential Skills) looked like in particular occupations (Jones, 1993b). The
Essential Skills were generic, learnable, transferable, measurable, and enabling of other activities and of the learning of new skills (Jones, 1993b; MacLeod, 2007).83

**D.4 Large-scale Literacy Studies**

Large-scale literacy studies provided a contextual backdrop for these developments. According to Jones (personal communication, July. 2011), Doug Giddings, then head of Applied Research at HRSDC, and others realized that anything developed for the Essential Skills should be sensitive to the International Adult Literacy Survey (IALS). After Document Literacy and Reading Prose had been identified as Essential Skills, the IALS’ document and prose literacy scales were adapted84 to provide Essential Skills scales. These provided the model for the development of scales for the other Essential Skills.

The idea for Test of Workplace Essential Skills (TOWES) arose out of a meeting the ESRP Advisory. Fownes (personal communication, Nov. 2011), who was on the Advisory, said that when she saw (the as yet unpublished) IALS results, scales and task descriptions, she was astounded by the scales, which provided, not just numerical scores, but descriptions of tasks incorporating those skills at various levels of complexity. Fownes proposed that a similar assessment be developed specifically for the workplace context. Fownes believed that such a test could recognize workers’ knowledge and skills, facilitate job entry and mobility, and identify learning needs and guide training. She said:

You learn things after you leave school. How do you capture that? Why should a person be discriminated against when they have the skills to do a job? There’s no way to screen people in, and that was my motivation for TOWES.…

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83 These generic skills were distinct from traditional notions of reading, writing and arithmetic, from foundational skills taught in elementary schooling, and from technical skills (Jones, 1993a).

84 According to Jones (2011) the scales were adapted because the IALS assessed populations and sub-populations, not individuals.
TOWES items, then, were modeled on IALS items, which were constructed based on Mosenthal and Kirsch’s theoretical framework. The National Literacy Secretariat (NLS) provided funding, and Jones, who had worked with Kirsch on IALS item development, mentored TOWES item writers, helping align tasks to the IALS scales. Also, in an “incredibly generous” move, ETS permitted a “linking” study (Fownes, personal communication Nov. 2011) between TOWES and IALS. For this study, TOWES items were calibrated with IALS items using Item Response Theory (IRT).

D.5 Question Structure

TOWES: A more direct connection to Question Structure was forged when Mosenthal was invited to provide a workshop on item writing to TOWES writers. This came about because Julian Evetts had ‘discovered’ Kirsch and Mosenthal’s articles on document structure and strategies and forwarded to Mosenthal his Document Use (1996), which was based on Kirsch and Mosenthal’s work (Fownes, personal communication, Nov. 2011).

Currently, Performance by Design is one partner involved with Bow Valley in TOWES Prime. Prime includes three assessments (diagnostic, accountability, and high stakes) based on the IALS scales. It also includes the “first instructional system” (“Scaffold”) to apply the Kirsch-Mosenthal framework. (See http://www.towes.com/en/towes-prime/towes-prime.)

Essential Skills Resources: Fownes’ meeting with Mosenthal at the TOWES workshop led to a consultative working relationship with Mosenthal, and, after his death, with Mike Hardt. Fownes, who said she aimed to “move theory into practice,” incorporated Question Structure into SkillPlan’s Essential Skills resources.

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85 Evetts, who was a TOWES item writer, was on SkillPlan’s Essential Skills data collection team and was eventually awarded the contract to provide quality control on Essential Skills research (MacLeod, 2007).
Fownes (personal communication Nov. 2011) commented that “doing the research on the Essential Skills was the single biggest influence on everything SkillPlan has done since, in that we became experts on what jobs look like from an insider’s point of view.” (personal communication, Nov. 2011) She believed that knowledge of document structure and information processing strategies enables workplace educators and resources to move away from teaching documents as “one-offs.” She argued that “the payoff” from investment in workplace education would be small as long as people taught to content rather than to the skills required by jobs and tests\textsuperscript{86}.

Thus, \textit{Question Structure} addressed two workplace literacy needs identified by Fownes:

- the development of assessment tools that identify training needs and foundational skills that individuals can transfer to other jobs, and
- the development of Essential Skills resources in which generic skills are contextualized but no longer approached as unique.

\textbf{D.6 Links to public education}

The ERSP also sought to bridge federal and provincial/territorial jurisdictional responsibilities and increase uptake of the Essential Skills in education reform (Jones, personal communication, July 6, 2011; MacLeod, 2007; Murray, personal communication, July 6, 2011). There were concerns, signaled for example by the Conference Board of Canada’s Employability Skills Profile (Mair, personal communication, Sept. 2011) and Canada’s practice of importing skilled industrial workers (Jones, personal communication, July 6, 2011), that youth transitioning from school to the workplace were inadequately prepared. It was believed that formal education

\textsuperscript{86} Essential Skills resources were also produced in other parts of Canada, for example \textit{Step into the world of workplace learning: A collection of authentic workplace materials} (Lewe & MacLeod, 2001).
contributed significantly to human capital, but literacy studies found that formal education was no guarantee of literacy proficiency.\footnote{Jones (2011) noted that these concerns, which industrialized European countries with centralized education systems and strong vocational high schools did not share, were a “phenomenon” of English-speaking industrialized countries.}

In 1998, HRDC set up a consultation process with Ministries of Education across Canada about the Essential Skills database project. As a consequence, an Essential Skills Product Development Committee (succeeded by the Technical Working Group on Essential Skills) was established to guide the development of the Essential Skills database and other resources. Each jurisdiction determined how it would use the Essential Skills. For example, British Columbia initiated the Applications of Work and Learning (AWAL) project and Ontario worked at facilitating school-work transitions using the Essential Skills database as the foundation of the Ontario Skills Passport (OSP). In Ontario, the Essential Skills are noted in the front matter of curriculum documents as a consideration when implementing curriculum. In addition, the Ontario Ministry (2009) has produced a document on making “linkages” between official curriculum and the Essential Skills (Ministry, 2009).

**D.7 Question raised with respect to this study**

In short, *Question Structure*, and the research from which it derived, has supported development of Essential Skills assessments (for example, *TOWES*) and resources (for example, SkillPLan resources). In particular, it has provided a framework for the development and scaling of contextualized tasks and assessment items, and descriptions of problem-solving approaches to occupation-specific tasks and documents. It is also being utilized in the development of computer-adaptive testing and instruction available nationally.
The question is: What do (should) teachers do with this in a classroom of adolescents?

How useful is knowledge of foundational and generic skills and processes in particular disciplines?
APPENDIX E: Agenda for a Major Research Project

Below is a simplified version of my student handout. This was adapted from Hardt’s Agenda/Narrative Structure and reconfigured for a portrait layout.

<table>
<thead>
<tr>
<th>Character (who)</th>
<th>Goal (what you want to get, i.e., what do you want to know)</th>
<th>Problem (what you don’t have)</th>
<th>Solution (what you did get—achieved Goal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The author-researcher: you</td>
<td>The Requested Information in your research question</td>
<td>The Requested Information in your research question</td>
<td>The Answer: your findings</td>
</tr>
<tr>
<td>Character Set-up (attributes, background)</td>
<td>Goal Set-up (why you want to get it)</td>
<td>Problem Set-up (why you don’t have it)</td>
<td>Solution Set-up (How you will get it)</td>
</tr>
<tr>
<td>• What the problem is</td>
<td>• Why this topic is important to the field and the scholarly community</td>
<td>• What isn’t understood</td>
<td>• How you will find the Answer</td>
</tr>
<tr>
<td>• Why this topic is important to you—that is, personal experiences and knowledge that motivated and shaped the research question</td>
<td>• What is known, its strengths and weaknesses</td>
<td>• Why the lack of knowledge exists</td>
<td></td>
</tr>
<tr>
<td>(This is also part of your Goal Set-up)</td>
<td>• How you build on current knowledge</td>
<td>• What happens if you don’t get the Answer to the question</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What happens if you do get the Answer</td>
<td>• Pervasiveness of the problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Whether the problem is persistent, recurring, or new</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F: Mark’s Zoom Strip

Mark distributed this Zoom Strip along with the GASS Agenda Structure as a way of having students identify goals and ways of achieving them. The Zoom Strip accounts for various goal ‘levels,’ from the particular to broad. By continually asking “why?” students push ‘up’ into values. By continually asking “how?” students push ‘down’ into concrete actions.

---

***ZOOM STRIP***

(This is a way to sort out your goal and your plan of action.)

