

**LEARNING AT THE SPEED OF LIGHT: DEEP LEARNING AND  
ACCELERATED ONLINE GRADUATE COURSES**

by

Anastasia M. Trekles

ROD SIMS, PhD, Faculty Mentor and Chair

KIMBERLY RYNEARSON, PhD, Committee Member

CHARLOTTE REDDEN, PhD, Committee Member

Feranda Williamson, PhD, Dean, School of Education

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## **Abstract**

An increasing number of university programs, particularly at the graduate level, are moving to an accelerated, time-compressed model for online degree offerings. However, the literature revealed that research in distance education effectiveness is still confounded by many variables, including course design and student approach to learning.

Particularly in graduate-level coursework, it is essential that students gain deep, expert-level understanding within their given fields, but how accelerated programs can best serve this need has remained largely unexplored. The purpose of this investigative, embedded single-case study was to explore instructional design strategies and characteristics of online, asynchronous accelerated courses and students' choices of deep or surface learning approaches within this environment. Through qualitative exploration of data from the Revised Study Process Questionnaire, student interviews, and course design analysis of an online, accelerated master's program in educational administration, it was found that these adult learners overall approached learning quite deeply. As an implication for program and instructional designers, course activities that were engaging, hands-on, practical, and collaborative were found to encourage students to adopt deeper approaches more often. When courses were consistent and user-friendly students were able to adopt routines that allowed them to complete coursework in the limited time that they had, given their many professional and personal obligations. However, when due dates were changed frequently, or when too many exams or less clear and engaging projects were given over those that were more complex and authentic, students tended to adopt more surface approaches to learning.

## **Dedication**

Many people stood behind me to help make this work possible, including my parents, Bob and Wendy, and many beloved colleagues including Helen, Pam, Bob, Lynn, Emily, and Brandi. Without the many people in my life who have supported me during my doctoral journey, this work may never have come to fruition, so I thank all of them deeply for their support.

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## **CHAPTER 1. INTRODUCTION**

### **Introduction to the Problem**

Distance education is one of the most prevalent and important trends in education today. At all levels, learners expect to be able to work on assignments and projects anytime, anywhere, and far beyond the walls of a traditional classroom (Johnson, Smith, Willis, Levine, & Haywood, 2011; Picciano & Seaman, 2008).

Johnson et al. (2011) noted that new technologies such as tablet computers have allowed this trend to expand exponentially toward ever more innovative and sophisticated mobile learning opportunities. Taking education “on the road” has become commonplace, as illustrated by the growth in online versus traditional enrollment at a rate of nearly ten to one since 2003 (Allen & Seaman, 2010). Many prospective distance learners have also sought out accelerated or intensive academic programs for degree completion, which require far less completion time than traditional programs (Johnson, 2009). Millions of people are now learning online and at faster rates than ever before, but are they learning as well, or better, than they have in more traditional settings?

As a science of the development of learning experiences, instructional design theories and models have had an extensive impact on the distance education sphere. Merrill (2002) noted that the large array of theories that have been proposed over the years all have value, and that many share core concepts related to the methods and

strategies used to design instruction, assessment, and supporting media. One of the primary concepts that instructional design theories share is the goal of helping learners achieve the objectives set before them effectively, in any learning endeavor. In other words, regardless of the instructional context or setting, instructional design principles apply anytime there is a desire to increase learners' knowledge. This concept is at the heart of the instructional designer's specialization and core competencies.

Within distance education settings, however, observing whether learners are meeting given objectives is no simple proposition. When students engage in online coursework, are they completing it to the instructor's specifications merely to achieve a grade or particular extrinsic goal? Or, are they truly engaging deeply in the content and gaining intrinsically valuable knowledge? Research shows that graduate education has the ability to enhance critical and higher-order thinking about specialized topics, and those pursuing advanced degrees typically seek such qualities (Clotfelter, Ladd, & Vigdor, 2007; Wier, Stone, & Hunton, 2005). Yet, the movement toward accelerated coursework allows students to transcend both time and place, allowing learners the freedom to work more quickly toward their desired goals (Pastore, 2010; Seamon, 2004). However, regardless of the instructional design of such coursework, deep learning of program objectives and the approaches learners take to get there may be difficult to assess properly, as learners may not be given enough time to adequately internalize course materials.

Upon consulting the literature on instructional design, distance education, deep learning, and accelerated coursework, it is clear that more investigation is needed to

fully understand the complex interplay that occurs between learners, materials, and time in online graduate programs (Biggs and Tang, 2007; Johnson, 2009; Seamon, 2004; Shachar & Neumann, 2010; Tatum, 2010; Rafferty & Lindell, 2011; Wlodkowski & Ginsberg, 2010). In particular, the perspectives of the learners and the influence of course design characteristics on their ability and motivation to learn deeply in accelerated distance learning environments appear to be missing from much of the literature (Bekele & Menchaca, 2008; Bernard et al., 2004; Shachar & Neumann, 2010). Learning approach, or how deeply and intently learners engage with a given task, plays a significant role in the development of deep learning, and this facet of the learning process is also still not understood completely (Biggs & Tang, 2007). In order to lend further insight and to perhaps inform future accelerated online program development, this study explored the dynamics between learning approach, time, and online instructional design. For graduate programs in particular, this study's results may provide guidelines for creating coursework that leads learners toward deeper levels of expertise acquisition, even in light of the challenges that accelerated learning can bring.

### **Background, Context, and Theoretical Framework**

Literature in distance and deep learning reveals several areas where additional information is needed about the relationship between accelerated online course design and the development of deep learning. A brief review of several important works, including Bernard et al. (2004) and Shachar and Neumann (2010) shows that there are still significant gaps in understanding the instructional design of accelerated online coursework and how students develop deep and expert-level learning approaches. While

quantitative studies are often able to establish relationships in more absolute ways, qualitative research is inductive and often better suited to research of the human experience (Baeten et al., 2010; Savenye & Robinson, 2005). Because of the independent nature of distance learning, motivation, and learning approach, qualitative methods are thus be well-suited to investigate the instructional design theories and practices involved in promoting deep learning approaches online.

Biggs (1987) described a Presage-Process-Product model of educational events, where learning, or the Product, can be impacted by prior knowledge, ability, and situational factors at the Presage stage, as well as motivation and available learning strategies at the Process stage. Therefore, the approaches learners take to any individual learning event, such as a course project, assignment, or exam, may tend toward more rote, surface-level approaches or more thoughtful, deeper approaches, as influenced by those Presage and Process factors that in turn dictate the quality, or depth, or the learning product or outcome. In the online realm, more individual factors may come into play than they might in the face-to-face classroom environment, however, as it is far more difficult for a teacher to diagnose when students are having trouble understanding concepts, and individual factors related to work and home duties may be more likely to interfere with study (Baeten, Kyndt, Struyven, & Dochy, 2010; Wang, Peng, Huang, Hou, & Wang, 2008; Wlodkowski & Ginsberg, 2010). Whether learners adopt a surface approach to simply “pass” or whether they adopt a deep approach that allows them to fully understand course materials may be influenced by a number of variables, and it is important to understand these variables if one is to understand how the deep, expert-

level learning expected of graduate learners in particular (Wier et al., 2005) is to be promoted through online course design.

Furthermore, Johnson (2009) and Rafferty and Lindell (2011) indicated that more research with specific regard to accelerated online courses and student success is warranted. While Seamon (2004) provided evidence that students may not retain information in accelerated courses as well as they might in traditional-length ones, Johnson (2009), Raines (2009), and Merrill (2002) noted that when learning opportunities are designed strategically around tasks and problems, students may engage more deeply through application and meta-analysis tasks. Student-centered activities such as problem-based learning provide particular opportunities for deep engagement (Bekele & Menchaca, 2008), although the vast majority of evidence of its effectiveness is also quantitative in nature, and both Bekele and Menchaca (2008) and Shachar and Neumann (2010) have questioned the design of many available studies. Romero and Barberà (2011) also indicated that much quantitative research of learners' time usage fails to take into account individual differences in terms of flexibility and quality of time spent in study. Additional research is needed to point the way toward more complete conclusions regarding these issues, as well.

As a science of the development of learning experiences, instructional design theories and models have had an extensive impact on the distance education sphere. Merrill (2002) noted that the large array of theories that have been proposed over the years all have value, and that many share core concepts related to the methods and strategies used to design instruction, assessment, and supporting media. One of the

primary tenets that instructional design theories share is the goal of helping learners achieve the objectives set before them effectively, in any learning endeavor. In other words, regardless of the instructional context or setting, instructional design principles apply anytime there is a desire to increase learners' knowledge. This concept is at the heart of the instructional designer's specialization and core competencies.

Within distance education settings, however, observing whether learners are meeting given objectives is no simple proposition (Biggs & Collis, 1982). When students engage in online coursework, are they completing it to the instructor's specifications merely to achieve a grade or particular extrinsic goal? Or, are they truly engaging deeply in the content and gaining intrinsically valuable knowledge? Research has shown that graduate education has the ability to enhance critical thinking and higher-order thinking about specialized topics (Clotfelter et al., 2007; Wier et al., 2005), and those pursuing advanced degrees typically seek such qualities. Yet, the movement toward accelerated coursework allows students to transcend both time and place, permitting learners the freedom to work more quickly toward their desired goals (Pastore, 2010; Seamon, 2004; Wlodkowski, 2003). However, regardless of the instructional design of such coursework, deep learning of program objectives may be difficult to properly assess, as learners may not be given enough time to adequately internalize course materials.

The varied findings regarding the effectiveness of online and accelerated learning (Bekele & Menchaca, 2008; Bernard et al., 2004; Johnson, 2009; Pastore, 2010; Seamon, 2004; Wlodkowski, 2003) clearly indicate that there is still far more to be

understood regarding the most effective instructional design practices in distance education to promote deeper approaches to learning, especially with regard to accelerated online programs. Following previous studies that have explored dimensions of the interaction between delivery mode, timeframe, and learning achievement (Kirtman, 2009; Rafferty & Lindell, 2011; Seamon, 2004), the current study presumed that it was valuable to the body of knowledge in instructional design for distance education to study how students participating in online accelerated programs adopt deep learning approaches in order to reach the levels of expertise expected of them.

Biggs and Tang (2007) noted that as learners reach higher levels of understanding, they adopt more advanced approaches to learning, allowing them to make clearer relationships between ideas and draw abstractions in order to further their understanding and application of ideas. However, the development of such expertise can take time as cognitive schemata develop and mature with regard to the subject and its related parts (Biggs & Collis, 1982; Bransford, Brown, & Cocking, 2000). This study explored whether graduate students in accelerated coursework typically adopted deep or surface learning approaches, and what roles time and design of course structures may have played in this process.

A case study approach with multiple embedded units of analysis was used in order to explore more deeply the experiences of several graduate students and the methods they used to understand course concepts and complete given work, as measured by interview techniques and the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) (Biggs, Kember, & Leung, 2001), which sought to answer the first research

question. The instructional design characteristics of the case study participants' actual courses was also examined and measured according to the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2008) and Merrill's (2002) first principles model, allowing comparisons between student learning approaches and instructional design elements in order to answer the second research question.

### **Statement of the Problem**

An increasing number of university programs, particularly at the graduate level, are moving to an accelerated model, where time is compressed to help adult learners achieve necessary skills and credentials at a quicker pace (Rafferty & Lindell, 2011; Wlodkowski & Ginsberg, 2010). Particularly in fields such as nursing and education, the accelerated model of course delivery has become quite popular in recent years. Since the goal of many such programs is to develop higher levels of learner expertise that can be put into practice immediately, it is important to ensure that deep learning of skills and knowledge is evoked, even when time is at a premium (Biggs, 1987; Biggs & Tang, 2007; Clotfelter et al., 2007; Rafferty & Lindell, 2011; Wier, 2005).

However, while past research has shown that deep learning outcomes are certainly achievable in distance learning settings, meta-analyses from Bernard et al. (2004), Bekele and Menchaca (2008), and Shachar and Neuman (2010) noted that course design appeared to be a confounding variable in a wide range of distance education studies. For instance, while Bekele and Menchaca (2008) indicated that there were many available studies to choose from in conducting their needs analysis, many different methods to achieve learning objectives were used in each of them. Even

though gains in learning may have been present, these studies are difficult to compare directly, as course design and delivery may have played important, but unaccounted for, roles in students' learning, as well as their motivations and approaches to study.

Similarly, Shachar and Neumann (2010) noted that a wide variety of factors continue to influence research in distance education, particularly when it is compared to face-to-face modes of delivery. As technology improves, the methods that can be used to teach with it become that much more diverse and sophisticated, which can impact both the online and face-to-face environments. Controlling for method and characteristics of course delivery is a difficult venture for many researchers, particularly with regard to external validity and generalizability beyond the selected sample in quantitative methods of research.

Operationally, the term "accelerated programs" within the scope of this study refers to any program where program completion takes less time than that of a conventional or typical university program in order for the learner to attain credits or degrees (Wlodkowski, 2003). Further, "accelerated courses" refer to individual courses of study within an accelerated program, which typically address the same course outcomes, but are offered within a span of time that is compressed 25% or greater when compared to conventional semester-length courses (Pastore, 2010). For example, within a university where degree programs are typically completed in four years, with semesters lasting sixteen weeks, an accelerated program may offer a student the opportunity to finish in three years or less, with semesters that last six to eight weeks.

Within accelerated contexts where time for learning is compressed and must be maximized for best results, the design of learning materials and assessments may have an even greater impact on deep learning approach and acquisition, and this complex interplay between time, learning, and course design requires additional research for greater understanding (Chan & Chan, 2010; Gijbels, Coertjens, Vanthournout, Struyf, & van Petegem, 2009; Rafferty & Lindell, 2011). Further complicating this area of educational research is the diverse nature of accelerated students themselves, and Driessnack, Mobily, Stineman, Montgomery, Clow, and Eisbach (2011) have shown that these students tend to be significantly different from other types of online learners. These learners tend to be more mature, have job and life responsibilities beyond school, and are interested in how their studies will directly impact their professional practice and their ability to earn promotions or other work-related entitlements (Driessnack et al., 2011). They are not, in other words, “blank slates,” nor are they always interested in learning for learning’s sake. These learners expect results, in as short a time as possible. Balancing the learners’ demands with well-structured course designs ensure that they not only learn how they want, but also are stimulated to engage deeply in what they need to understand in order to become successful advanced practitioners in their fields.

Additional research from a more holistic approach that goes beyond quantitative data such as test scores and grades can thus reveal greater insight into how students approach deeper, expert-level learning in these online, accelerated environments that have come into such high demand (Behar-Horenstein & Niu, 2011; Biggs & Tang, 2007; Flyvbjerg, 2006; Merriam, 1998; Romero & Barberà, 2011; Wlodkowski & Ginsberg,

2010; Yin, 2008). As Yin (2008) indicated, case studies attempt to illuminate the decisions and actions that individuals make, and the processes they use to get there. In understanding the processes and approaches to learning that learners in accelerated programs use to reach the levels of expertise expected of them, university program developers and professors will have greater insight into instructional design and best practices as they continue to move forward into an age where accelerated distance education is becoming the norm. This study investigated and interpreted the insights from analysis of course designs as well as the experiences of actual learners who have worked in accelerated online course environments.