<table>
<thead>
<tr>
<th></th>
<th>Why does that matter?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>GOAL</td>
</tr>
<tr>
<td>5</td>
<td>How will I do that?</td>
</tr>
<tr>
<td>6</td>
<td>How will I do that?</td>
</tr>
<tr>
<td>7</td>
<td>How will I do that?</td>
</tr>
</tbody>
</table>
APPENDIX G: Methodology time matrix

This ‘calendar’ helped keep the big picture in mind during data collection.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Timeline</th>
<th>Actions (read left to right and down)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul.-Oct. 2009</td>
<td>Identify potential participants</td>
<td>Seek school board permissions</td>
</tr>
<tr>
<td>Oct.-Nov. 2009</td>
<td>Invite teachers to participate</td>
<td></td>
</tr>
<tr>
<td>Dec. 2009-Jan. 2010</td>
<td>Pilot interviews #1 x 2 teachers</td>
<td>Information meetings x 4 teachers</td>
</tr>
<tr>
<td>Jan.-Feb. 2010</td>
<td>Revise case study interview protocol</td>
<td>Data collection #1 (observation, interview, artifacts) X 4 teachers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data analysis Begin transcription</td>
</tr>
<tr>
<td>Mar.-Apr. 2010</td>
<td>Pilot interview #2 X 1 teacher Revise case study final interview protocol Interview with M. Hardt</td>
<td>Data collection #2 (observation, interview, artifacts) X 4 teachers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data analysis Continue transcription</td>
</tr>
<tr>
<td>May-Jun. 2010</td>
<td>Pilot interview #3 X 1 teacher Revise focus group protocol</td>
<td>Data collection #3 (observation, interview, artifacts) X 4 teachers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data analysis Continue transcription Begin single case analysis</td>
</tr>
<tr>
<td>End Jul. 2010</td>
<td></td>
<td>Data collection #4 (focus group) X 4 teachers</td>
</tr>
<tr>
<td>Aug. 2010-Jun. 2011</td>
<td>Background interviews Unpublished reports</td>
<td>Follow-up with case study participants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data analysis Continue single-case analysis Begin cross-case analysis Writing background</td>
</tr>
<tr>
<td>Jul. 2011-Jul. 2012</td>
<td>Email correspondence: M. Hardt Member checking</td>
<td>Writing study</td>
</tr>
</tbody>
</table>
APPENDIX H: Focus Group Quotations

These quotations, drawn from all study participants, were excerpted from interview transcripts and shared during the Focus Group. Teachers were asked to identify quotations that resonated with them or that they wished to comment on.

"I like the fact that the kids can see their growth. So, something I ask them to do the first unit, I might ask them to do that again—not the unit, in the first few days of class—it’s significant to maybe something they do on their final assessment."

“Pioneering, is what it feels like. Because, you don’t know, how the connections will work, or where it will go, but I really do believe that the students are learning, a lot more than if they’re just passively receiving content.”

“…although I often don’t think I have enough differentiation, when I look at that segment, I see that everybody was working according to what they needed to do. And I was intervening as necessary to help them do it. Um, although there was a common task, um, I was, you know other than the bit with the small group at the [Smart]Board, I didn’t have the sense that I was the center of the learning universe.”

“…it really does give you—like the cognitive carpet and the brain work part of it. It really helps you—or it really helped me—to understand the intellectual load that’s required when you lay on tasks with kids, which I had really never thought of and when I was accommodating students. I don’t think I ever really understood that it’s not necessarily that they need to do less, it’s that they need to focus in on a or a couple of specific tasks or elements of the task. So that was a big thing for me ‘cause I knew I had to accommodate for kids, but I never really knew what I needed to accommodate.”

“…the use of question structure in teaching and all of these devices, makes the task accessible for every student. I do feel increasingly that it creates a level playing field in the sense of: We’re all capable of snapping a question, we’re all capable of producing details, and yes, our cognitive skills will show up in the degree to which we are able to articulate details and how specific our details are, but essentially everyone can produce evidence of the degree of their thinking. And, if you have that, you’ve got something upon which to build, you know, all the parts of the program. And I think a good way of knowing what the next steps are with certain kids, in terms of trying to help them advance their skill.”

“I really do think that it’s a much-improved program, and it’s an improving program. And I think the kind of things that are happening have—might have longer term impact on their learning. I’m hopeful that they might remember, or that they have been changed somehow, and that that change shows up in more than being successful.”
“The idea of creating a scaffold is becoming inherent in my planning. That, this is an embedded process, that I can’t present a text anymore without putting it in the context of the taxonomy.”

“… there’s never a dull moment. It’s exciting because it’s foundational to learning. Whereas a KWL isn’t foundational. But understanding how to answer questions, and being smarter about answering questions, and understanding the structure, the system of questions, and being able to question teachers about their questions, and knowing what questions are asking, what is requested of you, before you even answer the question, helps students to take control of their learning and to be active rather than passive.”

“And it’s kind of liberating because it takes a lot of pressure away in the sense that I don’t have to drive every minute of this period. You are the GPS device. And set it up that way. … it does mean being much more open to not being tied to what must be done in this amount of time. In fact, the challenge is the whole concept of units, really, I mean, what other profession does anything by units? What do we do in life as a unit? This is my spring unit?”

“… actually see where their dropping off point is. Um, so they’ll reach a certain point and they can’t get past it, and I never before had some visual means to identify where the block was, and then, what’s the next step? Because the Periodic Table actually shows you this is the next thing they need to do, they need to, you know … if they’re stopped at a zone 3, then we need to move them up to zone 4 …. I never found anything, I never found anything before in education that clearly showed me the development and process that students needed to go through, the steps to move to higher level thinking

“Gwen, she said, Oh man, we’ve got over 126 quotations. How am I going to remember them? And so we talked about that as a class and eventually we all agreed: You don’t memorize quotations. Quotations are a nice way of getting at Integrate. So, if you know the character, you can look at a quotation, you can look at the words, um, ah, what they’re saying, how they’re saying and what they’re doing, and pull together what character is based on all that other stuff. You don’t memorize.”

“I do tend to look in patterns. I do tend to look at things and try to make connections between them \ And that’s where I think that this grade 9 course that we started to adapt is really, like I get it. I’m all of a sudden at the place where I feel I’m teaching the whole kid, rather than the unit-based things. Although I do see structure within those too: parts, functions and connections. But I love the way that we are now making connections between different forms and different experiences, finding the patterns within those.”

“And that’s what I was saying …, I now perceive all professional learning strategies through the lens of the taxonomy. And they all fit in neatly into the structure of the taxonomy, so all of these things are merely what you’ve got in your arsenal, your palette of strategies, but program developed within the taxonomy.”

“I just went through all my notes on Fifth Business and just threw them out [laughs]. I mean, we had stuff, Lesley, you know, the duality of Dunny and Boy …, we would lecture and lecture and lecture. We had a
whole lecture on the names in *Fifth Business*. That means nothing to the kids. We’ve read it 20 times, they’ve read it once. And then we ask them questions on that stuff and they’re stuck. And … it’s made us change our approach to teaching, and we’ve talked about that before: Teaching like a learner, rather than a teacher.”

“We were talking about how Hitchcock manipulated the audience. But then this evolved from this one of Jane’s, where she adapted it to represent story elements. So this was just taking it from the realm of fiction to non-fiction but also non-fiction documentary. So, I just thought, as an organizational tool it was—it worked really, really well, but then the more I looked at it I thought, Wow! We just covered a whole boatload of expectations.”

“I think what has impressed me is that they are, ah, their Integrate, Generate questions are quite sophisticated, the kinds of questions I would ask. Uh, so, I think the big difference with text now is that I don’t prep sets of questions anymore. ‘Cause I know I’m going to do it with them. And generally whatever I think should be put on the table as questions is—it comes out in some form or other. So, there’s a big relinquishment of control.”

“And if you start to use the scaffolding approach, then you—there’s no room for those irrelevant questions. So, if I wasn’t using question structure, then all of those things would still exist in my assignments because I wouldn’t have any way of narrowing it down.”
APPENDIX I: Participant Information

**General description of the study:** The purpose of the study is to explore how teachers are making sense of and implementing this professional learning. Researcher and participants will work together as partners to construct understanding together about the meaning and impact of the structure-based approach on participants’ thinking and practice.

**Participation:** Participation is completely voluntary.
- Participants will be selected to represent a diversity of situations, including but not limited to subject(s) taught, grade(s) taught, number of years teaching experience, number of years implementing the structure-based learning approach.
- Participants may withdraw at any time without negative consequence.
- Participants may decline to answer any question or take part in specific aspect of the study.

**Study components and time commitment:** It is anticipated that participant involvement will occur for 1 to 1.5 years. This study involves the following:
- an initial, informal information and planning meeting between researcher and participant
- 3 day’s general observation, including close observation of one class, selected by participants
- 3 follow-up interviews (preferably on-site)
- 1 focus group, consisting of all research participants.

**Data collection and artifacts:** The interviews and focus group will be audio-taped to support accuracy of note-taking and data analysis. These will be confidential and will be destroyed at the conclusion of the study.

Ideally, classroom observation will also be supported by audio and/or videotaping. The purposes are:
1. to enable the researcher and participant to review and collaboratively make sense of excerpts during the follow-up interview
2. to support teacher reflection on classroom practice.

This will be negotiated with each teacher-participant, school and board. It is anticipated that in the current context of job-embedded professional learning such as demonstration classrooms and lesson study, some participants will welcome the opportunity to reflect on an audio or videotape artifact. However, participants may elect to videotape a single session or avoid videotaping altogether. Audio and/or videotape artifacts will be confidential and destroyed at the conclusion of the study.