### **Purpose of the Study**

The purpose of this investigative case study was to explore instructional design strategies and characteristics of online, asynchronous accelerated courses and students' choices of deep or surface learning approaches within this environment. The approaches and experiences of learners in accelerated courses was explored in order to understand the learner's perspective on deep learning in such environments, and the courses themselves were compared to these experiences. While learning approach and outcome may be influenced by many factors (Biggs, 1987; Entwistle & Peterson, 2004; McCune & Entwistle, 2011), the complexity of the learning process as a whole can be illuminated through discussions with learners, and themes related to time, prior knowledge, motivation, and course design can be delineated more clearly. From identifying and analyzing such themes, a greater understanding regarding the influence of course design on student approaches to learning has been generated, helping to fill a gap identified by

many previous studies in distance education and learning achievement (Bekele & Menchaca, 2008; Bernard et al., 2004; Shachar & Neumann, 2010). The study attempted to build upon previous knowledge gained about online and accelerated course design, and provided a stronger focus on the perspectives of learners and their approaches to deep learning of concepts presented in online graduate-level coursework.

In addition, the case study went beyond quantitative measurements, providing more complete and multifaceted insight into the nature of accelerated distance environments, which is of interest to researchers in higher education in particular, as accelerated programs become increasingly more popular and commonplace (Behar-Horenstein & Niu, 2011; Biggs & Tang, 2007; Flyvbjerg, 2006; Romero & Barberà, 2011; Wlodkowski & Ginsberg, 2010). Because learners' experiences are individualized, particularly in the online realm, it was found appropriate to analyze learning approach phenomena from within a particular bound context, allowing for a greater understanding of the presage and process factors that may influence an individuals' approaches to learning in the accelerated online realm, which may in turn influence how and whether deep learning evolves (Biggs, 1987; Biggs & Collis, 1982; Flyvbjerg, 2006; Merriam, 1998). Learning in the online environment is often highly personal for each individual; therefore, the adaptive and descriptive nature of case study research was useful in attempting to answer the research questions for the proposed study.

Lawler (2002) further indicated that qualitative research allows for a means to explore the participants' worlds and their places within it, although it is also important to

note that people are interpretive instruments rather than transparent messengers. Their stories are told through a contextual and cultural lens, and this study will take the responsibility of analyzing how these experiences fit together with measures of learning approaches through the Revised Study Process Questionnaire (Biggs et al., 2001) and instructional design of participants' courses, overall producing a more holistic understanding of graduate-level learning in accelerated online coursework.

### **Research Questions**

Based on the above discussion, two central questions and four related sub-questions emerged. The research questions in this study sought to provide insight into the learning approaches of students in online accelerated coursework, and how the instructional design of such courses played a role in influencing those approaches. The two primary research questions worked concurrently to illuminate how learning approaches developed within the context of accelerated online coursework, based on the instructional design characteristics of the courses they encounter.

#### **Research Question 1**

*How do learners approach their learning in accelerated, asynchronous online graduate courses?*

Sub-questions include:

- How do learners come to select deep learning approaches as opposed to surface learning approaches in accelerated courses?
- How do learners describe their accelerated learning experiences in terms of

encouraging deep or surface learning approaches to within their chosen field of study?

## **Research Question 2**

*Which instructional design characteristics and strategies used in accelerated asynchronous online courses play a role in helping learners reach deeper levels of learning?*

Sub-questions include:

- What design characteristics appear to promote deep learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?
- What design characteristics appear to promote surface learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?

This study proposed to investigate how the characteristics of asynchronous online courses related to students' chosen learning approaches in accelerated graduate programs, using the theories of Biggs and Collis (1982), Biggs and Tang (2007), and Merrill (2002; 2009) as they relate to learning and instructional design. In addition, data on how learners in these programs described their experiences and impressions of instructional design effectiveness were gathered, allowing for themes to develop from the analysis of multiple data sources. Through providing illumination for these research

questions, this study contributed to a more complete framework for designing accelerated online courses that promote the deep learning and expertise sought after in graduate-level education.

The researcher delved deeply into the coursework and experiences of students within a multi-cohort accelerated master's program in educational administration serving 136 students, including conducted analysis of course designs in addition to data gathered through student participation in the R-SPQ-2F (Biggs et al., 2001) and follow-up interviews with a subset of participants. Case studies allow for the careful and detailed analysis of complex phenomena (Flyvbjerg, 2006; Merriam, 1998; Yin, 2008); thus, this method has provided deep insight and theory development related to learning approach in accelerated online environments. Experiments in education are also often very difficult to conduct while managing the many potential intervening variables present; Kember, Charlesworth, Davies, McKay, and Stott (1997) noted that case studies provide insights into educational methods and learner activities in naturalistic settings. Since it is clear that accelerated options are on the rise in many university programs (Penprase, 2012), the results of this study present several important lessons from those learners and educators who are already embarking on this path. Particularly when it is noted that graduates of master's and doctoral programs leave their programs as experts in their fields (Wier et al., 2005), it is crucial to understand the characteristics and practices that will best support learners toward deep learning and mastery, even when time for learning is compressed and work is given in an online format.

## **Rationale, Relevance, and Significance**

The practical implications of this research may be multifaceted, as many universities and colleges are now exploring accelerated online program offerings within many disciplines (Wlodkowski & Ginsberg, 2010). From business and education to the liberal arts and social sciences, a variety of programs are emerging that appeal to many students, particularly adult learners wishing to earn the requirements to change careers or gain a promotion in their current field in as little time as possible (Rico, Beal, & Davies, 2010; Wlodkowski & Ginsberg, 2010). While a good amount is understood about learner characteristics, the link between the learner and learning approach within the accelerated online arena could benefit from additional research insight.

The literature indicated that focusing on key concepts and multidisciplinary approaches rather than on surveying a wide breadth of content in such courses is useful, but it is still not clear to many accelerated online instructors as to how to accomplish this goal effectively (Lindsey, 2009; Wlodkowski & Ginsberg, 2010). By analyzing the connections between instructional design practices (Merrill, 2002; 2009) and students' approaches to learning (Biggs, 1987; McCune & Entwistle, 2011), the results of this study may provide instructors, program developers, and even students with new strategies and insights into how to foster graduate-level expertise within time-compressed courses. The study has shown that a more complete understanding of how learners approach given tasks and assessments within accelerated online graduate programs is important in devising a quality accelerated program, and that certain types of activities may be more effective in promoting deep learning acquisition than others.

## **Nature of the Study**

The case study was conducted as an embedded, single-case design (Yin, 2008) within an accelerated program in educational administration at a medium-sized, public university located in the Midwest United States. This program, which served as an overall unit of analysis or context for the study (Yin, 2008), has been in operation for over one year and serves 136 students at the present time, who are grouped within sixteen cohorts. These students formed another unit of analysis embedded in the study. Finally, another unit of analysis included each of the nine core courses in the program (excluding a capstone internship), each of which are five weeks in duration, allowing the program to be completed within fifteen months.

Students enrolled in the program within any of the cohorts were solicited to complete the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) (Biggs et al., 2001) to get an understanding of the learning approaches seen in students throughout all stages of the program. The R-SPQ-2F is an established measure of approaches learners take to learning, consisting of twenty self-report items to which learners respond based on a Likert-type scale. While the R-SPQ-2F is considered a quantitative measurement, the results will be interpreted based on their qualitative qualities. Rather, the administration of this brief test was intended to determine how and whether students felt that they employed deep learning motivations and strategies to their accelerated studies, which spoke directly to the first research question and sub-questions.

Due to the fact that a large number of students in the program under study were extraordinarily busy as adult professionals who work, raise families, and tend to an array

of other responsibilities, it was difficult to solicit a large number of participants for the study. However, 17 responded of the R-SPQ-2F, and of them, 5 consented to participate in a follow-up interview. Participation in all activities was entirely voluntary, and every effort was taken to ensure that selected interview participants represented the program's population as closely as possible, although it should be noted that qualitative research methods tend to bring with them some element of bias, regardless of the sampling level or system used (Merriam, 1998; Savenye & Robinson, 2005).

The case study approach allowed for first-hand understanding of learner experiences and the approaches they take to learning in their accelerated online coursework. By surveying the group as a whole and then concentrating on a smaller number of participants for further analysis through follow-up interviews, the study sought to examine student perspectives at various levels in order to construct thick descriptions and a more complete view of these students' learning approaches, including the impact the design of their coursework had on whether they chose surface-level or deep-level approaches (Boeije, 2002; Merriam, 1998; Yin, 2008). Each embedded unit of analysis, including multiple courses and multiple types of participant inquiry, provided further insight into the approaches to learning and experiences of accelerated online learners pursuing graduate-level credentials. When these individual insights were then compared through a constant comparative method (Boeije, 2002), the potential for theory-building and more complete understanding was enhanced.

Accelerated coursework examined, including assignments, assessments, and online study materials such as presentations and articles from all nine of the core

program courses, did not include any student information. They were instead inactive courses from prior terms, allowing the researcher to examine all learning materials carefully and without disruption or bias from student interactions that may be observed. Characteristics of each course were compared to experiences related through student interviews, painting a more complete picture of learning approach and the instructional design of accelerated courses in the case study. This analysis helped to illuminate the second research question, regarding how the instructional design of accelerated online courses related to the development of deep learning. Measurements of these characteristics will be made based on the work of Biggs and Collis (1982), Biggs and Tang (2007), and Merrill (2002; 2009), whose respective SOLO Taxonomy and Effective, Efficient and Engaging (e<sup>3</sup>) instruction rubric assisted in analyzing how course design characteristics and stated objectives were intended to lead to gains in higher-order learning and critical thinking. The resulting analysis of this data formed a more complete understanding of the instructional design of each course involved in the study, from the perspective of how it may promote deeper learning strategies according to established theories related to learning and instruction.

## **Definition of Terms**

### **Accelerated Programs**

Accelerated programs are any academic programs where program completion takes less time than that of a conventional university program in order for the learner to attain credits or degrees (Wlodkowski, 2003). Wlodkowski (2003) and Tatum (2010) indicated that accelerated baccalaureate programs may be completed in three years or

less instead of the typical four or more found at many universities, and accelerated master's courses may be completed in eighteen months or less as opposed to two or more years.

### **Accelerated Courses**

Accelerated courses are individual academic courses of study within an accelerated program, which typically address the same course outcomes, but are offered within a span of time that is compressed 25% or greater when compared to conventional semester-length courses (Pastore, 2010). A timeframe of twelve or more weeks is considered a typical semester for many colleges and universities (Johnson, 2009; Pastore, 2010; Wlodkowski, 2003). Accelerated courses range in actual length, but tend to be less than twelve weeks.

### **Approaches to Learning**

Approaches to learning are defined as the ways in which students go about academic tasks that in turn have an impact on the nature of their individual learning outcome (Biggs, 1987; Biggs & Collis, 1982; Biggs et al., 2001; Entwistle & Peterson, 2004; McCune & Entwistle, 2011). Based on Biggs' (1987) research regarding the Presage-Process-Product model of educational events, a learner's approach to learning in different contexts and situations may be different depending on many factors, including motivation and prior knowledge (Presage), as well as motivation and available learning strategies (Process). Approaches can be either surface-level or deep, and can be measured by instruments such as the Study Process Questionnaire (Biggs et al., 2001).

## **Asynchronous Online Learning**

Asynchronous online learning refers to any Internet-based system that allows students to log in and access lessons, communication forums, and assessments at times that are convenient to them, rather than learn at the same time and in the same place as other students (Appana, 2008).

## **Deep Learning**

The development of deep learning will be defined as the level to which a learner understands course topics, constructs meaning, and integrates knowledge and abstractions of concepts flexibly within existing schemas (Biggs & Collis, 1982; Bransford et al., 2000; Smith & Colby, 2007). Entwistle and Peterson (2004) described deep learning as the result of an approach that allows learners to see a broad picture of the topic, with the ability to relate ideas to prior knowledge and seek and evaluate evidence to reach conclusions. Stated course objectives that ask for such behaviors of learners will be the measure of how deep learning is evoked within the courses that will be part of this study.

## **Instructional Design Characteristics**

Instructional design characteristics refer to the outcomes, activities, and assessments prescribed as part of a course of study, and as guided by accepted research-based theories and models related to instructional design, or the systematic design, development, implementation, and evaluation of solutions to instructional and performance-based problems (Dick, Dick, & Carey, 2011; Merrill, 2002; Reiser, 2001).

## **Intended Learning Outcomes**

A term often used synonymously with the term “learning objectives” or “performance objectives,” intended learning outcomes (ILOs) are statements of what learners are expected to accomplish as part of a unit or study, such as an assignment or course module (Anderson & Krathwohl, 2001; Biggs & Collis, 1982; Biggs & Tang, 2007; Krathwohl, 2002). These statements typically describe behaviors that a teacher or evaluator expects to observe within certain conditions and to a given degree of proficiency, and can be classified in terms of their complexity and the level of deep learning required to fulfill them using taxonomies such as the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) or Bloom’s Taxonomy (Anderson & Krathwohl, 2001; Krathwohl, 2002).

## **Graduate-Level Coursework**

Graduate-level coursework refers to any university coursework or program beyond the baccalaureate level, including master’s and doctoral study. Wier et al. (2005) indicated that a graduate education prepares students with higher levels of expertise and critical thinking in their chosen field of study.

## **Surface Learning**

Surface learning will be defined as attainment of task requirements in order to pass an examination or complete an assignment, but does not translate into meaningful, deep, and complex schema structure development (Biggs, 1987; Choy, O’Grady, &

Rotgans, 2012). Biggs (1987) used rote memorization as a typical product of surface learning approaches.

### **Assumptions, Limitations, and Delimitations**

This study assumed that learner participants are not to be selected or rejected based on characteristics such as age, ethnicity, gender, or prior experience, although this data was recorded and considered for its potential usefulness during data analysis, as it helped to identify and contextualize the responses from interview participants in particular. This study also assumed that learners enrolled in accelerated online coursework possessed some manner of intrinsic or extrinsic motivation for participating in such a program, and that based on expressed terms of confidentiality, participants would provide truthful responses. Finally, this study assumed that accelerated courses under investigation possessed valid and measurable intended learning outcomes, and that courses matched the descriptions offered by the institution as part of an advertised degree program.

The researcher's perspective and personal bias is often considered an accepted limitation of qualitative research. Humans are fallible instruments of data collection, and pass information through their own personal filters just as much as research participants sharing their experiences and stories might do the same (Savenye & Robinson, 2005). Qualitative research raises unique concerns in ensuring reliability and validity due to the often personal, unique, and potentially biased nature of data collection and analysis (Quinton & Smallbone, 2005). In many cases, reliability and generalizability in qualitative research is considered poor, as most studies cannot be

duplicated under the exact same conditions, although many qualitative researchers minimize the relevance of reliability or generalization (Payne & Williams, 2005). In fact, researchers in instructional design (Clark, 1985) and accelerated coursework (Tatum, 2010) indicated that quantitative studies can exhibit just as many perceived flaws related to reliability, validity, and a failure to control for extraneous variables.