Interviews may include discussion of artifacts such as instructional materials or samples of student work.
- Instructional materials will be teacher-selected.
- Samples of student work will be teacher-selected and anonymous.
- School and board protocols, e.g., collection of letters of consent, will be adhered to.
- All artifacts will be treated as confidential data to be viewed solely by the researcher and participant and destroyed at the conclusion of the study.
- Excerpts from artifacts incorporated into the written report will be (1) anonymous and (2) used to illustrate case study content and/or showcase classroom activities in a positive way.
**Assurances:** This study is
- not about evaluation of teachers, schools, or students
- not connected with the Ministry of Education projects. Results will not be shared with the Ministry. The sole affiliation is with the Department of Curriculum, Teaching and Learning (CTL) at OISE/UT, where the researcher is a doctoral student.
- not about school boards or schools or local professional learning initiatives.

**Risks/Benefits**
The study anticipates no risks or harms to participants, students, school or board.
- The project will adhere to ethical review guidelines for the University of Toronto and for each individual school board.
- Data generated during the research are confidential. No component will be shared or discussed with anyone except participants.
- The researcher seeks to be as responsive as possible to the needs of the school site and participant, e.g., scheduling classroom observation at mutually agreeable and suitable times, co-planning to minimize disruption, and being as unobtrusive or as open as participants are comfortable with.
- Care will be taken to be as anonymous as possible in the report, e.g., pseudonyms and generic description will be used to identify participants, schools and boards.

Participation does provide an opportunity to partner with an educator interested in the structure-based approach and its impact on teachers’ thinking and practice. The study should support, make more explicit, and enrich participants’ professional learning.

**Financial costs and compensation:** This study is not funded. The researcher takes responsibility for ensuring that participants do not incur any financial costs, e.g., travel expenses for the focus group. There is no financial compensation for participation.

**Access to Information, confidentiality, and publication of results**
No one besides the researcher will have access to the data or artifacts, which will be stored and backed up electronically on the researcher’s password-protected hard drives and in hard copy in locked filing cabinets on the researcher’s home office. Data and artifacts will be destroyed 6 months after completion of the report/dissertation.

Information about how to access the full dissertation will be provided at the conclusion of the study.

**Contact Information**
The following contact information may be useful to participants:
- Researcher: Lesley Elliott, lelliott@oise.utoronto.ca or tooey@rogers.com; 519-885-9025 (H)
- Advisor: Linda Cameron, Associate Professor, lcameron@oise.utoronto.ca; 416-978-0321.
- Participants may contact the Office of Research Ethics at ethics.review@utoronto.ca or at 416-946-3273, if they have any questions about their rights as participants.

Participants are encouraged to retain a copy of these pages for their records and reference.
February 4, 2010

Dear parents:

I am a Ph.D. student at the Ontario Institute for Studies in Education (OISE), University of Toronto. I am researching how classroom teachers are using particular professional learning in their instruction. I hope this study will contribute to a better understanding of how this particular learning influences teaching.

(Title & name of teacher) has agreed to participate in this study. I will be observing (title & name of teacher) teach on three separate days. This observation involves note-taking, audio-taping and possibly videotaping (title & name of teacher). These tapes will serve as a record of (title & name of teacher)’s teaching and to provide an accurate transcript for close study.

Please be assured that students are not the focus. Tapes and other data are confidential and will be destroyed at the end of the study. Every effort will be made to ensure that regular teaching and learning are not disrupted. No student, teacher, school or board will be identified by name or by distinguishing personal information in the report. Any references to classroom dialogue, instructional materials and student work in the lessons will be completely anonymous and used only to contribute to our understanding about teaching and professional learning.

This study has met requirements of the University of Toronto ethics committee and the Waterloo Region District School Board.

Please complete the attached page and return it to (title & name of teacher) by (date, determined by teacher). If, on the research observation day your child does not wish or is unable to participate, his/her feelings will be respected.

I sincerely appreciate your support and am happy to provide additional information. Please contact me at l.elliottakabrien@utoronto.ca or my faculty supervisor, Linda Cameron, at lcameron@oise.utoronto.ca or 416-978-0321.

Thank you.

Lesley Elliott
Ph.D. Student
Curriculum, Teaching and Learning, OISE/UT
Permission Form

Student’s Name: ______________________________________(please print)

I understand that (title & name of teacher) will be observed by a researcher. My child is not the focus of the study and his/her identity will not be disclosed. Classes will proceed as usual with minimal disruption.

Indicate your choice by checking the appropriate boxes:

- [ ] I give permission for my child to participate in classes in which (title & name of teacher) will be audio and/or videotaped as part of a Ontario Institute for Studies in Education, University of Toronto study conducted by Lesley Elliott. This artifact will be used during researcher-teacher interviews and analyzed by the researcher.

  OR

- [ ] I do NOT give permission for my child to participate in classes in which (title & name of teacher) will be audio and/or videotaped as part of an Ontario Institute for Studies in Education, University of Toronto study conducted by Lesley Elliott.

Signature of parent/guardian

__________________________________________________________________________  Date ______________________

- [ ] I would like a copy of this letter and permission form for my records.

PLEASE RETURN TO (title & name of teacher) BY (date, determined by teacher).
APPENDIX K: Keith: Practice in front of the curtain

This narrative description was a thinking strategy for videotaped lessons during data analysis. The dialogue was transcribed verbatim. The description and narrative, obviously, are interpretive. This description was the first I wrote, of the first lesson of Keith’s I observed.

I am sitting at Keith’s desk, which is tucked away in a back corner of his classroom. I am nervous about managing the video camera and audio recorder and making field notes, but feel lucky to be here—school and classrooms are such interesting spaces; I love diving into them. Immersion is necessary: I want to understand how Question Structure plays itself out. Is it an object of study? A tool? A motif? A frame? What are its attributes? What does he include? Omit? Emphasize? How does it function? How does everything connect? How explicit is it? How dispersed? How important?

Keith’s is an interior, windowless room, painted pale institutional green, and lit by the inevitable fluorescent tubes. The room—indeed the entire building—is tired, and Keith is looking forward to being relocated to a new school wing, which will be built next summer. To my left, along the back wall, are bulletin boards on which Keith has posted—somewhat randomly and directly onto the synthetic cork—film posters and assorted materials, many to do with nature and ecology. Among these are photocopies of the Mosenthal Taxonomy and the Parts, Functions, Connections graphic organizer. These 8 ½ by 11 inch pages are not prominent. During the course of the semester, I will see students’ collaborative work-in-progress posted as well—for reference and access, more than for display. Unlike my own classroom, Keith’s is not ‘decorated.’ In all my visits I never overcome my sense that the walls are bare, that there is space. Space has been cleared for talk; the very walls yawn out from all the stuff they talk about.

To my right, along the side wall opposite the door, is a blackboard. Blackboards also stretch across the front of the room, and in front of these hangs a pull-down projection screen. Wooden shelving and cupboards are pinched into the wall space under the blackboard ledge. Keith’s wooden lectern is positioned front center, and today, so is the overhead projector on a cart. This configuration means that using both board and overhead requires lowering and raising the screen during the lesson. Doing so is
somewhat awkward, not only because the screen covers the center section of the board when down, but also because Keith has to tie the screen to a cupboard door handle to keep it from snapping back into its casing. That said, Keith handles this unobtrusively; overall his lessons are low-tech and uncomplicated.

Keith hunches over the lectern when taking attendance—which he slips into a transitional moment and follows with a headcount, the only time he ever seems absorbed in his own rather than students’ business. It is odd, given how central this lectern is, how Keith uses it only as a convenient stand for overhead transparencies and his text, rather than as a lectern. While teaching, he ranges around it. I think of the Wallace Stevens’ “Anecdote of the Jar,” in which the wilderness surrounds and rises up to the jar. That is not the case here: the lectern broods like an old fart, silent, peripheral and generally ignored, despite where it stands.

Student desks are arranged in a horseshoe, leaving open floor space front and center. In later visits, the desks will be arranged in pods of four, meaning that students physically focus in on each other, rather than on Keith. My sense is that drawing this room would require multiple focal points, rather than three-point perspective. Keith ranges through the space in front of the lectern and along the front board as he teaches. He says his “wander[ing]… makes people focus….” There is no down time for him during class time: he is always ‘on’ and usually moving. I see him sit on a student desk during class discussion once in all the visits I make to his classroom.

The grade 10 Academic students, most of whom are adolescent boys, are fairly rambunctious. I can feel their energy, even when they’re still. Keith tolerates quiet chatter, unless he has specifically requested their attention, for example, to instructions. While talk frequently bubbles up to the point that Keith has quell the volume—“Guys, guys, I don’t mind if you talk a little bit, but not so loud”—, students are cooperative and on task. Keith tolerates considerable physical movement around the room, mostly by the young men, who frequently get up to drop items into the garbage can which sits by the classroom door. Even though this is only the second week of the winter semester, there seem to be well-established routines, for example students wishing to use the washroom sign out on the blackboard when leaving and to erase their name upon return. There are the usual interruptions: late students, PA announcements,
telephone calls, students leaving for field trips and appointments, students asking what they should do because they’ll be away on a field trip to Chicago on the day the revised essay is due. Keith seems to be establishing behavior parameters. At one point, for example, he interrupts himself to say quietly to a student, “—Mark, I hope that isn’t a cell phone, ‘cause then I’ve got to send you down to a VP.” His comment is firm, but gentle. He pauses briefly, while the student slips whatever it is away, and then resumes what he was saying. On another occasion he interrupts himself to say quietly to another student, “I hope this isn’t going to be a problem …..” Although I have been watching, I haven’t noticed what Keith noticed. Overall, he is relaxed and open with students, and laughs easily at himself. For example, when the PA interrupts to call the basketball team out of class, Keith chuckles loudly, because two students had left for that purpose fifteen minutes earlier. He says to everyone and no one in particular, “Interesting, eh? Interesting. Either they went early or there’s a bunch of guys that are getting out late. Which do you think it is?” His room is a safe place to be, and students seem comfortable.

Although Keith has introduced me, students seem to ignore me and the video camera, which is mounted on Keith’s desk. There is one student who has requested not to be filmed, and it is easy to avoid doing so. I feel unobtrusive, but Keith comments later that the camera did make students less forthcoming than usual in responding to questions. I wish I could be a fly on the wall, I wish I could move about and listen in on student conversations. I miss teaching my own classes.

The lesson has momentum and variety, laughter and seriousness that this brief description does not capture. I am impressed by how many things they attend to, without rushing or being unduly distracted by the disruptions. While efficiency seems to have guided some instructional choices, I have a sense of expanding and contracting, of opening out and focusing in, of relaxing and concentrating. While Keith clearly has an agenda—specific goals for the lesson—he is also attentive and responsive to students and enthusiastic about their contributions. There are things to do and they get them done, but there is time for brief tangents, details and fun. While activities are teacher-directed, considerable energy is devoted to engaging students’ attention and interest, primarily through questions, many of which refer to news events or draw on students’ experiences and knowledge. Keith is adept at sprinkling quiet one-
on-one exchanges throughout the period, establishing personal contact with individuals without derailing work on tasks. He is also effective at overcoming body language that avoids participation—hiding in hoodies, for example—without being in a student’s face or ragging on them, as students say.

Keith opens the class with a discussion of the upcoming Winter Olympics—whether students intend to watch the opening ceremonies, what their favorite Olympic sport is, how Moguls are constructed, what the difference is between luge and bobsled, which sports are new to the Olympics. He seeks information at least as much as he shares it. Despite the four solid walls, talk is anchored in the outside world—events, names, facts, predictions, stories. While there is a unifying topic—the Winter Olympics—the conversation is wide-ranging. Keith knows a lot of stuff—and wants to know a lot more stuff. There an abundance interesting ‘stuff’ to talk about, information proliferates in unexpected ways, it is a comic feast and everyone is invited. Keith has a great appetite for it, and relishes each dish. Despite clear goals and on task activity, I have n

Then Keith walks students through peer editing of their essay drafts, reviewing essay structure and formatting. The shift in tone and attention occurs easily—students are with him, and settle down quickly after moving around the room to exchange papers. Keith announces that they will do a ‘structural review’ of one another’s drafts. This review focuses primarily on identifying essay elements (“Parts” in the language of Question Structure), some characteristics (“Attributes”), and the purpose and role of these (“Functions”). While I am aware that Keith will eventually describe elements using language from Expository Structure (for example, Leads and Exits), at this point in the semester I doubt an observer would see the content as anything other than conventional. Overall, the review is quantitative rather than qualitative: Do students have five sentences in each body paragraph or not? I am reminded how even such apparently straightforward criteria can be problematic: What if a student has four sentences but one is compound? What if one is a comma splice or run-on sentence? Keith responds to these concerns and suggests that students comment when elements are well done, as well as when
elements are not, though there is not, today at any rate, any discussion of what makes something effective or ineffective. This part of the lesson alternates between recitation (review of element requirements) and application (peer review). Keith focuses on a few elements at a time, and then circulates while students work briefly on each other’s draft, sipping coffee. At the conclusion, he directs students to make sure they understand their editor’s comments.

Then Keith introduces “something new”: **Question Structure**—**Given** and **Requested**, the meaning of common interrogative pronouns (**Requested Words**), and **Locate** (**Right There**) questions. This part of the lesson, too, is teacher-directed, and Keith clearly believes that providing a rationale that speaks to the practical benefits for students of an activity is important. He says, “When we’ve taught Grade 10 this stuff that you’re going to get right now, it’s not earth-shattering, it’s very very simple, but when they apply it, especially on the Literacy Test, it really helps them, but even more importantly, it not only helps them in English class, it helps them in all classes.” He also positions questions as “fundamental to our knowledge”: questions are the gateways to information because they “allow us access.” I soon learn that the acquisition and construction of knowledge and the need for direct access are recurrent themes. Keith frames Question Structure as a problem-solving strategy by questioning students about problematic school experiences. Over the course of classroom observations, I will hear several such exchanges: “How many of you on a test or exam have answered a question but then you get it back and the teacher says, ‘You haven’t read the question. You haven’t answered properly.’ Did anybody have that experience? ... and you know the right answer, and then you look back and say, ‘Oh Darn, yea, missed it.’ Anybody ever have that experience? ... Or, the flip side to that is, how many have ever had a question but you have no idea what it’s asking for you to do?” After soliciting from students what they know about questions, for example that they can be open or closed, Keith asks them if they’ve ever been taught the “structure” of questions. Question Structure is positioned as knowledge that can be used strategically to address these problems. He then informs them that questions are “built around two things”, the **Requested** and the **Given**. Keith does not use Hardt’s **Lame Game** or **card game**. Nor does he use Hardt’s metaphor of “**Snapping**” questions into Given and Requested. Rather, he uses overheads
(I recognize Hardt’s graphics), which he gradually uncovers, giving examples verbally and on the blackboard, while students copy notes. In this portion of the lesson, the purpose seems to be to tell students information directly and efficiently so they can get on with doing it—the telling is a necessary evil, as it were. This is another, though less frequent, motif in the lessons I observe. Keith seems aware that this is not particularly engaging, saying, for example, “All right. Now, listen very carefully. Last note we’re going to take today is this....” The Requested, he says, is indicated by “Requested Words”. He provides some simple examples, for instance, “Where does Markus sit in this class?” For these examples, students are able to identify the Requested Words, such as “Where”, which he underlines and defines as ‘location’. The Given, he says, is that Markus does sit somewhere. The answer, of course, is “Right here.” [He indicates where Markus is sitting.] There is one indisputable response that can be located and pointed to in the ‘text’ of the classroom. He focuses particularly on “What” because the meaning often depends on a “partner word.” He provides some examples, one beginning with “What happened...?” which requests an action. After working through a list of Requested Words and their meanings, Keith assigns students homework. They are to read the short story “The Bicycle” and compose two Locate questions on the story.

To motivate and prepare students for the independent reading assignment, Keith uses questions to engage students in a pre-reading discussion about possible significance of the story’s title: “Now, why would a bicycle be important?” Most of these questions solicit responses focused on students’ personal experiences: “When did you first start to ride?” “What was it like?” “And when you finally get [balancing], how did you feel?” A student comments that it was “a rush.” They talk about baseball and hockey cards clothes-pegged to fenders and handlebar streamers: “Why did we do that?” There is a lot of talk about how bicycles extended the geography of their world and their independence: “And how many of you remember when you first started to ride a bike, after you do a few whips around the block, you’re having all kinds of fun, and then you go to your buddies, you all start to do things, you go places?” A student comments that a bicycle is freedom. Keith punctuates the recitation with personal anecdotes; because he grew up locally, he refers to places with which students are familiar. The
discussion is animated, and Keith uses even more energy, and more exaggerated gestures, than when providing explanations and notes. While everyone seems to be following, side conversations bubble up, but the chatter seems to be Keith’s indicator of students’ engagement and excitement.

Another part of their homework is to complete two Parts, Functions, and Connections charts. This graphic organizer, which Keith uses as a framework for summarizing and note-taking, has clearly been introduced previously. Keith says, “We are going to read it, so that we know it—which means we’ll read it and take notes on it. You’re going to read it and you’re going to make a chart on it—Parts, Functions, Connections. Make two charts. There are two main characters in this story. The first one is Tante Rose. [There is a brief discussion about the meaning of ‘Tante.’] So, you’re going to do a whole Parts, Functions, and Connections on Tante Rose. [He points to the ‘Parts’ section of graphic organizer.] What does she do? [Indicating ‘Function’ section] How does she do it? [Indicating the ‘Manners’ section]. What do you think about it? [Indicating the ‘Connections’ section] What’s she like? [Indicating the ‘Attributes’ section] Don’t do ‘Levels.’ … [Indicating the ‘Levels’ section.]” A German exchange student contributes further to the meaning of ‘Tante.’ “Oh really?” Keith comments. This is an expression of interest and surprise, rather than of skepticism. I have heard this response several times already this period. The student provides more information. Keith continues, “The other person in the story is Hannah. So you’re going to do: What does Hannah do? How does she do it? What do you think about what she does? What’s she like as a person?” [Indicating relevant sections of Parts, Functions, Connections chart] “Read, two charts. Demonstrate your knowledge of the story, because you never know when I’m going to ask you to summarize, right? And If I do ask, you can use those notes.” He reminds students that there is absolutely no requirement to work through the graphic organizer linearly. I will see that this too is a theme: the implicit message is that students will discover that they have individual preferences and that their use of tools need not be conventional. Students then have five minutes to begin their homework, though given the short time, it isn’t particularly productive. However, students seem content, and do not groan about the homework or complain that the revised essay is due the day after.
### APPENDIX L: Keith: Themes and images matrix

This is an example of the matrices I used to cluster themes and images (originally 11 x 17”).