However, Pan and Tan (2011) noted that the use of a systematic and iterative process of analysis, such as analyzing multiple data types and comparing findings to one another in a constant comparative method (Boeije, 2002; Yin, 2008) can strengthen the reliability – or the extent to which the study can be replicated – of a case study design immensely by providing the exact steps that one can go through to attempt to replicate the data collection and analysis procedures. It was therefore found to be important to follow Pan and Tan’s (2011) framework, along with constant comparative methods of data analysis (Boeije, 2002; Merriam, 1998), throughout the study in order to maintain a higher degree of reliability. This included creating a thorough and complete thematic analysis within and across the different forms of data in order to construct rich, thick descriptions of phenomena and derived theories as found in chapters four and five.

As a notable limitation, the researcher has extensive experience with online course development, and has participated as both teacher and student in online coursework. Also, the researcher is familiar with current accelerated programs offered at the institution that is the subject of this study, although she has never taught courses within it, nor will she at any point in the future. These experiences, however, have granted the researcher with a certain amount of perspective and insight, as well as bias,

with regard to online course effectiveness and the acquisition of deep learning.

Maintaining an open mind and a strong focus on understanding accelerated online experiences strictly through the eyes of participants and through the lens of established instructional design theory was found to be essential in minimizing this personal bias throughout this study.

Yin (2008) noted that embedded single-case designs with multiple units of analysis may be subject to limitations if each unit is not cross-compared to each one another and to the greater unit of analysis that they all share. Care was taken to ensure that analysis was complete and performed at all levels. In addition, the sample of learners drawn for this study was from a medium-sized, public university, and consisted solely of learners enrolled in an educational administration master's program that is conducted online at an accelerated pace of five weeks per course. Each participant learner responding to the R-SPQ-2F (Biggs et al., 2001) and those involved in follow-up interviews provided information that could be explored in depth in order to understand how and whether deep learning approaches were adopted and how instructional design of courses may have played a role in the learning process.

Potential volunteer participants for questionnaires or interviews were solicited and recruited after determining that they were enrolled in the accelerated program. This ensured that participants had an adequate amount of experience with the program, so that they could converse about the subject more fully. Using all of the courses students have actually participated in, as opposed to other courses that may match the description of an accelerated, graduate-level online course, also strengthened internal validity

(Merriam, 1998; Vockell & Asher, 1995; Yin 2008). Furthermore, these courses, like the participants, served as a sample of the greater population of accelerated, asynchronous graduate-level courses. However, given that learners were volunteers and that they are from a specific, American university program, this may limit the generalizability of the findings of this study to other learning environments and cultural contexts.

### **Organization of the Remainder of the Study**

The remainder of this study is divided into four chapters. Chapter two investigated relevant literature related to accelerated and deep learning, online education, and the nature of the student experience in such settings. Chapter three discussed the research methodology for investigating student learning approaches and instructional design characteristics within accelerated online courses. This included a description of the theoretical framework guiding research methodology, the description of the sample and population, instrumentation, and data collection and analysis. Chapter four then reported on the data gathered during the study, presenting constant comparative analysis procedures and the themes identified. Finally, Chapter five presented a discussion and interpretation of the findings, including recommendations for further research in this area.

## CHAPTER 2. LITERATURE REVIEW

### Introduction to the Literature Review

This study attempted to illuminate two primary questions and related sub-questions involving the relationship between deep, expert-level learning as defined by Biggs and Collis (1982), Bransford et al. (2000), and Krathwohl (2002), and the design of asynchronous online courses offered for graduate study at an accelerated or compressed pace. Specifically, these questions were:

1. *How do learners approach learning in accelerated, asynchronous online graduate courses?*

Sub-questions include:

- How do learners come to select deep learning approaches as opposed to surface learning approaches in accelerated courses?
  - How do learners describe their accelerated learning experiences in terms of encouraging deep or surface learning approaches to within their chosen field of study?
2. *Which instructional design characteristics and strategies used in accelerated asynchronous online courses play a role in helping learners reach deeper levels of learning?*

Sub-questions include:

- What design characteristics appear to promote deep learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?
- What design characteristics appear to promote surface learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?

There are several areas of focus for the literature review. First, an understanding of deep learning, including how it is cultivated through instructional design and how learners achieve it, is of great importance to this study. Instead of merely examining whether students can attain the intended learning outcomes of a course in order to pass on to the next course or complete degree requirements, this study was primarily concerned with whether students were adopting approaches that allowed them to develop deeply focused expertise in topic areas of study. Such proficiency is often considered the hallmark of graduate study (Wier et al., 2005), as masters- and doctoral-level practitioners are typically considered or expected to be highly trained experts in their fields. Instructional design theory and related models, including the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) and Merrill's First Principles (2003; 2009), were analyzed to understand how accelerated online courses could be structured in order to foster deeper levels of learning in students.

In addition, while a great deal of literature exists about distance education methods, student characteristics, and learning effectiveness (Bekele & Menchaca, 2008; Bernard et al., 2004; Shachar & Neuman, 2010), it was important to look closely at studies related to accelerated programs and graduate education specifically. The available literature casts light on how such programs are conducted, what methods are found to be effective for both teaching and learning, and what particular characteristics students in such programs may possess (Cangelosi & Moss, 2010; Driessnack et al., 2011; Johnson, 2009; Pastore, 2010; Rafferty & Lindell, 2011; Seamon, 2004; Tatum, 2010). These studies also were analyzed based on methodological concerns and findings, and from this analysis, gaps in the research that still need to be addressed came into focus.

## **Theoretical Framework**

### **Deep Learning and Graduate Education**

How exactly are terms such as “critical thinking” and “deep learning” defined? Bransford et al. (2000) provided a thorough look at how people of all ages learn by analyzing and interpreting the most modern available research on the human brain, and theirs is a work that is still frequently referenced as an authoritative meta-analysis. Of particular interest to this study is Bransford et al.’s (2000) discussion of the differences between expert and novice understanding, and the strategies teachers can use to help learners develop expertise. Experts, defined as those with an advanced understanding of a particular topic, have been able to link new knowledge to prior knowledge in order to develop an advanced and complex understanding. They tend to be able to recognize

patterns and features of information about a subject much more readily, and can discuss nuances of the subject in highly organized ways. In addition, experts can flexibly select and use important aspects of their knowledge and relate them to a particular situation, adapting their approaches to new problems efficiently. Bransford et al. (2002) noted that advanced practitioners in a wide variety of disciplines and subjects, from teaching to mathematics to chess playing, exhibit these same characteristics.

In today's highly technological and information-rich society, being able to understand and create meaning is a hallmark of successful learning, particularly within higher education. At the graduate level, learners are considered approaching expert-level understanding of the key concepts and skills within their field, having undergone intensive study and had ample opportunity to apply and synthesize their knowledge (Clotfelter et al., 2007; Wier et al, 2005). Graduate learners also tend to be able to avoid and navigate bias about their topics of expertise better than non-experts, and tend to exhibit greater levels of intellectual curiosity about these subjects as well (Biggs & Tang, 2007).

However, defining and acquiring high levels of professional skill or the ability to problem-solve effectively is not necessarily a simple proposition, involving a wide range of concerns for learners and teachers in the design of lessons, courses, and programs. Both Biggs and Tang (2007) and Krathwohl (2002) suggested that defining learning goals across a broad spectrum, addressing skills, dispositions, and performances related both to subject matter and to thinking and reasoning activities, is key to helping learners develop into experts. In this way, learners have an opportunity to synthesize all schema

related to the subject, including the critical thinking and application skills necessary to translate theory into practice.

In their seminal work on the measurement of quality learning, Biggs and Collis (1982) drew upon developmental theories, such as that of Piaget, to understand how learners approached learning challenges. They maintained that the relationship between learner characteristics and teaching techniques was both highly complex and central to the adoption of surface or deep learning approaches, an assumption that carried through later work (Biggs, 1987; Biggs et al., 2001; Biggs & Tang, 2007). McCune and Entwistle (2011) also noted that deep learning is closely tied to an individual's disposition to develop understanding, which requires the use of strategies that promote deep learning.

Learners must also have motivation and alertness to the learning context in order to develop expert levels of skill in any subject. Even though there are many personal characteristics that may come into play when exploring individual motivation to learn, McCune and Entwistle (2011) agreed with other deep learning scholars such as Biggs and Collis (1982) and Bransford et al. (2000) that motivation is an important element, for without conscious and active effort, deep engagement in a subject is unlikely. Within the context of the classroom, including online environments, McCune and Entwistle (2011) indicated that the use of open-ended problems, collaborative activities, and other strategies that encourage learners to delve beyond the surface of a subject have been shown to foster deeper learning.

Experts regard knowledge as more than lists of facts and figures, and it is typically this level of learning that teachers at all levels wish to see in their students. Surface-level understanding and rote memorization do not allow learners to work and think flexibly about problems that they encounter, ultimately leading to people who are not capable of working effectively within their chosen fields. Bloom's Taxonomy (Krathwohl, 2002) and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) both provide a useful framework for assessing stated learning objectives, linking surface-level knowledge to the lower factual and conceptual ends of the taxonomy, and expertise to the advancement of metacognitive and abstraction skills. Bransford et al. (2000), along with Anderson and Krathwohl (2001), Biggs and Collis (1982), and Biggs et al. (2001), provided the study with a foundational definition of what expert, or deep, learning is and how instruction can be designed to enhance it.

### **Approaches to Learning and the SOLO Taxonomy**

The work of Biggs and his colleagues (Biggs & Collis, 1982; Biggs et al., 2001; Biggs & Tang, 2007) forms an important basis for understanding how learners approach and respond to tasks that require them to think deeply and at expert levels. The SOLO Taxonomy shares much with developmental theory, such as that pioneered by Piaget in studying the development of children, although Biggs and Collis (1982) recognized that SOLO levels were very unlikely to directly parallel Piagetian developmental stages, as differences in instruction, individualized testing, and learner motivations make achieving such ideals impossible. In terms of student responses on assessments, Biggs and Collis (1982) described the achievement of SOLO levels in terms of averages,

noting that classifications may vary depending on the teacher grading them. Different teachers or instructional designers may have varying ideas about the components of a task or the desired learner performances and interpretations of those performances, particularly if the task is complex.

Regarding the design of instruction, Biggs and Collis (1982) noted that many teachers have a difficult time teaching to the appropriate average SOLO level of the class. Obtaining some measure of SOLO analysis, such as by analyzing the results of a pretest, can show teachers where learners are so that they do not teach too far above their understanding (Biggs & Collis, 1982; Biggs & Tang, 2007). For instance, a group of learners working mostly at the prestructural level when it comes to a particular topic will not be likely to respond favorably to instruction at the extended abstract level.

Understanding SOLO levels and what each level represents is of central importance in analyzing the analysis of online course materials, as it will be essential to informing whether the available instruction is matched well with the SOLO levels of learners.

The SOLO Taxonomy is a response measurement – that is, one that measures how well learners respond to prompts following instruction (Biggs & Collis, 1982). In order to determine how a learner might be expected to respond, the SOLO Taxonomy can also be used to analyze the instruction itself, and specifically, the intended learning outcomes (ILO's) (Biggs & Tang, 2007). Because SOLO examines what Biggs and Tang (2007) refer to as the quantitative, or amount of detail, and the qualitative, or quality of detail integration with structural knowledge patterns, as primary aims of curriculum, it classifies attempts to both broaden and deepen knowledge. Creating

opportunities for deeper learning involves highlighting the qualitative aims of curriculum through developing matching ILO's and appropriate teaching methods. In order to understand the relationship between the SOLO Taxonomy, quantitative and qualitative aims of curriculum, and the understanding of deep learning as presented by Bransford et al. (2000), it may be useful to consult Figure 2.1. This figure includes a depiction of the relationship between SOLO levels (Biggs & Tang, 2007) and Bloom's Taxonomy levels (Anderson & Krathwohl, 2001), illustrating how learning outcomes can be written to evoke deep learning and expertise development within the upper strata of the taxonomies.

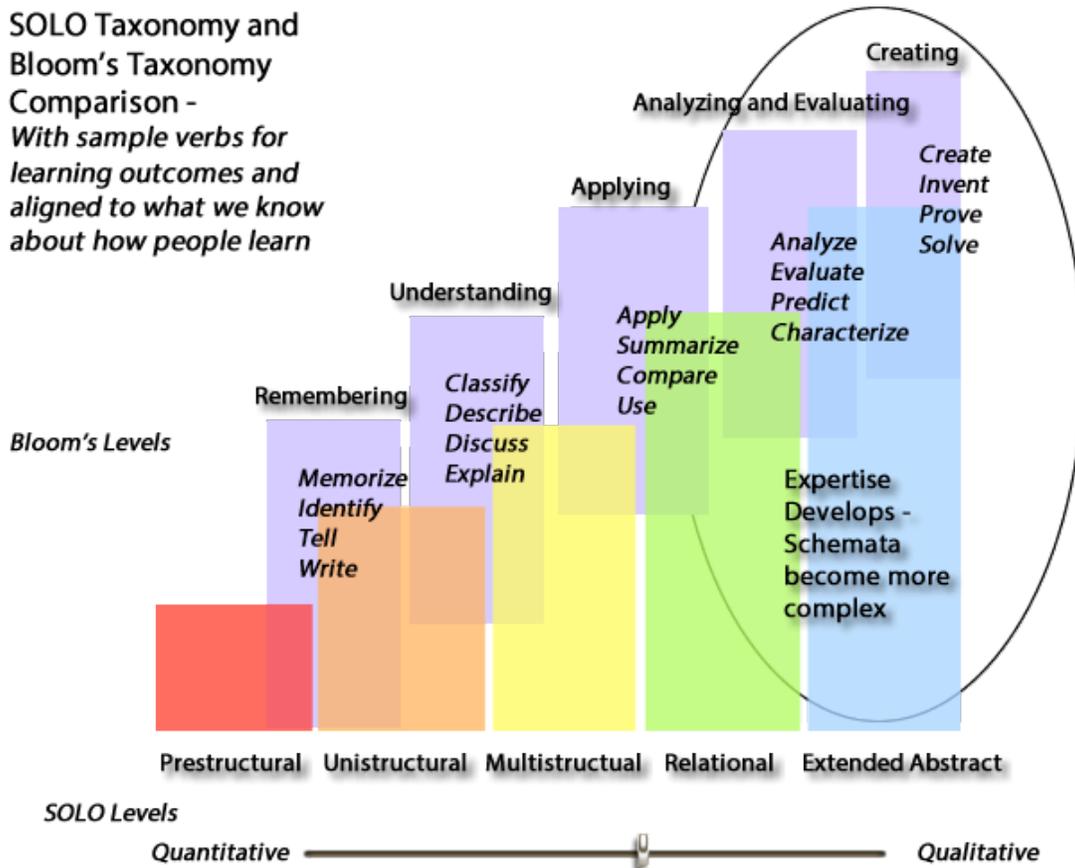


Figure 2.1. Comparison of SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) to Revised Bloom's Taxonomy (Anderson & Krathwohl, 2001; Krathwohl, 2002) with sample learning outcome verbs and indication of when schemata become more developed and curriculum moves from quantitative to qualitative phase, beginning at the Relational/Analyzing level (Biggs & Tang, 2007; Bransford et al., 2000).

Measuring attainment of SOLO levels is complex and often somewhat subjective based on teacher impressions and experience, the nature of the task, and the time given for learning and assessment (Biggs & Collis, 1982). In other words, measurement of SOLO level attainment is considered to be a judgment call rather than a specifically

dictated measure of evaluation. However, with the use of carefully written ILOs, it is possible to promote the development of deeper learning through asking students to complete more advanced activities and performances that correspond to the upper levels of the taxonomy (Biggs & Tang, 2007). To this end, deeper learning corresponds to higher-quality learning outcomes, whereas surface learning – or that which is not substantive or advanced – corresponds to lower-quality outcomes (Biggs, 1987; Choy et al., 2012). As a tool, the SOLO Taxonomy, combined with its companion, the Study Process Questionnaire (Biggs, 1987), can provide teachers and instructional designers with the ability to gauge whether learners are being given ample opportunity to develop deep and meaningful learning, and at the graduate level, this is of particular importance.

The Study Process Questionnaire, or SPQ, as originally proposed by Biggs (1987) has undergone at least one revision (Biggs et al., 2001) and much analysis over the years. It is considered to be a relatively weak predictor of student achievement scores, but its results can be used to understand achievement-related behaviors of students (Chamorro-Premuzic & Furnham, 2008; Choy et al., 2012). As a self-report of simple Likert responses to twenty items regarding how learners approach their assigned learning tasks, the Revised SPQ (R-SPQ-2F) (Biggs et al., 2001) provides students with the opportunity to describe their actions in response to given assignments and express their subjective experiences during the learning process. Such responses are useful for assessing whether learners are exhibiting behavior that will lead them toward deeper learning, as well as providing revealing insight as to the instructional design effectiveness of a course.

For example, if learners are never given the chance or the prompting to reflect on their learning, test themselves to ensure understanding, or simply are not presented with materials in an interesting and engaging way, they are unlikely to develop higher levels of expertise no matter how developmentally ready they may be to do so (Biggs, 1987; Biggs & Tang, 2007; Chemorro-Premuzic & Furnham, 2008). Within the context of online course development, learners are not working in the same time or place with the teacher and as such, must guide most of their learning on their own. Without prompts or cues to delve deeply into the material, surface approaches are far more likely to be used by such students, as they will begin to seek the quickest way to the goal of completing the course rather than taking the time to fully internalize what they are learning.

### **The Design of Instruction**

The development of expertise through appropriately designed learning outcomes and tasks has great implications for the overall instructional design of learning environments. Bransford et al. (2000) suggested that learner- and knowledge-centered strategies are far more likely to be able to develop expertise in students, as they allow for more culturally relevant connections to prior knowledge to be made. When students are encouraged to connect what they are learning to something directly relevant to them, they often are able to learn and retain knowledge at higher rates of success. For instance, Bransford et al. (2000) provided the example of a study of African American high school students connecting the everyday language that they use at home to the language they are asked to use in school. By helping them see the connections between

the two registers, they were much better equipped to develop a deeper conceptualization of academic literacy and voice.

Similarly, Baeten et al. (2010) found that student-centered approaches to teaching and learning can foster deep learning by encouraging students to participate more actively in online coursework. In a meta-analysis, they discovered that while such approaches give students an open-ended structure to explore topics more deeply, some students continued to learn only at surface levels. This indicates that the development of deep learning is a highly individual effort, influenced by many complex factors. Baeten et al. (2010) noted that everything from student-teacher interaction to attitudes toward the subject matter could play a role in how deeply students engage in online coursework. However, the quantitative nature of their meta-analysis is limited in providing an understanding of how these factors influence learning among unique individuals.

One of the most widely accepted recent theories of instructional design, Merrill's First Principles (2002), can be used to assess course elements and the approaches used in creating instructional objectives and activities. Merrill (2002) suggested that well-designed courses should feature each of the "first principles of instruction" (p. 45), which includes active engagement in real-world problems, activation of prior knowledge, demonstrations and application of new knowledge, and integration of new knowledge into learners' everyday practices would lead to successful development of meaningful learning. The real-world problem or whole task to be learned becomes something like a pebble in a pond (Merrill, 2007): the task leads learners to consider prior knowledge in order to diagnose the problem, identify the part-tasks or steps that

make up the whole, and move systematically through basic to more complex and authentic practice performances in order to eventually achieve the given intended learning outcome. As learners progress to the more complex part-tasks that make up the most challenging aspects of the whole-task, they receive demonstrations and opportunities to apply what they have learned in various authentic contexts (Merrill 2002; 2007). This allows learning to take shape gradually and more completely than if part-tasks were taught as isolated pieces of information, outside of real-world contexts that can help learners connect more deeply to what they already know. This approach to instructional design is focused on problems and tasks rather than simply on students, allowing for a more structured environment that leads learners carefully toward deeper levels of learning.

While the learner is still an important part of the equation, the additional structure of Merrill's (2002) model is less likely to lead to the inconsistencies in learning noted by Baeten et al. (2010). A recent design-based study by Swan, Matthews, Bogle, Boles, and Day (2012) helps to reinforce this, showing how implementation of an online course designed around specific intended learning outcomes (ILOs) and the frameworks presented by the Quality Matters group (Sener & Shattuck, 2006) and the Community of Inquiry constructivist model (Garrison, Anderson, & Archer, 2000) can improve the effectiveness of online instruction. Simply by redesigning an existing course around these frameworks and ensuring that ILOs were clearly stated and the driver of all activities, student performance improved significantly (Swan et al., 2011).

Additionally, Wang, et al. (2008) noted that specifying ILOs not only results in higher levels of performance, but were also linked strongly with learning motivation and self-efficacy, indicating that particularly in an online, self-directed environment, task-based ILOs are highly important to the learning process. As indicated by Biggs and Collis (1982), Bransford et al. (2000), Merrill (2002), and many other scholars on the subject of learning, motivation can play a vastly important role in the acquisition of deep learning, and both Swan et al. (2011) and Wang et al. (2008) show strong evidence that clear tasks and performance objectives can lead students down that path. Given the self-directed and sometimes even intimidating aspects of the online environment, including such carefully designed structure may prove even more beneficial to those taking accelerated or time-compressed coursework.

### **Accelerated Online Courses and Learners**

While the specific definitions related to accelerated or intensive education may vary in the literature, these terms typically refer to courses and programs that are shortened in duration, without changing the learning goals or the actual amount of work required of learners for completion (Rafferty & Lindell, 2011; Tatum, 2010). When the time required for learning is compressed, it can be of immense convenience to college learners, particularly adults who have jobs and other responsibilities that occupy a good portion of their normal day (Kasworm, 2008; Wlodkowski, 2003). The demand for programs to meet the unique needs of these students has risen dramatically over the past several decades, as certification requirements in certain fields change, and as the population becomes more diverse on the whole (Penprase & Koczara, 2009). With

accelerated graduate programs, adult learners can change careers or update important skills in order to meet fluctuating and ever-increasing societal and economic expectations.

On the other hand, many scholars have questioned whether students in accelerated courses can truly learn the same amount of information in less time than colleagues taking semester-length coursework. Indeed, in some situations, memory retention and transfer abilities may be limited when time for learning is reduced dramatically, particularly in certain kinds of learning and problem solving (Seamon, 2004; Tatum, 2010). Wlodkowski and Ginsberg (2010) noted that critics of accelerated and intensive learning programs indicate that compression of time typically equals sacrificed breadth and depth of intended learning outcomes, and in some cases they may even be correct in their assumptions.

Sweeping generalizations about such courses and programs, however, is inappropriate, as Wlodkowski and Ginsberg (2010) also noted that quality in education is neither consistent nor simple. Values, standards, goals, and criteria for success vary greatly between fields and between individual institutions, faculty members, and even students, so what works well in one setting may not work the same way for another. But, if it can be assumed that all courses, regardless of discipline, can be designed with Merrill's (2002) first principles and an understanding of the SOLO Taxonomy and deep learning approach (Biggs & Collis, 1982; Biggs & Tang, 2007) in mind, then it may yet be possible to define and ensure quality in a variety of settings, even if that quality may look vastly different depending on the field.

Quality and effectiveness of accelerated courses may also depend on the learners themselves. The way learners choose to spend their time on task, their motivations to learn, and even simply how well they understand how, when, and where to use new knowledge in the most effective way is often deeply rooted within the individual (Biggs & Collis, 1982; Bransford et al., 2000). Most models of instructional design teach that an important initial phase of the design process is an analysis of learners' characteristics, preferences, prior knowledge, and expectations when entering a learning situation (Merrill, 2002; van Merriënboer, Clark, & de Croock, 2002; Sluijsmans, Prins, & Martens, 2006; Dick et al., 2011). Designing for learners' unique needs can make a tremendous difference in course effectiveness, as preferred learning styles, existing knowledge and skills, and attitudes toward the subject matter can all be taken into account.

Students taking accelerated graduate coursework tend to share particular characteristics that are not shared by those taking semester-length courses. Research suggests that both students and faculty in accelerated programs noted important learner differences (Cangelosi & Moss, 2010; Driessnack et al., 2011; Johnson, 2009). In Driessnack et al.'s (2011) study, learners in accelerated courses seemed far more likely to help each other in the online discussion space, and they viewed themselves as different from colleagues in programs of a conventional, non-accelerated structure. They were also invariably concerned more with processes and practical knowledge than with theoretical content, as this was information they could use right away, and they exhibited a strong desire to learn new things during their courses, rather than simply

work through a number of readings and assignments that may or may not complement their previous experiences. Likewise, Cangelosi and Moss (2010) noted that faculty in accelerated coursework felt that they must be extremely prepared to teach, as students typically have a great deal of prior knowledge and are not afraid to question the authority of an instructor. Johnson (2009) also noted that learners tend to take responsibility for their learning more readily, are more focused, and overall far more motivated than those students in coursework lasting fifteen or sixteen long weeks.

### **Gaps in the Research**

In light of these findings, it may be reasonable to assume that course designs for accelerated learners should include more learner-centered activities and opportunities for learners to share what they know, which would appear prudent given the tendency of accelerated learners to be much more savvy regarding the foundational aspects of course concepts, and much more apt to benefit from practical, real-world applications (Driessnack et al., 2011). A learner-centered design model for accelerated courses is also in alignment with Merrill's first principles of instruction (2002), as well as with many other models and research in instructional design that stress immersion in real-world, task-centered problem solving and questioning methods (Jonassen, 1997; Kirschner & van Merriënboer, 2008; van Merriënboer et al., 2002).

In turn, these theoretical frameworks integrate well with deep learning theories proposed by Bransford et al. (2000), Krathwohl (2002), and Biggs and Collis (1982). By engaging learners in authentic learning situations, they have the opportunity to synthesize all of the skills and concepts that they have learned thus far, allowing them to

develop practice that in turn leads to the development of more extensive and complex schemata and expertise regarding the topic of study. Since this is something that accelerated learners already appear to crave and expect (Driessnack et al., 2011), the literature leads to the conclusion that in order for accelerated coursework to help learners reach higher levels of expertise in their chosen subjects, it must be task-centered, authentic, and cognizant of the diverse prior experiences and skills learners already possess.

However, there are still a number of questions left unanswered regarding course design and the facilitation of deep learning in the online environment. There exists a great deal of lingering uncertainty regarding whether students learn more deeply in online environments or traditional, face-to-face classrooms, and what pace or program length is most desirable (Baeten et al., 2010; Bernard et al., 2004; Seamon, 2004; Wlodkowski & Ginsberg, 2010). While the trends in K-12 and higher education show that distance education is growing at ever-increasing rates (Johnson, Smith, Willis, Levine, & Haywood, 2011; Picciano & Seaman, 2008), it is still somewhat unclear as to whether learners actually learn as well online. Practices like diploma mills, or awarding degrees for substandard work completed online (Piña, 2010), cast doubt on the effectiveness of distance education – and particularly accelerated programs – causing many academics and researchers to feel the need to choose sides in the ongoing debate. When courses are accelerated, compressing the time required to complete them by 25% or more, suspicions as to the quality of deep learning increase even further (Pastore, 2010; Seamon, 2004). Hence, studies comparing distance to traditional education,

within all types of time structures, continue to arise in the literature in attempts to provide solid evidence that one is more effective than the other.

However, Clark (1985) noted that many studies directly comparing the two types of instructional delivery are poorly constructed and tend not to be able to control for the many confounding variables that can arise in researching such a complicated subject. In his meta-analysis of forty-two computer-based instruction studies, it was found that only ten were appropriately designed based on conventional understandings of experimental research design. Other studies, such as that of Haberman (as cited in Clark, 1985) had serious design flaws, including a lack of a controlled treatment for instructor or instructional method. For example, in the case of Haberman (as cited in Clark, 1985), it was noted that the learners in the control group, without computers, were allowed to quit instruction at any time, while learners in the treatment group persisted using computer-based media until the achievement criteria had been met. Clark (1985) indicated that such a difference in instructional method and time for learning may have had an impact on the results, but this was not acknowledged in the study. In fact, in forty-two studies, only about five percent of those included in Clark's (1985) meta-analysis seemed to provide clear evidence that computer-based instruction was superior to traditional instruction.

Bernard et al. (2004) presented a more recent and extensive meta-analysis of studies comparing the effectiveness of distance education (DE) versus traditional classroom methods. Two hundred thirty-two studies, out of more than 2000, were chosen based on a series of criteria derived from a review of the literature on what

defines distance education. Studies deemed acceptable to include spanned from 1985 to 2002, and featured measurable outcomes related to achievement, attitude, or retention issues in distance education in order to be included in the meta-analysis. Because there is a great deal of variability when it comes to either distance or classroom instruction, such controls were necessary to ensure that the meta-analysis and conclusions drawn were as accurate as possible. One of the most important conclusions drawn from Bernard et al. (2004) was that the majority of studies comparing DE to traditional learning tended to do so at relatively low levels, evoking the factual and conceptual levels of Bloom's Taxonomy (Anderson & Krathwohl, 2001; Krathwohl, 2002). Examining higher order thinking skills in such a way may prove to be highly challenging in terms of controlling for confounding variables, although Bernard et al.'s (2004) findings suggested that strategies designed to evoke higher-order thinking, like problem-based learning, provide greater opportunities for deep learning approaches to emerge in DE environments.

To confirm this, Bekele and Menchaca (2008) performed a similar meta-analysis of studies in distance education effectiveness, and found support that problem-based learning approaches tended to evoke higher levels of learning in online coursework. However, a notable limitation found in the sixteen selected studies for analysis was that many were quantitative in nature. Bekele and Menchaca (2008) noted that a lack of qualitative data might have led to inconclusive results where studies reporting no significant difference in learning were reported. In general, the design and results of

many of the selected studies appeared to be questionable, as many showed a mismatch between the treatments used and the variables that were actually measured.

Later, Shachar and Neumann (2010) came to a similar conclusion in their meta-analysis of performance differences between distance and face-to-face students. They noted that delivery techniques and course design was a potentially confounding variable amongst the experiments they selected for review. Baeten et al. (2010) also indicated that a variety of factors can impact learning approach in an online environment, and that these variables were extensive as well as relative, in that individuals may respond differently to any combination of those variables. This suggests that additional qualitative research in distance education effectiveness may be useful in understanding the core factors in the development of critical thinking and deep learning online.