<table>
<thead>
<tr>
<th>Pedagogical Principles</th>
<th>Images</th>
<th>Sample Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. The collective is essential to learning.</strong> <em>(Don’t do anything alone)</em></td>
<td>C-IQ Teacher as facilitator</td>
<td>Build positive relationships with and between students: Use of names and making personal connections questions</td>
</tr>
<tr>
<td><strong>2. Understanding is socially constructed.</strong> <em>(Don’t do anything alone)</em></td>
<td>C-IQ</td>
<td>Use collaborative work—including strategies that structure productive talk, such as jigsaw, and using heuristic structures (implied questions) to guide/facilitate dialogue.</td>
</tr>
<tr>
<td><strong>3. Understand—and accept—students’ perspectives (in terms of PFC—accept that Levels will grow in sophistication with each cycle)</strong></td>
<td></td>
<td>Avoid comparing students’ understanding to the teacher’s understanding, e.g., what’s unique to the teacher may be a new insight for a student.</td>
</tr>
<tr>
<td><strong>4. Teachers facilitate learning.</strong></td>
<td></td>
<td>Model, provide frameworks and foundations, practice, guidance—but ultimately “step back”</td>
</tr>
<tr>
<td><strong>5. Everyone can learn.</strong></td>
<td>Educational Communicator Students say, “I can do this.” Run with it. “Brac-a-brac, ba-da-boom.” “Blasé” “It’s not hard.”</td>
<td>Build from simple to complex, e.g., complete the Levels component of a PFC after the other components have been addressed. Avoid using the learning; throw out lecture notes. Have students construct all questions for all writing, including text writing.</td>
</tr>
<tr>
<td><strong>6. Learning is incremental.</strong></td>
<td>Building a house Travel from here to there, start to finish. “Do you like it?”—“What have you learned?” “And that’s okay.”</td>
<td>Focus on a few times; add units as students gain facility. Begin with details and build toward synthesis. Require increasing level of sophistication in Levels (PFC). Articulate themes (PFC Levels) for literature essays by synthesizing PFCAM components of PFC. Formulate thesis for research paper from research (general to specific). Review test multiple times in multiple ways, e.g., first reading, PFC summaries, whole-group summary reviews, collaborative question-generating, test writing, etc. Demand that students “know” the test: students create tests on important knowledge, beginning with Locate questions.</td>
</tr>
<tr>
<td><strong>7. Making connections is essential to learning, to transforming information into knowledge.</strong></td>
<td>Connections</td>
<td>Model how to make connections with personal experience and knowledge Pose questions that require students to make connections with personal experience and knowledge. Teach students how to integrate and generate.</td>
</tr>
<tr>
<td><strong>8. A few fundamental structures assist learning. Strategies operate within these structures. (1) enables articulation of ideas &amp; (2) builds appreciation of literature; appreciation only comes with understanding: (3) provide a level playing field in the sense that everyone can use them to be successful, though some students will use them more effectively because of larger experience and prior knowledge. Structures also “allow” development of voice, agency, independence, multiple perspectives, flexibility, innovation.</strong></td>
<td>Solid knowing Practice, revisiting, spiral curriculum “A book is only as good as the number of times you’ve read it.”</td>
<td>Have students use PFC. Given and Requested (QS) Ask, “What do you think?” Invite multiple points of view. Students create PFC notes, which provide the structure and content for students to identify what is important and what it means. Prompt/encourage non-linear use of PFC. Allow innovations to emerge out of structures, e.g., as in process writing adding ideas, reaching ahead to include transitional words/phrases, experimenting with sequencing.</td>
</tr>
<tr>
<td><strong>9. Students learn through “doing” (it takes a number of times and methods)</strong></td>
<td></td>
<td>Begin with PFCMA; support and provide lots of practice for L Use the same structures for each unit of study but with increasing complexity</td>
</tr>
<tr>
<td><strong>10. Students need as direct access as possible to doing (i.e., thinking). Doing/thinking—especially with others—is fun.</strong></td>
<td>“There should be no surprises.” Opening doors and windows, providing access. Pulling aside the curtain, showing that there’s no magic. “Cooking with gas” “Ba-da-bing, ba-da-boom.” “Blasé”</td>
<td>Use explicit teaching Teach/use structures, especially QS, PFCAM, and ESX Anecdote about being excited about research—lay out clothes night before “...I love it, love it. The classroom is just so engaging. It’s just so much fun. You get that interaction. Like I said yesterday, when you get that one student saying Leaf-green Cherokee—or Leaf-eyed Cherokee—you get a whole new spin on it you hadn’t thought about, and it makes sense. Yes, now we’re cooking with gas, now you’re thinking. Now, in my 2D course outline, that’s the little phrase underneath the title: If you aren’t thinking, you’re sitting.</td>
</tr>
<tr>
<td><strong>11. The most important goal is that students learn how to learn.</strong></td>
<td>“What are we supposed to learn from this?”</td>
<td>Teach fundamental structures and four cognitive processes Use think-alouds to model thinking. Provide frequent teacher and peer feedback Select metacognitive reflection Use “What are we supposed to learn from this?” as the Essential Question.</td>
</tr>
</tbody>
</table>
APPENDIX M: Keith: No man behind the curtain

This narrative metaphor emerged during data analysis and writing. (After member checking, I presented Keith with a framed copy.)

_In some ways, Mr. D’s students find themselves in a strange land. It’s an English class all right, but different. For one thing, there is this structures stuff. For another, he keeps talking about building knowledge. But when they ask him questions, he wants to know what they think._

_Good grief. What they think is: we landed here by accident. At this rate, unlike Dorothy and her companions, they will never find answers._

_They are anxious. Thesis statements are so many Wicked Witches, writing essays as laborious as pushing a Lion out of a poppy field. They are expecting Winged Monkeys._

_Could they not just drift off and dream?_  

_Mr. D, who is armed with structures and questions, strides along purposefully. He has plans, but they are doubtful. The yellow road spirals up and up. They would tire of revisiting the same place, but with each turn their pace quickens and their vision sharpens._

_“Ba-da boom, ba-da-bing,” says Mr. D. “Play with it.”_  

_When they arrive at the Emerald City, there is no Guardian at the Gate who is, perhaps, Mr. D., who believes “that every kid can do this”—even common farm girls from Kansas. He leads them right into the palace and draws aside the curtain, as if this was the whole purpose of coming this long, long way. And..._  

_There is no Wizard behind the curtain, no magic machinery, no terrible talking head, no fancy-dancy lectures or surprises on tests._  

_Just science, natural blueprints. Then they knew: Just throw a pail of water and click your heels to be free of Wicked Witches, the Wizard and Self-doubt. They start to realize: “I can do this.”_  

_They say it four different ways._

_“Ba-da boom, ba-da-bing,” says Mr. D. as he steps back and disappears._

_(L. Elliott)
APPENDIX N: Gayle: The purpose of education

The poetic transcription below is a suite of ‘found poems.’ Writing these was a useful supplement to coding and memo-writing: It helped me re-connect with participants’ voices, to confirm patterns and emphases in the data. I have included additional excerpts as (green) sidebars in the text of the study.

The purpose of education
What the kids do here, they should be able to take with them
to science and math and high school, hockey or a bank or a gas station.
Like, when you have a problem, how are you going to solve it?

That’s what structure means, what makes it successful:
They should be able to use it somewhere else.

I hope that’s the purpose of education: life skills to be successful
in jobs and relationships and interactions. I’m definitely about that.
The content to me is largely irrelevant.

Of course, you’re not sure what the outcome is.
You just never really know.
I think a lot of education is based on hope.

Structure
I’m very structured. I like
structure. Even my dictionaries are all lined up, and the kids know to do that.
and everything’s always in the same place on my desk.

The kids are comfortable with structure. It’s easy
to be successful because they know
what’s expected.

Some of the other staff have a lot of trouble with my kids,
So the principal asked me, “Why don’t you have trouble with them?” Well, that’s quite a question.

It’s hard when you have no—well, not no trouble, I mean, they’re busy, there’s no question, they’re ratty, but they’re not unlikeable, and they’re never out of control.

But when someone says, “Well, what do you do?” Well, good luck. How do you give that to somebody else? Say, “Well, you have to be like this”?

The kids tell me that I’m honest—and some of them don’t have that at home. When you get the families in, you see the way they speak to each other.

Where you love only comes across if it’s true. I love grade 7s. You can’t fake that.

**The Mosenthal Taxonomy**

What attracted me to the Periodic Table is that it provides a framework that fits all learning, thinking and reasoning in every subject area from your lower level questions to your deep thinking questions.