Studies of student experiences of learning in time-compressed coursework, including courses that can be completed in 25% or less time when compared with traditional offerings, have produced similar mixed results as studies in online learning effectiveness (Cangelosi & Whitt, 2005; Johnson, 2009; Rafferty & Lindell, 2011; Seamon, 2004). Despite growing popularity due to the convenience that accelerated programs may offer, particularly online, research has shown little conclusive evidence regarding how deeply students learn in such venues. For instance, Seamon (2004) demonstrated that learners in a longitudinal study of student learning and retention that students in accelerated courses may have trouble recalling information after time has passed when compared to colleagues who have taken traditional-length courses. More recently, some studies in nursing education have found no significant difference between

performance of students in traditional and accelerated courses (Penprase, 2012; Rafferty & Lindell, 2011). Rafferty and Lindell (2011) in fact found that nursing students in accelerated programs that employ hands-on clinical experiences may even have a slight edge in some respects, although their performance may be lacking when compared to students from semester-length programs in other categories.

Despite this, Wlodkowski and Ginsberg (2010) indicated that accelerated coursework, including that which requires fewer actual contact hours than traditional or even intensive courses, can be of very high quality. Criteria such as accreditation of the institution, student and alumni attitudes, and student persistence and success are excellent benchmarks for determining whether an accelerated program contains high levels of quality (Wlodkowski & Ginsberg, 2010). Johnson (2009) supported this in her study of faculty teaching time-compressed courses, showing that high expectations are the norm in such classes, and that students in accelerated programs tended to be more highly motivated and more adept at managing their time than their traditional colleagues.

Johnson (2009), as well as Lindsey (2009) and Penprase (2012), noted that strategic design of accelerated courses that allow for rich, engaging opportunities for real-world discussion and practice is absolutely essential to promote effective learning. This coincides with Merrill (2002) that a structured approach that emphasizes tasks and problems, with activities that are aligned to them, can promote deeper learning. While there is a danger of overloading students with too much information in a time-compressed course (van Merriënboer & Sluijsmans, 2009), Merrill's (2002) instructional

design theories assert that motivated adult learners can be led to high levels of learning through a course that is designed with these principles in mind.

Perhaps the most important factor in determining effectiveness in such courses is whether students have ample opportunity to practice learned performance and critical thinking skills in the subject area. Wlodkowski and Ginsberg (2010) noted that time for initial learning is important, but also that long-term memory fades if skills are not put into practice on a regular basis. For instance, Raines (2009) indicated that accelerated second-degree nursing programs that promoted collaborative and practice-oriented activities were significantly more prepared for hospital work compared to those in programs featuring primarily reading or lecture-based instruction. This reinforces the findings of Bransford et al. (2000) that practice of skills is a significant part of deep learning development. Therefore, integrating accelerated coursework into the professional lives and experiences of working adults may be of great benefit in graduate programs, with the potential to have an even greater impact than traditional-length coursework.

This appears to be a rational conclusion, but does not fully address the issue of learning transfer and long-term memory fading over time. van Merriënboer and Sweller (2005) are quick to point out that cognitive load, or excessive strain on working memory, can be highly detrimental while attempting to transfer learned information from short-term memory stores into more complex and usable schemata that the brain can use to perform skills and express understanding. Within accelerated environments, it may be difficult for learners to differentiate between extraneous and intrinsic – or that

which is necessary for developing new learning – information, thus presenting a situation where learners feel overwhelmed and fail to learn much of anything with any real depth (Driessnack et al., 2011; van Merriënboer & Sluijsmans, 2009; van Merriënboer & Sweller, 2005). When learners are online, they are working independently as well, and away from a teacher who can point out the concepts to which they should pay the closest attention.

Navigating the complexities of cognitive load has proven largely challenging for researchers, as there are many variables that can impact how and whether a learner experiences the negative effects of extraneous cognitive load in any given situation. Novice learners, for instance, may become overwhelmed even more quickly than those with more extensive prior experience, putting students seeking an accelerated program in order to change career paths at a potential disadvantage (van Merriënboer & Sweller, 2005; van Merriënboer & Sluijsmans, 2009). Even for experienced learners, the stress of coming back to school, especially after a lengthy period of time, can be tremendously intimidating to adult students (Kasworm, 2008), creating additional cognitive load simply because learners are focusing on so many new processes and procedures at once.

The research of Pastore (2010) indicated that at a certain point, time-compressed courses induce too much cognitive load on most learners, and as a result, performance suffers. Even with multimedia tools for reinforcing concepts through both audio and visual mental channels, at about 50% compression, learning is far less likely to take place. However, Pastore (2010) also noted that this effect might not hold true for all learner populations, as every individual learns differently, and Pastore's (2010) sample

consisted primarily of undergraduate college students in a human physiology class, who were under the age of 30. With graduate-level adult learners in different subject areas, it is highly possible that cognitive load presents differently and with different levels of intensity in accelerated online environments.

### **Conclusions and Summary**

The review of the literature has shown that deep learning is not a simple thing to define, nor do all people construct it in the same way, although it is something that many learners and teachers strive to foster (Biggs & Collis, 1982; Krathwohl, 2002). Instructional design strategies that stimulate approaches toward deep learning and critical thinking skills further this by helping individuals develop the flexibility necessary to approach new situations more easily and solve problems more quickly (Bransford et al., 2000; Merrill, 2002). Such expertise is the hallmark of competency, and something that all forms of education should be capable of delivering, particularly at the graduate level, where learners need to be able to think abstractly about a subject in order to make quick, effective, and advanced decisions related to their chosen subjects (Biggs & Collis, 1982; Biggs & Tang, 2007; Bransford et al., 2000; McCune & Entwistle, 2011). As more learners turn to distance and computer-based learning platforms, especially those that allow them to complete requirements for degrees and certifications in a shorter period of time (Johnson, 2009), it is important to understand the learner's journey in this very personal form of instruction in order to find the instructional design strategies that match their needs within the online space.

Learners invariably take different approaches to learning tasks depending on the structure of the coursework and their developmental level with regard to the subject matter. However, many published scientific studies of online learning have presented inconclusive results with regard to the effectiveness of learning, including deep learning acquisition, due to the highly individual nature of the learning process (Baeten et al., 2010; Bekele & Menchaca, 2008; Bernard et al., 2004; Shachar & Neumann, 2010). Course design and delivery techniques have been found to be important intervening variables in distance education studies, although they have also proven difficult to research with any definitive answers regarding their impact on critical thinking, deep learning acquisition, and overall learning performance (Clark, 1985; Bernard et al., 2004; Bekele & Menchaca, 2008; Baeten et al., 2010; Shachar & Neumann, 2010).

Accelerated learning environments in particular have been found to potentially lack the ability to promote long-term memory transfer and integration into schemata for understanding and performing more complex tasks (Seamon, 2004; Tatum, 2010). While extraneous cognitive load can be induced within accelerated coursework that can be detrimental to learning, it is not conclusive as to how and when cognitive load occurs in different individuals (van Merriënboer & Sweller, 2005; van Merriënboer & Sluijsmans, 2009; Pastore, 2010). Overall, the research on accelerated online learning effectiveness has led to mixed results, as there are many variables associated with success including differences in learner experience, course design, and the amount of practice learners are given (Cangelosi & Whitt, 2005; Johnson, 2009; Rafferty & Lindell, 2011; Seamon, 2004).

The literature has, however, pointed to measures of learner approach and how courses can be designed to better promote deep learning acquisition, perhaps allowing insight into the intervening variables of individual learner and course characteristics. In particular, learner approaches to achieving stated intended learning outcomes (ILOs) can be measured by the Study Process Questionnaire, while the learning depth of the ILOs themselves can be measured through the use of the SOLO Taxonomy, (Biggs & Collis, 1982; Biggs et al., 2001; Biggs & Tang, 2007). The Revised Study Process Questionnaire (R-SPQ-2F) asks learners to express how they approach given tasks within a course by answering a simple series of self-report, Likert-style questions (Biggs et al., 2001). During this study, the results from this measurement have provided insight into whether learners tend to adopt deep or surface approaches to learning in their accelerated courses, and thus, whether they take the opportunity to develop deep learning in the first place.

The SOLO Taxonomy can be used to identify and classify intended learning outcomes (ILOs) within a course to better understand what they are addressing, and the developmental level expected of learners (Biggs & Collis, 1982; Biggs & Tang, 2007). This, combined with the understanding of how effective online instruction should be constructed, can assist in evaluating courses in terms of their abilities to bring learners toward deep learning of the subject at hand. Instructional design principles that include concentrating on clearly stated learning objectives representing real-world problems, activation of prior knowledge, demonstration and application of new knowledge, and integration of new knowledge into learners' everyday practices (Merrill, 2002; 2007;

2009; Swan et al., 2012), can, in turn, lead to motivation to learn (Wang et al., 2008), as well as to the successful development of deep, meaningful learning of the type described by Bransford et al. (2000). Thus, when learners are stimulated and engaged by the instructional strategies and ILOs set before them, opportunity for deep learning becomes that much greater, and the literature shows that it may be more likely that they would in turn adopt deeper learning approaches.

The purpose of this investigative case study was to explore instructional design strategies and characteristics of online, asynchronous accelerated courses and students' choices of deep or surface learning approaches within this environment. It was clear that the literature supported further investigation into how individuals, particularly at the graduate level, may be able to develop deeper learning in accelerated environments through improved course design. There are many variables involved in the study of learning acquisition, particularly in the online realm, and it is often difficult to determine what aspects of course design, learner personality, and instructional delivery may impact how and whether deep learning occurs (Bernard et al., 2004; Bekele & Menchaca, 2008; Baeten et al., 2010; Shachar & Neumann, 2010). Learners in accelerated coursework appear to possess particular traits that give them a propensity toward task-based, practical activities that enable them to solve problems more quickly and think more abstractly about topics in their field (Biggs & Tang, 2007; Driessnack, 2011). Therefore, investigating how instructional design theories, such as that of Merrill (2002; 2007), will help learners get the most from accelerated coursework is useful and valuable to this emerging and evolving body of research.

## **CHAPTER 3. METHODOLOGY**

### **Introduction to Chapter 3**

Following previous studies that have explored dimensions of the interaction between delivery mode, timeframe, and learning (Kirtman, 2009; Rafferty & Lindell, 2011; Seamon, 2004), the current study presumed that it is valuable to the body of knowledge in instructional design for distance education to study the types of learning approaches adopted by students participating in online accelerated programs, in order to reach the levels of expertise expected of them. Biggs and Tang (2007) noted that as learners reach higher levels of understanding, they tend to adopt more advanced approaches to learning, allowing them to make clearer relationships between ideas and draw abstractions in order to further their understanding and application of ideas. However, the development of such expertise can take time as cognitive schemata develop and mature with regard to the subject and its related parts (Biggs & Collis, 1982; Bransford et al., 2000). This study thus sought to explore whether graduate students in accelerated coursework typically adopt deep or surface learning motivations and strategies, and what roles time and design of course structures may play in this process.

This chapter will outline how an interpretive case study approach (Merriam, 1998; Yin, 2008) was used to explore more deeply the experiences of graduate students

and their approaches to understanding course concepts, and compare those experiences to the design of the courses they have taken. The research design and data collection and analysis procedures will be described, illustrating how the learning approaches of student participants were measured by the Revised Two-Factor Study Process Questionnaire (Biggs et al., 2001; see Appendix A) and through conducting follow-up interviews individually with a subset of these students, which sought to illuminate the first research question. The instructional design characteristics of the participants' actual course materials, including assignments, lecture materials, and assessments, were also examined and measured according to the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2008) and Merrill's (2009) Effective, Efficient, Engaging (e<sup>3</sup>) Evaluation Rubric (see Appendix B), allowing comparisons between previously gathered student experiences and instructional design elements, in order to illuminate the second research question. In addition, to avoid the pitfall noted by Yin (2008) that embedded single-case designs may be subject to analyzing each embedded unit of analysis individually without returning to the greater unit within which they lie, responses from learners and course design analysis were compared to one another and to the context as a whole to gain further insight.

### **Purpose of the Proposed Study**

The purpose of this investigative case study was to explore instructional design strategies and characteristics of online, asynchronous accelerated courses and students' choices of deep or surface learning approaches within this environment, as understood through the theoretical lenses provided by Biggs & Collis (1982), Bransford et al.

(2000), and Krathwohl (2002). To examine this, two primary research questions and several sub-questions emerged. The research questions in this study sought to provide insight into the deep or surface learning approaches adopted by students in online accelerated coursework, as well as the role played in learning approach by the instructional design strategies used in such courses.

### **Research Question 1**

*How do learners approach their learning in accelerated, asynchronous online graduate courses?*

Sub-questions include:

- How do learners come to select deep learning approaches as opposed to surface learning approaches in accelerated courses?
- How do learners describe their accelerated learning experiences in terms of encouraging deep or surface learning approaches to within their chosen field of study?

### **Research Question 2**

*Which instructional design characteristics and strategies used in accelerated asynchronous online courses play a role in helping learners reach deeper levels of learning?*

Sub-questions include:

- What design characteristics appear to promote deep learning approaches based on learner reflection and comparison to Merrill's (2002) First

Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?

- What design characteristics appear to promote surface learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?

### **Research Design**

Reviews of previous literature and analysis of the selected research questions led to qualitative methodological procedures for the proposed study. In particular, the case study approach was selected, which is defined as an empirical technique intended to explore phenomena within a real-life context (Merriam, 1998; de Weerd-Nederhof, 2001; Flyvbjerg, 2006). The embedded single-case design allowed the researcher to delve deeply into several subunits of analysis, including overall learner approaches to accelerated coursework as gathered through data from the R-SPQ-2F (Biggs et al., 2001), extended interviews with a subset of learners, and analysis of course designs. As Yin (2008) described, case study research can illuminate decisions and phenomena in order to understand why people do what they do, and why things happen in certain ways. Case studies allow for the careful and detailed analysis of complex phenomena; thus, this method has provided for deep insight and theory development related to learning approach in accelerated online environments (Merriam, 1998; Flyvbjerg, 2006; Yin, 2008). Experiments in education are also often very difficult to conduct while managing the many potential intervening variables present; Kember, Charlesworth,

Davies, McKay, and Stott (1997) noted that case studies provide insights into educational methods and learner activities in naturalistic settings.

Multiple participants and evidence within three embedded units of analysis were used in order to understand themes and connections, and provide recommendations and generalizations, across various types of data including questionnaires, interviews, and course materials analysis (Merriam, 1998; Yin, 2008). Such an interpretive case study design was deemed appropriate for this study, as the research questions attempted to explore the nature of learning approach from the student's perspective and the influence course's instructional design characteristics may have, as well as develop theory as to how and to what degree deep learning approaches are adopted within accelerated online courses. This bound the experiences within a particular context (Merriam, 1998; Yin, 2008), but since different individuals typically experience online learning in varying ways, focusing on particular instances within this context provided a more in-depth understanding that may have led to stronger interpretation.

Learning in the online environment is often highly individualized; therefore, the adaptive and descriptive nature of case study research was useful in attempting to answer the research questions for the proposed study. Lawler (2002) indicated that qualitative research allows for a means to explore the participants' worlds and their places within it, although it is also important to note that people are interpretive instruments rather than transparent messengers. Their stories are told through a contextual and cultural lens, and it was the researcher's responsibility to analyze how these experiences fit together with analyses of learning approaches through the Revised

Study Process Questionnaire (Biggs et al., 2001) and interviews, and the instructional design of participants' courses (Biggs & Tang, 2007; Merrill, 2009) to produce a more holistic understanding of graduate-level learning in accelerated online coursework.