It shows the building blocks, and then moves up into those global understandings.

Global understandings are the Big Ideas that you want kids to get.

It’s the backwards design, like Wiggins and McTighe, where you start with your big Idea and move backwards to the finer points because it takes all the other material to build up to that.

So it changes the way you look things, it changes the way you make up assignments, the way you look at your texts, your diagrams, all that stuff, because you’re looking at it through a different lens.
APPENDIX O: Mark: Lessons from Sisyphus

Mark’s transcripts did not lend themselves to ‘found poems.’ I coded and coded and coded before these emerged. Although I have used Mark’s words as much as possible, these were more generative and abstract. Two other excerpts are included in the text of the study in (green) sidebars. Mark received my email with the poems attached for member checking after a particularly rough Friday. I was nervous about his reaction, but he responded that the poems reminded him why he kept rolling the stone up the hill year after year.

The Stone

Every year, I shoulder stone into the arduous
Climb, the Lost Boys’ nonchalance impervious
To cajoling, “Why do we have to do this?” they cry.

I feel our way by instinct. I take them where I can and let them go.
(Maybe, as one said, “It’s not the same stone” and I have built a mountain of stones—
But from a curricular point of view, the stone
Is the same.)

Camus celebrated the absurd victory, the conscious
Pivot and descent. But I am a study
In petrology. What do I think about
When pushing stone? Not what I could
Be doing instead. Not chocking stone at 3:15 and calling it a day!

Perfectionism doesn’t make you happier, but
Is a matter of professional integrity: fix the flaws. How is it possible
To function when things aren’t complete?

Nothing is as integrated as stone, nothing
As common. Stone takes time
And a lot of thinking.

It is a measured labour, absorbing stone’s calm
And complexity, letting it cool
The eye, planning how to roll it differently, how to find the best route, how to put some
Meaning into it. That
Is the terrible responsibility:
To find reasons, make meaning, and do
So they can.
Stone leans into the clavicle, the teaching heart
Counts on the cradle of sinew, the planted limb, the careful
Shift lift heft of weight.
Few notice the freedom of fingers to play
Foliation, sheering mica
And mind.

So what?

A Somebody-Wanted-But-So and a Think-Pair-Share—
are preliminary engagements
useful organizers
but at the end of it
there has to be
a So what?

So what you’ve organized this material? So what
you’ve talked about it for 3 minutes? What next?

They’re good—but they’re not a system
or a structure

They’re part of this, here’s
where they fit:
in the taxonomy!
So you can have your arsenal
or palette of strategies
but program develops in the taxonomy
  What is your idea of a beginning? Your idea
  of an ending?
  and all of the rest woven in

Teaching, strategies
no longer
define you
APPENDIX P: Gayle: Excerpt from T-chart lesson

This script excerpt is excerpted from transcripts of a T-chart lesson Gayle taught to her two grade 7 classes. There was much more dialogue—interchange between teacher and students—to transcribe than in Keith’s classes, where students spent a lot of class time working collaboratively. Eventually I consolidated the two very lengthy transcripts into one, in order to re-present the data (possibly for an illustration) more efficiently and highlight patterns. I did have to infer some of the students’ comments from Gayle’s, because neither I nor the recording equipment picked up the students’ voices.

Gayle: I want you in your mind right now to decide whether you’re going to say the yes side or the no side. So right now make a decision. Period.

Josh: Improved the natives’ life?
Gayle: Yes, it improved the natives’ life or no it didn’t improve the natives’ life.

Joe: No, it did not.
Gayle: In your head, not verbally. Now, I want you to write in that box that says “Answer” either “Yes, trading furs with the French and English improved the way of life of the natives” or “No, trading furs with the French and English traders did not improve the way of life.” Yes or no, just pick one and let’s go with it.

Kayley: Can we put: “No, trading was bad”?

Gayle: Yes. So, Yvonne, read me what you put in the Answer box.

Yvonne: The way of life of the natives changed when they traded with the French and English.

M. A: Okay, did it improve it?

Yvonne: No.

Gayle: ‘Cause change is one thing and improvement another, right? If I give you a makeover, do I just change you or do I improve you?

Yvonne: Improve.

Gayle: So, we have to make sure ‘cause those are two different things. (focusing on Devon)

What did you put?

Devon: I put: “Yes, trading furs with the French and English improved the natives’ way of life.”
APPENDIX Q: Mark: T-chart lesson segment

This is an excerpt from a lesson in which Mark reviewed with Applied grade 10 students how to complete a T-chart for a question. Like Gayle, he projected the question, T-chart, and their responses on the Smartboard. The red numbers correlate the dialogue with what was written into the T-chart.

During seatwork on a graphic text, students have recorded student-generated Integrate questions based on the text on the previous day. Mark invites students who have completed seatwork to sit at the front of the room around the Smartboard. Other students continue working at the back of the room. The screen shows a T-chart into which Mark has written one of the student-generated questions. Mark walks students through how to complete a T-chart. In part, he is reviewing a process he introduced to students in grade 9 the previous year.

1. *Mark*: Remember that at the end of the year last year we Snapped questions and put them into a T-chart. Our question today is: ‘Why is Brooke so afraid of what people will think?’

2. *(Mark continues)* Let’s quickly Snap it. *(indicates the label Given on the T-chart)*

   *Student*: There is a reason Brooke is afraid. *(Mark writes the student response on the Smartboard. He does so throughout the mini-lesson.)*

3. *(Mark continues)* So the Requested is—what are we trying to find out here?

   *Student*: What are the reasons.

4. *Mark*: Then we list Details that might help answer the question. *(Mr. records student responses on the T-chart.)*

5. *(Mark rereads the question)* Can somebody sum up what is our basic Answer? Here is all our evidence. How do we sum this up?

   *Student*: Brooke is afraid of what other people will think.

   *(Mark writes the response under Answer, and adds ‘because.’ He turns back to the students.)* Look at all that evidence. What’s the big answer?

   *Student*: Because she wants to set a social standard.
Student: She’s like a clone of other people in terms of her standards.

Mark: I kind of get what you mean, but how do we explain that? (pause) We have two good ideas. Brooke is afraid of what other people think because she needs to set a social standard. Doug suggested that she’s sort of like a clone of other people in her standards. But what do we mean by that?

Student: She’s thinking about her image. She worries about what other people think about it. (Mark adds ‘self-conscious about image’) She wants to stay on top of it all.

Mark: In charge? In control?

Student: She doesn’t really like being like that.

Mark: That’s interesting. She doesn’t really like being that popular. She sometimes wishes she could change the label. You guys are really onto something here. (Mr. D writes ‘So what?’)

Student: She’s afraid to be judged. She doesn’t want to just be popular.

Mark: You’re really onto something. She’s afraid to be judged by her peers just on popularity. What would she prefer to be judged as?

Student: The way she actually is.

6. Mark: Okay, so look at this T-chart. We have snapped the question. We can now go back and say ‘There are reasons’ (corrects Given) because there’s more than one.

We’ve listed all the Details that we could think of, and this has led us to this statement (reads aloud): ‘Brooke is afraid of what people think because she’s self-conscious about her image so she acts like somebody she’s not.’ (pause) This is really, really good. Now, here’s the task before you. I’m going to ask you to take any one of the Integrate questions except for one we just did (scrolls to questions created by students) and then go through process we just did.

Students return to their seats to copy a question. Mark invites the other students to come forward. He models the same process.
**Question:** Why is Brooke so afraid of what people will think?

**Given:** There is a reason Brooke is afraid...

**Details:**
- Self-conscious
- How popular
- Thinks she is fat
- People look up to her
- Others think she’s popular and does everything right
- Doesn’t want people to think less of her, e.g., grades
- Planning a party and has to be amazing and set a social standard
- Easily manipulated by others’ opinions, e.g., drops Carmen because of influence

**Answer:** Brooke is afraid of what people think because she’s self-conscious about her image [So what?] so she acts like somebody she’s not.

**Requested:** What is the reason?
APPENDIX R: Grade 10 Applied History Resource (excerpt)

A history teacher shared a curriculum resource he developed for his grade 10 Applied history students. This resource was intended to address curriculum content and integrate Question Structure to prepare students for the OSSLT, which grade 10 students write in the spring. The format reflected the format of the OSSLT.

The questions below are based on a text entitled “The Sport of Typing,” from the Museum of Civilization.

**Figure R.1 Sample multiple-choice questions**

3. What is the main idea of paragraph 6?
   - E. That typewriters ad 30 parts.
   - F. That typewriters were not as useful as computers.
   - G. That becoming a qualified typist was difficult.
   - H. That women enjoyed working with typewriters.

4. Which of the following best described the organization of paragraphs 1-4?
   - I. present to past.
   - J. general to specific.
   - K. first to last in time.
   - K. most to least important [numbered as in original]

**Figure R.2 Sample constructed response prompts**

8. Summarize this selection. Include a main point and one idea that supports it.

9. Explain how the sport of typing was important for women 100 years ago. Use information from the selection and your own ideas to support your answer.
**Figure R.3 Question Structure rubric**

Assignment: ________________________________________________________________

<table>
<thead>
<tr>
<th>Structure Level:</th>
<th>Snap:</th>
<th>Question Words</th>
<th>Partner Words</th>
<th>Directives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Right There</td>
<td>Right There Repeater</td>
<td>Smash &amp; Stash</td>
<td>Brain Drain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Connections (4)</th>
<th>Internal Connections (3)</th>
<th>Functions (2)</th>
<th>Parts (1)</th>
<th>Incomplete (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question Structure</td>
<td>Question parts are correctly connected to information source, parts do required jobs, and all parts are identified.</td>
<td>Question parts are identified and do their required jobs, but the parts do not connect correctly to information source.</td>
<td>Question parts are attempted to be identified, but parts do not do their required jobs, and parts are not correctly connected to information source.</td>
<td>No question parts, functions, or connections are included.</td>
</tr>
</tbody>
</table>


APPENDIX S: Question Structure in grade 8 mathematics

Question Structure was prominent in the classroom of a teacher of grade 8 mathematics in Mark’s school, suggesting that teachers of other, more structured disciplines are finding Question Structure useful. Exemplars for collaborative student T-chart answers were posted on a Performance Wall.

Figure S.1 Sample word problem

Figure S.2 Bulletin board reminder of Requested Words for Snapping
Figure S.3 Bulletin board reminders for completing a T-chart

Figure S.3 Detail from S.3

Figure S.5 Student-created poster for a directive verb
APPENDIX T: Gayle: Seigneurial system assignment revision

Below is a poetic transcription of Gayle’s description of how she revised her seigneurial system assignment (lesson).

1.

I knew there was something wrong because the kids did not understand the seigneurial system. Initially the students were asked a series of questions just based on the text, and they were all pretty low-level questions with really no building up to anything specific or any global understanding (Figure T.1).

Figure T.1 Seigneurial system questions, version 1

<table>
<thead>
<tr>
<th>The Seigneurial System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please answer in full sentences, pen handwriting</td>
</tr>
<tr>
<td>#1) What did they call the French settlement?</td>
</tr>
<tr>
<td>#2) What was the main transportation route in New France?</td>
</tr>
<tr>
<td>#3) Why did all settlers want their land to be located along the river?</td>
</tr>
<tr>
<td>#4) What were the duties of the Habitant?</td>
</tr>
<tr>
<td>#5) What were the duties of the Seigneur?</td>
</tr>
<tr>
<td>#6) What could happen to Habitants who did not perform their duties</td>
</tr>
<tr>
<td>#7) Who owned all of the land in New France?</td>
</tr>
<tr>
<td>#8) What were the three cities of New France?</td>
</tr>
<tr>
<td>#9) How were rivers traveled in summer and winter?</td>
</tr>
<tr>
<td>#10) What hardships would the settlers have encountered?</td>
</tr>
</tbody>
</table>

“What” questions, which are all low-level and irrelevant

More difficult “why” question, that focuses on reasons

Question order based on text (do not build to most important, high-level question focusing on global understanding)

A more difficult “how” question, that focuses on manner or way

2.

Mike said, “But what is your point? What are you trying to get at?”

I put in that into Zone 6: I wanted them to explain how the system of land distribution
impacted the lack of development of town in New France and then realize
that really what the point was that the settlers really couldn’t defend themselves
because of all those skinny strips of land. (Figure T.2).

Figure T.2 Scaffolding questions using two dimensions of the taxonomy

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3.

What I really wanted to get at, which I finally figured out, was:

“Why couldn’t they defend themselves?”

Well, then we had to go to “Why they didn’t have towns?”

So, that’s how we ended up with the final two questions (Figure T.3).
And then *that* wasn’t even enough, because the kids were still not getting the land layout—even with pictures.

I gave them 32 hectares and had them work in pairs to design their seigneury.

But it was *awesome* to see the kids work together—and they get so mad because they want you to tell them what to do, but once you tell them you’re not telling them, they start to work together. (Figure T.4)
5.

And now, having done the land development and the 10 questions, they're pretty clear on what they're doing.

But it started from: what are you really trying to get at?

Really what I was trying to get at was: “Why couldn’t they defend themselves?”

That was the big problem.

And it’s relevant to today because we end up as an English speaking country because the French couldn’t defend themselves against the natives or the English.

It’s so much better now that it’s unbelievable

And it all began with “What are you trying to get at?”
Appendix U: Dawn: “Through the Tunnel” lesson handout revision

Dawn explained the evolution of her lesson handout for Doris Lessing’s short story “Through the Tunnel.” This story is studied in the Enhanced Academic grade 9 English class. Overall, Dawn’s approach shifts from having students provide written answers to questions to a student-centered, open-ended use of structures culminating in responding to one high-order question.

1. Dawn noted that the first question (Figure U.1) was a high-level question that asked for the significance of the short story’s concluding line. This question is rephrased on the handout as two sub-questions on character change (numbers 1. A and B). Based on understanding of the Taxonomy, Dawn now believes that students are inadequately prepared to answer these questions. She commented that the questions “aren’t scaffolded.” By this Dawn meant that she didn’t enable students to build understanding by organizing questions according the order in which students would think through the story. She said:

I haven’t even asked them who the character is. I haven’t even talked to them about what they’re like at the beginning, middle and end. I haven’t talked to them about what his
crisis is or what his goal is or anything. And I’m throwing this at them. … So it’s completely backwards.

She then noted that her second question, about plot, “should happen before [the questions on character], because [students] need to know the conflict, the complications and everything for them to understand the changes, and then the internal changes.”

2.

In the second version, students worked collaboratively on plot structure before answering questions (Figure U.2). Dawn said: “I sort of started to get an idea that, you know what? I need to do some analysis of plot first, so I went to this one, and they work with a partner and they just trace the plot outline.”

She then built on students’ initial comprehension with a question about which narrative qualities they believed were most important, a topic discussed whole-class. Dawn intentionally did not specify a number of qualities, expecting wide variance in student responses. This was a theme in the interviews: she felt she should not expect to know how students would think about something, nor should she impose her way of thinking.

Dawn felt that the second and third questions provided “a little bit of context” for the third question, on the last line of the story. By the last question, “Dawn said she meant “[H]ow is [the final line] tied to the rest of the story?” However, she noted that she had not scaffolded students toward that question. She said:

Still no questions really about what change happened, how did he change, why did he change, and then go into why is the final line significant, ‘cause it’s about him becoming a young man, rather than a boy…. 
At the same time, Dawn began thinking about the story in relation to the course theme—the journey. Previously, this was just a short story we studied, focusing on plot and conflict. … So, there was no sort of coherence as far as how does this relate to the next story, other than the fact that it has a plot, and it may also have conflict.” Dawn therefore decided that the reading response questions, which were last, should
have preceded the questions, as a ‘Minds On’ activity to prepare students for plot analysis and as an explicit way of linking the story and personal experience to the journey archetype (Figure U.3).

The reader response questions became ‘Minds On Writing’ (Figure U.4). Students were primed for this activity by watching a short documentary about a teenager who overcomes a disadvantaged childhood and changes the trajectory of her life. The prompts used language that explicitly positioned the oral discussion of the documentary as a real-life example of the journey archetype. The free-writing focused on the personal quality illustrated by the documentary (perseverance) and connections to the short story and Freedom Writers, a film students had viewed.

Instead of answering questions about plot and character as a post-reading activity, students now collaboratively completed an Agenda Structure (Figure U.5). Dawn’s insight was that the language of Agenda/Narrative Structure can easily be rephrased for students to discipline-specific language used in class. Thus students ‘covered’ setting, character, plot elements, and conflict—without answering a series of questions. The chart still required students to do close reading and to support notes with quotations. The chart also re-presented the story as a whole, rather than as fragmented according to element. Finally, Dawn noted that the structure allowed students to think in original ways about the story. She said,

I can’t believe how task-oriented they are, and how absolutely different their agendas are.

So there’s very unique thinking going on as they use these structures to ask questions and answer questions about the story.
"Through the Tunnel" by Doris Lessing INSTRUCTIONS: fill in the blanks below with appropriate relevant descriptions and quotations from the story.

<table>
<thead>
<tr>
<th>CHARACTER SETUP</th>
<th>CHARACTER</th>
<th>MOTIVATING INCIDENT</th>
<th>GOAL</th>
<th>CONFLICTS AND COMPLICATIONS</th>
<th>CRISIS</th>
<th>RISING ACTION</th>
<th>CLIMAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character setup: This is the list of notable or significant character and personality traits of both the protagonist and antagonist and any minor characters.</td>
<td>Characters: These are the 'players' in the plot – the protagonist (the main character), the antagonist (the character who works against the main character) and the minor characters.</td>
<td>Goal setup: This is the MOTIVATING INCIDENT: the event that causes the character to do what he or she does, so the plot takes the path it does.</td>
<td>GOAL: This is the character’s goal in the story. This is what the character wishes to achieve or overcome (for better or worse), whether they acknowledge it or not.</td>
<td>PROBLEM SETUP: These are the CONFLICTS (ongoing struggle between two opposing forces) and COMPLICATIONS (smaller problems that get in the way of the characters resolving their crisis).</td>
<td>PROBLEM: The CRISIS is the largest problem the character encounters. The problem creates the situation in which the character must set a goal. (Once the goal is set, the problem no longer exists.)</td>
<td>SOLUTION SETUP: This is the series of actual steps the main character takes in order to resolve the crisis.</td>
<td>SOLUTION: This is the outcome of the character’s solution set up. The CLIMAX is the resolution of the CRISIS for better or worse.</td>
</tr>
</tbody>
</table>

WHERE Places where the major and minor actions occur

WHEN The time period and time lapse of the story.