Corcoran, Walker, and Wals (2004) also indicated that a case study is an appropriate methodology for questions that ask how and why something occurs, which the research questions in this study do. The research questions in the proposed study asked about learners' approaches to learning in accelerated coursework, as well as how the instructional design characteristics of their courses may influence these approaches and promote either surface approaches or the more desirable deep learning approaches needed for expertise development (Biggs & Collis, 1982; Bransford et al., 2000; Wier, 2005). Conducting interpretive case study research allowed for the construction of a rich, thick description (Merriam, 1998) of the depth of student experience in accelerated online courses, including impressions of instructional design characteristics and how these may have influenced learning approaches.

Unlike many quantitative methodologies, case study research allows for the exploration of a more complete picture of the situation at hand, using iterative processes that allow the researcher to continually review, reflect on, and refine the study based on what is learned from participants (Pan & Tan, 2011). Thus, as Merriam (1998) and Yin (2008) indicated, the insights gained from the participant cases and courses within this study provide readers with suggestions on how to improve deep learning within accelerated coursework through the application of instructional design theory, by learning from the perspectives of actual students. Such a study has the potential to

illuminate a complex current problem within higher education, as the research of Johnson (2009), Tatum (2010), and Penprase (2012) indicated that accelerated coursework is not a trend that is in danger of dissipating in the near future.

The study was conducted within an accelerated program in educational administration at a medium-sized, public university located in the Midwest United States, serving as the greater context, or unit of analysis, for the embedded single-case study. The program has been in operation for no less than one year, and more than 200 students have completed courses toward their master's degree and licensure in educational administration, including approximately 70 who have already graduated from the program. This program served as a typical unit of analysis (Merriam, 1998; Yin, 2008), because any problems associated with initial program startup were not likely to be a significant factor in student learning or motivation level. This program therefore represented a bounded system that is commonplace enough that it would be capable of providing solid groundwork for testing theory related to instructional design and learning approach in accelerated online education (Yin, 2008). The lessons learned from participant groups, courses, and interview cases within this unit of analysis were therefore more likely to provide insight into a wider range of online accelerated programs at the graduate level.

Based on Yin (2008), the study included multiple embedded units of analysis, including all 136 students currently enrolled, individual students, and individual courses of study that are required for program completion. Each student in the program represents a unit of analysis that may be typical or unique, and Merriam (1998) noted

that even small samples of great diversity may yield significant results when compared to one another. While not every student could be interviewed, all students were invited to participate in the R-SPQ-2F questionnaire, providing a baseline understanding of how students approach learning within program courses. Of the 17 respondents to the survey sent to all students, five volunteers to participate in in-depth follow-up interviews to share experiences about learning approach and student experiences in greater detail. Finally course materials, including assignments, assessments, and other online learning materials from all of the nine core courses in the program, were analyzed and compared both to one another and to student questionnaire responses and interviews to find similarities, differences, and derive recommendations and theory.

Yin (2008) and Merriam (1998), as well as Creswell (2009) and Flyvbjerg (2006), indicated that there is no set rule or benchmark for the number of units to include in an embedded single-case study, nor are there similar rules for participant samples in qualitative research in general. Instead, they each noted that a certain level of saturation may be reached during data gathering and analysis, as similar themes and patterns may begin to emerge as more individuals are included in the study. Merriam (1998) cautioned that this saturation level may not be known during initial research, indicating that in order to obtain reasonable coverage of the study's purpose, more units of analysis, particularly at the individual student level, may need to be added after initial data gathering. This is part of the iterative nature of qualitative research, and it should be noted that during data gathering, while it would have been ideal to see additional responses to the R-SPQ-2F, each of the five interview participants provided varying

levels of insights on similar topics. After interview analysis, many common threads were found amongst all participants, and a saturation level in themes was determined to be reached after the fifth interview.

All 136 students currently enrolled in the accelerated educational administration program were solicited to complete the R-SPQ-2F, as well as regarding their interest in participating in the interview aspect of the study. Five students volunteered to be participate in these interviews, and they formed each of the five initial in-depth units of analysis for review and later cross-comparison with R-SPQ-2F and course analysis data. Participation in both surveys and interviews was entirely voluntary, and every effort was taken to ensure that all students were equally invited to participate. Yin (2008) noted that analyzing each individual set of data as its own unit of analysis and then performing comparative analysis between them, however, increases validity and reliability further within case study research, making the inclusion of embedded units within a single-case design a useful choice for generalizing findings beyond just one unit of analysis, even within a small overall sample size. The following section will describe the units of analysis, including target population, sampling, and recruitment, in more depth.

### **Target Population, Sampling Method, and Related Procedures**

The target population for this study was all students involved in university coursework at the post-baccalaureate level – including master’s, doctoral, and specialist degree programs – that is considered accelerated and is delivered through completely asynchronous online methods. All members of the population are adults of at least the age of 18, and because members of the population are involved in asynchronous online

study, it can also reasonably be assumed that they have access to computers and Internet technology for the purposes of communication, research, and project creation (Salmons, 2011).

Accelerated courses themselves were also a population for this research. For the purposes of the study, accelerated programs refer to any delivered in a compressed timeframe of at least 25% less time when compared with courses delivered in a timeframe of twelve or more weeks, which is typical of many colleges and universities (Johnson, 2009; Pastore, 2010; Wlodkowski, 2003). Courses, therefore, refer to single courses of study within such a program. Asynchronous online delivery refers to any Internet-based system that allows students to log in and access lessons, communication forums, and assessments at times that are convenient to them (Appana, 2008). Therefore, the greater population of courses associated with this study includes any post-baccalaureate level course of study that is to be completed in less time than a traditional semester or term, and is to be delivered through some asynchronous electronic means, including Internet-based course management systems, email, or other messaging tools.

### **Sampling Method**

Case study research typically employs a purposeful sampling technique, enabling researchers to select participants based on accessibility as well as individual characteristics and opportunities for gaining insights that will be of value to the study (Marrelli, 2007; Savenye & Robinson, 2005). Flyvbjerg (2006) and Yin (2008) indicated that there are no universal principles of identifying critical cases or study participants, but it may be useful to seek out most likely or least likely participants

within a case in order to either confirm or deny hypotheses and preconceptions about the topic of study. It is also useful to attempt to randomize participation whenever possible, to minimize bias (Merriam, 1998; Flyvbjerg, 2006). However, case studies still present some limits to generalizability in that the sample participants are unlikely to be fully representative of the population, but this is considered an accepted limitation, and sometimes even a strength, of qualitative research (Quinton & Smallbone, 2005; Flyvbjerg, 2006). In fact, sample sizes may be very small, although most discussions of qualitative research, including that of Savenye and Robinson (2005) and Yin (2008), noted that at least two sources of data should be used in order to triangulate and compare findings.

Participants invited to the study were current students in the previously identified educational administration master's program that was the primary unit of analysis for this study. An email explaining the nature of the research, as well as announcements within active courses, asked for volunteers to participate in the study. From this, all eligible students were asked to participate in an online, anonymous version of the R-SPQ-2F, allowing the establishment of a baseline picture of learning approaches within the educational administration program. Based on indications of consent to follow-up interviews after the R-SPQ-2F, a second, smaller group volunteered their willingness to participate in interviews designed to expound upon the learning approach concepts present in the R-SPQ-2F. At any time, students were able to contact the researcher if they wished to volunteer to participate or ask questions about the research. This type of sampling was purposeful, in that there were some criteria for selection, but still sought to

minimize bias through some randomization, even though remnants of bias yet may exist due to the qualitative nature of the research and the process of recruitment based on self-selection (Merriam, 1998; Yin, 2008).

All of the core courses, including nine courses related to practice and theory related to educational administration, but excluding the capstone internship course, and all of their associated assignments, assessments, lecture notes, and other media were included in the study. Thus, in total, 136 students were asked to answer the R-SPQ-2F and 17 responded, and of those, five consenting individuals were willing to participate in follow-up interviews. Also, all nine of the core program courses were included for analysis; one interview participant had completed all of these courses, two participants had completed eight of these courses, one had completed six courses, and one had completed three courses. This approach allowed for greater triangulation of data, and also ensured that exploration and comparison of data could be completed on multiple levels, both within each unit of analysis and between them, for increased reliability (Yin, 2008).

### **Participant Sample**

All of the 136 students enrolled in the accelerated online educational administration program at a medium-sized, Midwestern university were solicited to answer the R-SPQ-2F survey and volunteer to participate in follow-up interviews if they desired. The inclusion criteria included graduate students of any adult age, race, ethnicity, or gender who are enrolled in the online educational administration program. This implied that participants met admissions criteria for the university, including prior

attainment of a baccalaureate degree and certification of English language proficiency. Each of the selected interviewees were treated as part of a complete case within the structure of this embedded single-case study, and were able to assist in understanding the first research question for the case study after agreeing to informed consent.

Both Merriam (1998) and Auerbach and Silverstein (2003) indicated that additional participants or sampling may eventually exhaust what new knowledge can be gained from the study of any given area, so given this, it was deemed useful to add additional interviewees to the sample if more insight to the initial body of collected data was needed. In the initial recruitment effort, 12 participants provided survey data and of those, one individual volunteered to participate in an interview. It was unexpected that initial turnout would be so low, although it became clear after the interview that students, on the whole, were incredibly busy individuals and did not have time to spend volunteering what precious time they had to extracurricular activities. However, after a second call for participants, five more surveys were gathered, and four more interviews were gleaned at that time. While a case study design binds the experiences within a particular context (Merriam, 1998; Yin, 2008), different individuals experience online learning in varying ways, so focusing on a few particular instances has the potential provide a more in-depth understanding and lead to stronger interpretation. In the case of the present study, even though the sample size was limited, there were many common threads found and strong data trends that emerged from the data available. In addition, while the interview numbers were small, time was allowed for thoughtful and complete investigation and comparison to course analysis data using the SOLO Taxonomy (Biggs

& Tang, 2007) and Merrill's (2009) Effective, Efficient, and Engaging Instruction rubric.

### **Course Sample**

To further triangulate findings and to explore the second research question more completely, all nine of the core accelerated courses in the program were also analyzed based on their instructional design characteristics. As a form of archival data, online course syllabi, lecture notes, media, assignments, and assessments provided additional data to assist in understanding how instructional design characteristics of courses contribute to student experiences and perceptions of deep learning. Allowing for such triangulation enhanced the possibility that the study would provide a more holistic understanding of the online learner's experience in accelerated graduate courses (Merriam, 1998).

Each course was an inactive version of courses that student had already completed or were currently taking. In this way, direct comparisons could be made between the experiences related by study participants and the characteristics found by the researcher in the courses, as well as across cases. Using courses students had actually participated in, as opposed to other courses that may have matched the description of an accelerated, graduate-level online course but were not necessarily experienced by the participants, strengthened internal validity (Merriam, 1998; Vockell & Asher, 1995; Yin, 2008). The courses, like the individuals in each case, therefore served as a sample of the available population of accelerated, asynchronous graduate-level courses.

## **Setting**

The case study was conducted within an accelerated online program in educational administration at a medium-sized, public university located in the Midwest United States. The program is open to any who meet the criteria for admissions, which include holding a valid teaching certificate for at least five years, and having previously completed a baccalaureate degree at an accredited institution with good academic standing. Because of the distance-education nature of this program, students may be located anywhere in the United States, although the program is not currently open to international students. Courses within the program are five weeks in duration, and students work through each course in cohorts of no more than thirty students each. The entirety of the program can be completed in as little as fifteen months, earning graduates a Master of Science with an educational administration specialization, and giving them the necessary tools to pass licensure examinations for school administration officials in their home states.

## **Recruitment**

All graduate students currently enrolled in the online educational administration program were solicited via email and through in-course announcements for their interest in participating in the study and completing the R-SPQ-2F. Of those 17 consenting to take the R-SPQ-2F, a total of five participants also consented to being contacted for a follow-up interview about their learning approaches in their accelerated coursework. These students and the materials from all nine of the core program courses, only excluding the capstone internship course, formed the entire case study participant group.

The researcher first sent out a recruitment email under the direction of the program advisor for those 136 students that were currently enrolled in the accelerated educational administration master's program as part of one of the sixteen active cohorts. The email explained the details of the study and the requirements for participation, and solicited students to complete the online R-SPQ-2F questionnaire. This email also provided informed consent information, and while taking the R-SPQ-2F questionnaire online, students indicated separately whether they consented to taking the questionnaire, and also if they chose to volunteer to participate in follow-up interviews.

### **Instrumentation**

Based on the data collection principles put forward by Merriam (1998) and Yin (2008), multiple sources of evidence were used to understand the phenomena involved in this case study. The converging of different types of evidence can lead to richer, more complete explorations and conclusions, and a stronger chain of evidence is likely to emerge from the data when it comes from multiple related sources (Yin, 2008). Initially in this study, the entire pool of available participants were asked to take an online version of the R-SPQ-2F (Biggs et al., 2001), in order to establish a baseline understanding of their approaches to learning (see Appendix A). Once this was determined, interviews were conducted with those five participants providing their consent to further contact with the researcher, to expound on themes found in the analysis of R-SPQ-2F results. After this was completed, all of the nine core courses within the program were analyzed using Merrill's rubric for effective, efficient, and

engaging instruction (2009) and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) (see Figure 3.2 and Appendix B).

Both questionnaires and interviews were conducted via electronic means – via the Web for the R-SPQ-2F and via Skype for interviews, ensuring that the spontaneity of conversation was preserved (Salmons, 2011). This also served the practical purpose of ensuring the learners were accessible to the researcher, as they were located in many different parts of the United States. The interviews serve as an extension of the results of the R-SPQ-2F, allowing the researcher to expand on what was learned from the measurement.

### **The Revised Two-Factor Study Process Questionnaire (R-SPQ-2F)**

The R-SPQ-2F (see Appendix A) is a measure of learning approach designed as a brief, 20-question self-report (Biggs et al., 2001). It is based on the Presage-Process-Product theoretical framework originally developed by Biggs (1987), in that learning activities – or the Process – dictate the quality of the learning Product. In other words, the approaches students take toward study can have a direct influence on how well and to what they degree they are able to accomplish given learning objectives. Learning approaches can be found to either be surface-level or deep, which also relate to their motivations for learning (Biggs et al., 2001). The R-SPQ-2F attempts to measure both motivation and approach to understand the processes students go through during their coursework. Because the heart of this study, and in particular the first research question, revolves around student approaches to learning, the R-SPQ-2F is a useful tool to understand participant tendencies toward either deep or surface strategies.

The R-SPQ-2F (Biggs et al., 2001) contains 20 statements related to how a student might approach learning in a variety of settings, with 10 of these items reflecting a surface approach to learning, and 10 reflecting a deep approach to learning. In addition, each of the 20 items also reflects one of four different subscales: deep motive, deep strategy, surface motive, or surface strategy. These subscales, associated with five items each in the R-SPQ-2F, assisted in determining whether approach to learning is influenced by intrinsic motivation of the learner, or whether it related to the strategies taken during study. The subscales were a way of understanding the difference between why students take either surface or deep approaches, as opposed to what they do to accomplish their learning tasks (Justicia et al., 2008). Respondents indicated whether they agree or disagree with each statement based on a Likert-based scale ranging from “This item is never or only rarely true of me” to “This item is always or almost always true of me” (Biggs et al., 2001, p. 148). Figure 3.1 displays each question in terms of its categorization within the survey as either deep or surface, and related to motive or strategy. The full survey can be found in Appendix A.