(Original printed on 11 x 17” paper, landscape. I retyped the handout to increase legibility. The image above is disproportionate: it should be wider and the blank row much larger, for note-taking)
In this version (Figure U.6), Dawn poses one question—which students now snap and put into a T-chart. Students work individually and write up their T-chart as a paragraph (including specific examples and quotations, most of which are identified on the Agenda Structure. They were prepared for the Agenda Structure activity by a task on the film Freedom Writers, in which they traced character change.

**THINK:** Put yourself in Liz Murray’s shoes for a minute: Think about what Liz Murray’s ordinary world would have been like, and what it took to change the path her life was following.

**DISCUSS:** What motivated her to accept a different call rather than that of her parents? What personal characteristics did it take her to get out of her ordinary world and cross the threshold into a new life?

**FREE WRITE about perseverance.** What is your definition of it? What does it have to do with the hero’s journey? What other qualities do you need to move successfully from the ordinary world to the special world?

Can you draw any parallels to the film Freedom Writers or “Through the Tunnel”?

**C. AFTER READING ACTIVITIES:**

“Through the Tunnel” is a story with a very strong plot line. Using the agenda structure given to you, identify Jerry’s goal and the elements of plot — motivating incident, conflict, complications, crisis, climax and conclusion. Use direct quotations to show specifically each element in the story. Be sure to use correct citations (author, “title” page #) for each.

**D. READ, SNAP, MATCH AND ANSWER THE FOLLOWING QUESTION:**

Use the T-chart on the back to help plan your answer.

At the end of the story Jerry thinks: “It was no longer of the least importance to go to the bay.” (Lessing 157) **Why is this final line significant?**
APPENDIX V: Keith: Student’s essay outline (excerpt)

Poetry Essay Outline for “The Road Not Taken” By: Robert Frost
Essay written by:

Introductory Paragraph

Topic Sentences:

✓ Robert Frost bet only one out of ten readers knew the actual meaning of his poem “The Road Not Taken”.
✓ Robert Frost was almost 40 years old when his first volume of poetry was published.
✓ Robert Frost is also the winner of the Pulitzer Prize for Poetry 4 times.
✓ Robert Frost’s belief was that a poem should begin in delight and end in wisdom.

Method of Development:

1. Diction is used by Frost in reference to the sigh in the 4th stanza. This sigh is implied in a negative way which creates regret and depression.
2. Pathos is used to create pity for the character in the poem when Frost writes, “Sorry I could not travel both” and “I doubted if I should ever come back”.
3. Diction is used in the title of “The Road Not Taken”, as it implies regret and reflection regarding those decisions.

Thesis: In Robert Frost’s poem “The Road Not Taken”, Frost creates a negative tone which reflects the difficult choices humans make in life.

Paragraph Two

Point to Prove: Diction creates a negative tone when Frost sighs in the 4th stanza.

Topic Sentence:
- A sigh has two possible interpretations, one of happiness and the other of regret.
- In the final stanza it is hard to tell the tone of the sigh.
- However, after analyzing the entire poem and the building negative tone the reader is quick to realize that the sigh is most likely one of regret.

Lead: Robert Frost uses a sigh in the final stanza, he writes:

Primary Source Quotation: “I shall be telling this with a sigh” (Robert Frost-The Road Not Taken)

Exit: This sigh is crucial to poetic interpretation.
- The sigh sets up a tone of regret and uncertainty.
- Regret and uncertainty is created because the entire poem is written in an underlying negative tone.
- Since the poem is about the choices we make in life, and the sigh creates a negative tone, it is clear the
APPENDIX W: Keith: Essay marking scheme

ENG 2DE: Formal Essay Evaluation

Name:

<table>
<thead>
<tr>
<th>Elaboration: /20</th>
<th>Structure: /20</th>
<th>Transitions: /5</th>
<th>Leads and Exits: /5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of thesis:</td>
<td>Style of a Formal Essay: Intro paragraph outlines thesis and method of development. Body paragraphs mirror Method of Development. Paragraph structure is: Excellent Good Poor Precise formal academic dictio. Conclusion skillfully reinforces thesis &amp; main points of proof &amp; leaves reader with a thought-provoking statement about topic as a whole. Conclusion does not adequately reinforce thesis &amp; main points of proof &amp; does not leave reader with a brief statement about topic as a whole.</td>
<td>Paragraphs have transitions: Always Sometimes Rarely Where appropriate transitions are used to lead the reader from one sentence to another. Always Sometimes Rarely</td>
<td>Examples or quotations and/or paraphrases are integrated: (Lead, quotation/example/paraphrase, explanation) Consistently Sometimes Rarely Each paragraph has a topic sentence Each paragraph is tied back to the thesis</td>
</tr>
<tr>
<td>Superior: Numerous (more than 3) all support the thesis well All have excellent explanations regarding how each one supports the thesis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good: Three All support the thesis Adequate explanation regarding how each one supports the thesis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor: Less than three Explanations do not adequately explain how each one support the thesis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argument: Convincing, logical, highly effective arguments. You state ideas that you don’t prove or explain. Little or no elaboration and development of simplistic ideas.</td>
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<td></td>
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</tr>
</tbody>
</table>

MLA FORMAT:
Title Page Page Numbering Citing Sources Punctuation Works Cited Page Double spaced Grammar/Syntax/ Punctuation Nearly flawless spelling and grammar Excellent sentence structure Verb tense is consistent, likely present tense The flow of ideas was never interrupted due to mechanical errors
**Documentary Film Agenda:**

*How do A Time for Justice and Walmart: the High cost of Low Price exhibit the triumph and failure of the popular conscience?*

<table>
<thead>
<tr>
<th>Agenda Structure</th>
<th>Filmmakers Set-up</th>
<th>Character</th>
<th>Goal Set-up</th>
<th>Goal</th>
<th>Problem Set-up</th>
<th>Problem</th>
<th>Solution Set-up</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark's prompts (adapted)</td>
<td>Filmmaker's bio, credentials, experience, Critical commentary, Characteristics of documentary</td>
<td>Identify film title, director, producer, subject matter</td>
<td>What is motivating the film maker?</td>
<td>What is the thesis the film maker presenting to the audience?</td>
<td>Identify techniques for disposing of opposition arguments used in the film</td>
<td>What issue has the film maker chosen to bring to light?</td>
<td>List the methods of development used by the film maker. Quote specific examples.</td>
<td>Evaluate the success to which the film maker responsibly presents subject matter to the audience.</td>
</tr>
<tr>
<td>Understanding Media Text &amp; Understanding Media Forms, Conventions, and Techniques Overall (OE) &amp; Specific (SE) Expectations (Media Studies Strand)</td>
<td>OE: demonstrate an understanding of a variety of media texts</td>
<td>SE: identify conventions/techniques &amp; how they convey meaning &amp; affect audience</td>
<td>SE: interpret texts for overt &amp; implied messages</td>
<td>SE: identify conventions/techniques &amp; how they convey meaning &amp; affect audience</td>
<td>SE: interpret texts for overt &amp; implied messages</td>
<td>SE: evaluate effectiveness of communication &amp; achievement of purpose. Identify &amp; explain different audience responses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Documentary Film Agenda:**

How do *A Time for Justice* and *Walmart: the High cost of Low Price* exhibit the triumph and failure of the popular conscience?

<table>
<thead>
<tr>
<th>AGENDA STRUCTURE</th>
<th>FILMMAKERS SET-UP</th>
<th>CHARACTER</th>
<th>GOAL SET-UP</th>
<th>GOAL</th>
<th>PROBLEM SET-UP</th>
<th>PROBLEM</th>
<th>SOLUTION SET-UP</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding Media Forms, Conventions, and Techniques &amp; Creating Media Texts</td>
<td>OE: demonstrate an understanding of a variety of media texts</td>
<td>OE: demonstrate an understanding of a variety of media texts</td>
<td>SE: explain how texts are created for particular purposes &amp; audiences</td>
<td>OE: create a variety of media texts for different purposes &amp; audiences, using appropriate forms, conventions, &amp; techniques</td>
<td>SE: identify conventions/techniques &amp; how they convey meaning &amp; affect audience</td>
<td>SE: describe the topic, purpose, &amp; audience select a media form to suit the topic, purpose, &amp; audience</td>
<td>SE: describe strategies used &amp; explain how these strategies can help improve as media interpreters &amp; producers</td>
<td>SE: identify skills in listening, speaking, reading, &amp; writing that help them interpret &amp; produce media texts</td>
</tr>
</tbody>
</table>