Survey Statements	Item Number	Motive	Strategy
<b>Surface Approach</b>			
My aim is to pass the course while doing as little work as possible.	3	X	
I only study seriously what's given out in class or in the course outlines.	4		X
I do not find my course very interesting so I keep my work to the minimum.	7	X	
I learn some things by rote, going over and over them until I know them by heart even if I do not understand them.	8		X
I find I can get by in most assessments by memorizing key sections rather than trying to understand them.	11	X	
I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.	12		X
I find it is not helpful to study topics in depth. It confuses and wastes time, when all you need is a passing acquaintance with topics.	15	X	
I believe that lecturers shouldn't expect students to spend significant amounts of time studying material everyone knows won't be examined.	16		X
I see no point in learning material which is not likely to be in the examination.	19	X	
I find the best way to pass examinations is to try to remember answers to likely questions	20		X
<b>Deep Approach</b>			
I find that at times studying gives me a feeling of deep personal satisfaction.	1	X	
I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.	2		X
I feel that virtually any topic can be highly interesting once I get into it.	5	X	
I find most new topics interesting and often spend extra time trying to obtain more information about them.	6		X
I find that studying academic topics can at times be as exciting as a good novel or movie.	9	X	
I test myself on important topics until I understand them completely.	10		X
I work hard at my studies because I find the material interesting.	13	X	
I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes.	14		X
I come to most classes with questions in mind that I want answering.	17	X	
I make a point of looking at most of the suggested readings that go with the lectures.	18		X

Figure 3.1. Illustration of the R-SPQ-2F (Biggs et al., 2001) statements and their categorization as either surface or deep and related to either motive or strategy.

It is important to note that the R-SPQ-2F was not used as a predictor of student achievement or success in this study, as it has been shown to be a relatively unstable predictor of such in some instances (Choy et al., 2012). Nonetheless, the R-SPQ-2F has been shown to have high levels of construct validity with regard to indicators or tendencies toward deep and surface approaches to learning (Burnett & Dart, 2000; Biggs et al., 2001; Snelgrove & Slater, 2003; Justicia, Pichardo, Cano, Berben & de la Fuente, 2008). As a self-report, the R-SPQ-2F provided information about the subjective experiences of learners, contributing more to the analysis of themes and trends in qualitative data than to hard facts based on objective measurements (Auerbach & Silverstein, 2003). By comparing responses to the R-SPQ-2F to what selected participants stated during follow-up interviews, this brief test helped to establish consistency as well as a baseline understanding of how and whether students in the education administration program felt that they employ deep learning approaches and motives in their accelerated studies.

### **Interview Questions**

Follow-up interviews were used to understand more fully the learning approaches taken by student participants in this study. Guiding questions used during the interview process were primarily open-ended or semi-structural in order to ensure flexibility during the interview. This allowed the interview to be more like a conversation about students' experiences rather than feel like a test or evaluation, which could be inhibiting to the students' comfort level during the interview process (Merriam, 1998; Salmons, 2011). A primarily researcher-driven interview process could also

stagnate responses and the flow of conversation, particularly where reflections on learning and metacognition are concerned (Anderson, Nashon, & Thomas, 2009). With this in mind, limiting the number of starting questions was highly recommended by Auerbach and Silverstein (2003), who indicated that a large number of initial interview questions could leave participants feeling overwhelmed. Questions were composed so as to use plain language in order to be easy to understand, and did not contain excessive jargon relating to technology, educational theory, or instructional design.

An initial script to begin the interviews was used only to ensure that participants understood informed consent and agreed to be interviewed. This script provided participants with the opportunity to state that they agreed to be recorded, and introduced the format of the interview. Participants were also informed at this time that they were free to ask questions of their own about the study at any point. The script, which can also be found in Appendix C, was as follows:

*For this interview, I have prepared a few questions for us about your educational administration program to start out with. But first, please note that this interview's audio is being recorded for transcription purposes. The information will be kept only for research purposes and the recordings will be destroyed once they are transcribed. Also note that your name will not be used in any reporting, including my research dissertation. Do you agree to be recorded and participate in this interview? [Wait for response] Thank you. Do you have any questions? You may ask questions at any time during this process, so please stop*

*me at any point if you need to ask something.* [Wait for response, then begin questions]

After the script was completed and participants agreed to consent to the interview, the researcher began asking the questions. The questions developed for this study have been adapted from the major themes in the 20-item R-SPQ-2F (Biggs et al., 2011), related to learners' time devoted to study, and the seriousness or depth of their approaches to learning. Because the R-SPQ-2F examines both deep and surface learning strategies and motives, it provides an excellent springboard from which to create follow-up interviews. The R-SPQ-2F (see Appendix A) addresses particular issues related to learning approach and motivation. Understanding whether courses are engaging to students in order to keep their interest is important to understanding learning approach, as is understanding whether learners tend to take their study seriously (Biggs et al., 2001). Thus, the interview questions were designed to provide students with the opportunity to expound further on their personal learning approach in terms of deep or surface strategies, as well as the accompanying motivations that may influence those strategies.

### **Field Test Results for Interview Questions**

The original interview questions developed for this study are provided below, and these questions were later shaped through field testing with qualified experts in qualitative research and familiarity with accelerated programs at the research site. Initial questions developed for the interview by the researcher, based on the work of Biggs and

Collis (1982), Biggs et al. (2001), Merriam (1998), Auerbach and Silverstein (2003), and Yin (2008) included the following:

1. Why did you choose an accelerated program instead of a traditional one? Are you happy with your choice so far?
2. Do you feel like you are learning a lot in your program now? Please describe how you feel you are developing master's-level understanding of your field in your current program.
3. How do you do your homework? What processes do you go through to ensure that you can get your homework done well and on time?
4. Do you feel like you have enough time to get assignments completed and study as much as you feel is necessary to do a good job?
5. What have been the most helpful things your professors have done to help ensure that you understand your course assignments?
6. If you had any advice or feedback for your professors so far in your accelerated program regarding how much you are learning or how motivated you are to study, what would it be? Don't name anyone by name if you can – just keep your feedback general.

Six experts in qualitative research and in accelerated online learning programs at the higher education level were invited to participate in a field test to analyze and improve the initial interview questions. Of these six, four responded, providing input as to the perceived reliability and validity of the questions. This included ensuring that no bias was present in the language used for the questions, and that the questions were

aligned to research questions. While no biased language was evident and all experts agreed that the questions were reasonable reliable and valid, they also agreed that the questions could be made more concise and clear in order to reach the primary thrust of the research questions. In a series of electronic and face-to-face communications, the field experts worked with the researcher to develop the following revised set of questions (see also Appendix C):

1. You are enrolled in the Master of Science in Education Administration program. What were your reasons for choosing this major?
2. Why did you choose this accelerated program instead of a traditional one?
3. Would you characterize the type of work that you do in your coursework as more project-oriented or more exam-oriented?
  - a. Follow up: Which types of courses have you found to be more project-oriented and which ones were more exam-oriented?
  - b. Follow up: Can you characterize the amount of time and preparation that you required in both project-oriented and exam-oriented courses?
4. Do you prefer the more project-oriented courses or do you prefer the more exam-oriented courses?
5. What processes do you go through to ensure that you can get your coursework completed?
6. Do you feel like you have enough time to complete your coursework?
7. Do different professors or academic coaches have different expectations for coursework? Please explain.

8. Do your professors and academic coaches provide you with enough resources to complete your assignments?
9. Did this program meet your expectations? Please explain.

These revised questions reflected a more concise and focused line of questioning that used consistent and unbiased language, and ensured that a clearer chain of evidence can be constructed between data collected from the R-SPQ-2F, interviews, and course analysis. Yin (2008) noted that data collection is far more reliable when the steps and processes taken during qualitative research are aligned and linked to initial study questions. By ensuring that language used is consistent throughout all interview questions, and that all questions follow a clear path back to the initial research questions related to learning approach and instructional design of accelerated online graduate courses, the data collected from interviews was far more valid and reliable.

Additionally, the researcher asked students to mention specific names of courses when they spoke about specific characteristics, activities, or assignments. This was used to help ensure there was a connection between what learners said about their learning approaches in their courses, and what was seen during the course analysis process. By being able to track course characteristics across the different types of data being collected, a clearer path toward themes and categories found during data analysis could be made.

## **Merrill's Effective, Efficient, and Engaging Instruction Rubric and the SOLO Taxonomy**

Course materials, which included all instructional media, assignments, and assessments associated with each of the nine five-week online courses of study within the educational administration program, were analyzed using Merrill's rubric for effective, efficient, and engaging instruction (2009) and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007). Course materials were electronic in format, but were not from "active" courses, so no student data was exposed to the researcher during this phase of data collection.

Information regarding how the course materials compared to the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) and Merrill's evaluation rubric (2009) were recorded using these tools (see Appendix B), and compared to student responses to find themes, draw comparisons, and discover insights related to the research questions, using a constant-comparative method of analysis (Boeije, 2002; Merriam, 1998). It was necessary to compare actual course designs to what students described and indicated on the R-SPQ-2F in order to discover where course designs may be improved and where they were found beneficial, based on the approaches to learning that students tended to report. For example, if students tended to use surface approaches to learning during a particular course, and the stated learning objectives reflect lower levels of cognitive development or engagement, then this would have been a clear sign that the course design played a part in students' inability or unwillingness to learn the subject more deeply.

In order to perform course analysis, the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) was employed to determine the stages of cognitive development addressed within the courses. Similar to Bloom's Taxonomy (Krathwohl, 2002) in many ways, the SOLO Taxonomy allows for the analysis and categorization of stated learning objectives, or what Biggs and Tang (2007) refer to as intended learning outcomes (ILOs), in order to determine the kind of knowledge and cognitive development involved in completing a particular learning task. Likewise, the revised Bloom's Taxonomy (Krathwohl, 2002) provides insight into learning outcomes and the level of knowledge attainment needed in order to accomplish them. Both taxonomies are hierarchal in nature, but the SOLO Taxonomy is based on developmental learning theory, where it is necessary for learners to raise cognitive development regarding a task in order to perform tasks (Biggs & Collis, 1982). In other words, the concept of development has been shifted from a learner's age, as in Piagetian theory, to the task set before the learner. Bloom's Taxonomy, on the other hand, is a method of classifying educational goals based on categories of knowledge attainment, not on learner development (Biggs & Tang, 2007; Krathwohl, 2002). Learners of any age or developmental level are thus expected to be able to achieve learning outcomes at all levels within the context of a lesson based on Bloom's Taxonomy.

While the use of either taxonomy can allow a designer to write ILOs that seek to move students toward deeper levels of learning through the classification and development of progressively more demanding learning outcomes, they are based on different underlying theories. Biggs and Tang (2007) noted that teachers must decide

not just on what must be covered in a lesson, but also on the balance sought between depth and coverage. In advanced courses, such as graduate-level courses, it is likely to be the goal of teachers to help students attain a relational or extended abstract understanding about a given topic, and the learning outcomes set for the course should reflect this. Therefore, a table adapted from the work of Biggs and Collis (1982) and Biggs and Tang (2007) was used to analyze and categorize ILOs found in accelerated online courses under review, as shown in Figure 3.2.

Promotion of deep learning approaches (Bransford et al., 2000), or what the SOLO Taxonomy defined as relational and extended abstract thinking (Biggs & Tang, 2007), was determined when objectives asked for higher levels of developmental attainment regarding a topic, such as when procedural and metacognitive knowledge is asked to be applied at once. This would represent a connection of advanced knowledge about concepts and skills to the ability to critically analyze, evaluate, and synthesize prior knowledge with new, similar to the processes used by experts as described by Bransford et al. (2000).

Kind of knowledge	Content or Topic	Level of understanding or performance (action verb)

*Figure 3.2.* Table for collecting data related to accelerated online course ILOs based on the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007).

Second, Merrill’s (2002) first principles of instruction were used to examine the types of problems learners engaged in, how prior knowledge was activated to promote

learning new information, how students demonstrated and applied knowledge acquisition, and how they were supported in integrating new knowledge into their practice. In examining instructional theories and models in a later, related work, Merrill (2009) presented a series of rubrics based on his first principles for finding “effective, efficient, and engaging” (p. 2) instruction (see Appendix B). This series of research-based rubrics (pp. 4-7) evaluated the component skills needed in the course, the instructional events, the demonstrations and examples provided, and the methods by which students are asked to apply what they know.

Courses are considered effective, efficient, and engaging when they contain elements that meet the following basic criteria, which have been summarized from the rubric and Merrill’s (2009) article explaining its use. Effective, efficient, and engaging courses:

- Help students recall prior knowledge through appropriate structures
- Provide at least three different demonstrations of skills to promote learning through practice and working through successively more complex iterations
- Guide learners to apply general knowledge toward specific cases or instances
- Use multimedia that conform to effective multimedia principles
- Ask learners to apply knowledge in a manner consistent with the subject content
- Provide opportunities for feedback so that learners know how they are doing as they go
- Coach learners toward goals and gradually fade supportive scaffolds as they progress

- Promote peer collaboration and critique to further integrate knowledge

The researcher adapted the rubrics as Merrill (2009) presented them to carefully assess the instructional design principles that could be found in each course to be studied. Courses that were deemed capable of promoting deep learning approaches rated more highly in terms of effectiveness, efficiency, and engagement, and focused on progressively more complex objectives, scenarios, and problems that asked learners to stretch their knowledge in new ways.

Through the analysis of multiple forms of data, greater triangulation of sources has led to greater accuracy and validity (Merriam, 1998; de Weerd-Nederhof, 2001; Yin, 2008). After all, the key to obtaining good data is to use good investigation techniques, which includes asking good questions and making use of established instruments whenever possible (Merriam, 1998; Creswell, 2009). The field test of researcher-developed interview questions served to refine the interview questions, and combined with the use the R-SPQ-2F (Biggs et al., 2001) and archival data collection rubrics (Biggs & Tang, 2007; Merrill; 2009) these instruments were deemed capable of revealing information necessary for answering the research questions. Details as to how data collection revealed these answers will be provided in the next sections.

## Data Collection

### **Research Question 1: Revised Two-Factor Study Process Questionnaire and Interviews**

In order to answer the first research question, which asked about student approaches to learning in accelerated, asynchronous online graduate courses, both the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) (Biggs et al., 2001) and one-on-one interviews with participant students representative of the target population were used. The R-SPQ-2F is an established measure of approaches learners take to learning, consisting of twenty self-report items to which learners respond based on a Likert-type scale. All of the 136 current students in the program that makes up the unit of analysis for this study were asked to complete the R-SPQ-2F questionnaire.

Interviews were also conducted in order to better understand student experiences in how and whether they use deep learning approaches in their accelerated learning endeavors. While it was planned to use a randomized sample of no fewer than ten individual respondents to the R-SPQ-2F questionnaire who indicated that they are willing to participate in follow-up research, only five actually volunteered after two rounds of administration of the questionnaire. Each of those five participated in online, audio-only interviews. In order to draw stronger links related to learning approach and course design across all forms of data collection, thus enhancing the chain of evidence (Yin, 2008), participants indicated their willingness to participate in interviews on the R-SPQ-2F questionnaire form in order to connect their specific questionnaire responses to the themes found in their interview responses.

Interviews occurred through an online medium to increase feasibility for the data collection process, as in most cases the researcher and participant would not be able to meet in the same physical space. While a text-based, asynchronous medium like email may have protected the identity and privacy of participants much more easily than synchronous communication modes such as video or audio chat technologies, it may have also limited the researcher's ability to note voice patterns and other nonverbal cues, and may also have had an inhibiting effect on spontaneity and the flow of conversation (Salmons, 2011). Each interviewee's personal information was kept strictly private, with all documents and recordings kept confidential through the use of password-based digital encryption techniques.

Each interview began with the same set of semi-structured and open-ended questions in order to ensure that all participants had an opportunity to offer responses related to the same concepts and issues. Questions were related to their experiences in their accelerated online coursework, including their interpretations of how deeply they had learned course content, their impressions of the quality of online course construction, and their interpretations of the effectiveness of course instructors in helping them reach higher levels of learning. However, Savenye and Robinson (2005) noted that many interviews conducted during case study research do not always follow a strictly standardized pattern of questions, and recommend that interviews be allowed to be natural conversations between participants and researchers. Pre-determined questions frequently did lead to probing follow-up questions based on participant responses (Savenye & Robinson, 2005), and the researcher made every attempt to listen carefully,

be patient and attentive, and allow participants to feel comfortable while engaged in the interview process.

## **Research Question 2: Course Materials Analysis**

Courses to be examined within each case included all nine of the core courses within the educational administration program. The courses to be evaluated were inactive courses from prior terms, allowing the researcher to examine all learning materials carefully and without disruption or bias from student interactions that may be observed. This made the study of the selected online asynchronous courses a form of artifact, or content, analysis (Savenye & Robinson, 2005). Materials to be examined included assignments, lecture notes and presentations, and assessments used to teach a particular course online. Characteristics of each course could be compared to learning approach data from the R-SPQ-2F and experiences related through student interviews, painting a more complete picture of deep learning and the instructional design of accelerated courses in the case study.

This iterative process of evaluating the educational administration program courses using Merrill's (2009) rubric and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007), and comparing results to what learners in each case relate, as well as across cases, was intended to answer the second research question, regarding how the instructional design of accelerated online courses relates to the development of deep learning. Courses are described in narrative form and through assessment via data collection rubrics found in the literature (see Table 3.1 and Appendix B), which were designed to track and categorize the instructional design characteristics related to

promoting deep learning. Measurements of these characteristics were made based on the work of Biggs and Collis (1982), Biggs and Tang (2007), and Merrill (2002; 2009), who developed taxonomies, principles, and rubrics related to the design of instruction leading to gains in higher-order learning and critical thinking.

By comparing the design of the courses and levels of intended learning outcomes to established instructional design models and theories, the researcher was able to draw inferences about mechanisms or approaches present in each of the courses. As graduate-level courses, it was expected that the intended learning outcomes and corresponding activities were designed to promote expertise development and deep learning (Bransford et al., 2000; Wier et al., 2005). When compared to learning approach data, related student experiences from interviews, and across individual cases, a picture began to emerge regarding how instructional design characteristics, including stated intended learning outcomes, course lectures, and assessments, may impact the learning approaches that students take, and thus whether deep learning is encouraged to emerge.

### **Data Analysis**

Interpretive case studies involve the development of theories that can be used to explain the phenomenon and experiences witnessed through data collection (Yin, 2008; Pan & Tan, 2011). The research questions in this embedded single-case study provided guidance in conducting three primary forms of data gathering between and across various forms of data, including responses from students participating in the accelerated graduate coursework of the unit of analysis on the R-SPQ-2F, in-depth follow-up interviews with individual students who elected to join an interview participant pool,

and online course materials analysis of all nine core courses. Data from the R-SPQ-2F and interviews served to address the first research question, regarding how participants describe their approaches to learning in their accelerated online coursework. Data from course analysis using Merrill's (2009) rubric and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) provided insight into the second research question, regarding how the instructional design of the courses contributed to deep learning.

The underlying theoretical propositions of creating an accelerated online program to meet the unique demands of adult graduate learners guided the data analysis as a means to organize the study (Yin, 2008). As explored in chapter two and during data collection, it was evident that graduate learners choosing accelerated coursework may be unique, but their needs for deep, expert-level learning are highly important (Driessnack et al., 2011; Johnson, 2009; Wier et al., 2005). How learners in accelerated online programs approach learning, and how the instructional design of course materials, including learning objectives, assessments, and assignments, can lead learners toward deep approaches to learning, were the questions that provided the groundwork for data analysis.

A combination of pattern matching and constant comparative methods of analysis (Boeije, 2002; Merriam, 1998; Yin, 2008) provided the opportunity to systematically compare responses on learning approach from the R-SPQ-2F to descriptions that a subset of these respondents provided in interviews regarding their online course experiences, and to the instructional design features of the courses themselves. Comparisons across the data from all embedded cases were also performed.

Merriam (1998) noted that categorization of data and the construction of the categories themselves is the first step in data analysis, although as this process evolves, tentative findings can eventually be made and substantiated, with later revisions and reconfigurations. Case study analysis is thus iterative and continual, as data are examined, categorized, and re-examined many times in order to focus closely on all themes and findings that the data are able to provide.

Pan and Tan (2011) described the process of conducting and analyzing case studies in terms of a structured-pragmatic-situational (SPS) model, which provides researchers with a specific series of steps to undertake. These steps are flexible and adaptable depending on the case, and it is noted that qualitative researchers often return to research questions and prior assumptions about the research during the processes of data collection and analysis (Merriam, 1998; Pan & Tan, 2011; Yin, 2008). While not prescriptive, the practicality of the SPS model provided a framework for understanding the data in this study. Indeed, the nature of qualitative research presupposes that data collection and analysis sometimes occur in tandem, which can lead to refinement of theory, research questions, and data management techniques (Merriam, 1998). In addition, triangulation of data is important to the development of rigor in qualitative research, and the steps of collection and analysis are not always distinct from one another. Therefore, Pan and Tan (2011) referred to the processes of analyzing data as an augmenting cycle, where data are collected, reviewed, coded, and examined through an increasingly iterative theoretical lens until theoretical saturation, or the point at which very little new information can be discovered, has been reached.

In order to develop answers to the research questions, the theoretical lens developed in the review of the literature was revisited and revised multiple times, based on the findings from interviews and course materials analysis, and subsequent iterative search for related themes (Pan & Tan, 2011; Yin, 2008). Initial data gathering led to the identification of basic themes, or categories, in which data can be organized (Boeije, 2002; Merriam, 1998; Pan & Tan, 2011). This included data gathered within each of the units of analysis within the embedded single-case study, as well as comparisons of data from between units. Preliminary theory was built at this stage that could then lead to confirming and validating data through a more thorough analysis. Individual units of analysis were also revisited when any theme or concept needed clarification, creating an iterative cycle of data review and refinement of categories.

Once the process of thematic coding was complete, a more thorough and selective coding technique could be employed to categorize all identified themes within and between cases, and these results told the story of what the research has uncovered (Pan & Tan, 2011; Savenye & Robinson, 2005). Boeije (2002) offered a process of conducting constant comparative analysis in order to develop grounded theory, which involves comparisons of themes within single interviews or archival course analyses, across multiple interviews or course analyses, and between the cases that make up the embedded single-case study. Such comparisons allowed the researcher to refine at ever-increasing levels the coded themes present in the data, and through constant comparison analysis, a picture of how graduate students approached learning in the accelerated format began to emerge.

Analysis at this stage involved continuously examining the data to ensure that codes are complete and as accurate as possible, so that meaning could be derived from them. Savenye and Robinson (2005) noted that many qualitative researchers use visuals such as charts, diagrams, and mind maps to display data and make connections between ideas and themes as needed. Thus, QSR International's *NVivo* software was used to assist in this process and to ensure that all data was thoroughly analyzed, visualized, and taken into account. *NVivo* helped the researcher to see where themes overlapped and where initially determined themes during analysis of the first round of data were changed or become subsumed within other thematic categories after more data was brought into the study. This process involved both textual and visual components, allowing the researcher to understand the themes found in the form of various concept maps and models. This process was highly valuable in understanding the interaction between the different types of data, as well as in illuminating the research questions overall.

### **Limitations of the Research Design and Trustworthiness**

Qualitative research raises unique concerns in ensuring reliability and validity due to the often personal, unique, and potentially biased nature of data collection and analysis (Flyvbjerg, 2006; Quinton & Smallbone, 2005; Yin, 2008). In many cases, reliability and generalizability in qualitative research is considered poor, as most studies cannot be duplicated under the exact same conditions, although many qualitative researchers minimize the relevance of reliability or generalization (Payne & Williams, 2005; Yin 2008). In fact, researchers in instructional design (Clark, 1985) and

accelerated coursework (Tatum, 2010) indicated that quantitative studies can exhibit just as many perceived flaws related to reliability, validity, and a failure to control for extraneous variables.

However, Pan and Tan (2011) noted that the use of a systematic and iterative process such as the SPS approach can strengthen the reliability – or the extent to which the study can be replicated – of a case study design immensely by providing the exact steps that one can go through to attempt to replicate the data collection and analysis procedures. It was therefore important to follow this framework, along with pattern matching and constant comparative methods of data analysis (Boeije, 2002; Merriam, 1998; Yin, 2008), throughout the study in order to maintain a higher degree of reliability and validity. This included creating a thorough and complete thematic analysis within and across the different forms of data from within the study in order to construct rich, thick descriptions of phenomena and derived theories.

With regard to validity, or whether the data collection processes indeed measure what they indicate, qualitative research is often considered to have high degrees of internal validity because data are analyzed so extensively, and there are many opportunities for researchers to review and refine their findings (Merriam, 1998; Quinton & Smallbone, 2005). This leads to greater degrees of confidence that the measurements match well with the findings, although to some this is also one of the greatest limitations of qualitative research (Sikes, 2006). Rather than objectively analyzing data gathered through purely empirical means, qualitative researchers must put themselves and their biases into the data collections and analysis process, a process

that encourages some scholars to find qualitative research as far less valid or useful than quantitative research.

Yin (2008) noted that construct validity in particular may be problematic within case study designs, as many subjective measures such as lifestyle, context, personality, and other individual issues can impact the data gathered. Single-case designs with multiple embedded units of analysis, such as the present study, can afford higher levels of reliability and both internal and external validity than holistic single-case studies, due to the fact that triangulation is not just done between data gathered within a single unit, but is also performed with multiple types of data between several units of analysis within the overarching one.

In addition, instead of relying on traditional definitions of rigor in research, qualitative researchers have taken to adopting a concept known as trustworthiness instead (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Trustworthiness relates to the value that a qualitative study can derive from the credibility, transferability, dependability, and confirmability of its findings, concepts that relate a great deal to validity, reliability, and generalizability in terms of quantitative methodologies. Extended engagement with the data and the construction of thick descriptions can lead to higher levels of credibility and transferability, while dependability and confirmability can be determined through auditing and attempting to replicate studies in other settings (Morse et al., 2002; Savenye & Robinson, 2005). Therefore, in order to ensure higher degrees of trustworthiness throughout the proposed study, it was imperative to work extensively with the data in order to glean the most accurate themes and coding within

and between all cases possible, and it was also necessary to provide clear documentation on all stages and actions taken during the iterative qualitative research process.

While qualitative research as a discipline maintains that reality is multifaceted and not a single, fixed phenomenon (Lawler, 2002), internal validity factors can still be addressed. Internal validity, or credibility, was controlled through qualitative strategies summarized by Merriam (1998), Morse et al. (2002), Savenye & Robinson (2005), and Yin (2008), including triangulation of data, pattern matching, exploring all rival explanations thoroughly, using member checks and peer examination, and clarifying researcher bias. Specifically, triangulation refers to ensuring that multiple sources of data are used and analyzed in order to confirm findings. To establish this, the researcher asked all current students within the program that forms the unit of analysis for the study to participate in the R-SPQ-2F, conducted follow-up interviews with at those willing individual participants, and analyzed all of core courses within the program, including actual course designs that students have participated in.

Pattern matching and investigating all rival explanations (Yin, 2008) is also part of establishing validity, and will assist in ensuring that logical inferences are made based on all available evidence. Member checks asked participants whether data and derived interpretations were plausible, and because case study research does not feature extensive abstraction of participant input, this was found to be a useful strategy to maintain credibility (Morse et al., 2002). Peer examination was also implemented by having a third-party evaluator examine findings as they emerge during the iterative data collection and analysis process (Merriam, 1998), allowing for a second set of eyes to

examine the findings and confirm their logic and validity. Finally, the researcher's biases must be clarified at the start of the study in order to address past experiences and orientations that may shape the interpretation of data collected (Creswell, 2009; Yin, 2008). Providing this information sets the stage for research and establishes an honest starting point for the researcher from which to begin her investigative journey.

External validity, or the ability to generalize findings, is often difficult to establish in qualitative research to the personal and unique nature of the data collection process and of the phenomena being investigated. However, Payne and Williams (2005) recommended that both extensive thick descriptions of participants and themes, as well as theoretical generalization strategies, be used to enhance qualitative external validity. This included ensuring that interviews and document analyses focused less on the content and who had been included in the study, as opposed to what they had to say that could inform the research questions. Focusing on the individuals and thus potentially limiting generalizability is often a key shortcoming of qualitative research, but this can be readily avoided through conscious effort (Payne & Williams, 2005; Thomas, 2010). The analysis and reporting of the case study therefore incorporated rich, thick description, including providing actual quotes from participants and narrative evidence from courses reviewed wherever possible and appropriate.

### **Ethical Considerations**

Ethical issues, as previously noted, can be of concern in qualitative studies. Selection bias during recruitment was limited in that participants will be asked to volunteer and then will be randomly selected for inclusion based on a computerized

random number generator. In order to minimize bias in the data collection process, all efforts were made to protect human subjects from harm, while ensuring that data collection and analysis is not compromised. The participants were adult volunteers, with the opportunity to review and sign informed consent documentation and ask questions about the study at any point. They were also made aware of the fact that their interview data would be recorded for research interpretation purposes, and were able to withdraw from the study at any time without penalty, if they chose to do so. In addition, all proposed interactions with participants were virtual in nature, limiting the opportunity for personal bias to enter into the interview or data analysis process. While Salmons (2011) indicated that video conferencing technology does allow for individuals to hear and see one another, only audio conferencing was used during interviews in this study in an effort to minimize any potential discomfort or bias that could emerge when participants and interviewers can see as well as hear one another.

### **Researcher's Position Statement**

The researcher acknowledges that the potential for bias is greater when she is the primary instrument through which data collection and analysis take place (Merriam, 1998). It is important to acknowledge and embrace the human qualities of the researcher in a qualitative case study, rather than ignore them, as even though researchers have beliefs, values, and experiences related to the topic that could influence the course of the study, their insights can actually lend to the abductive, holistic interpretations of the data (Flyvbjerg, 2006; Thomas, 2010). Thomas (2010) in particular noted that inductive scientific inquiry has its own limitations in that it fails to

recognize the particular issues that impact a particular research site, situation, and participants. Case study and qualitative research, on the other hand, includes these factors, making interpretations potentially much more accurate, reliable, and complete.

The researcher notes that she is employed at the university where the study is conducted. The researcher has some familiarity with the university regarding policies and curriculum, as well as the types of students who participate in coursework, although the researcher is not involved in any way with the program involved in the study itself. The specific program on which the study is focused is an accelerated education administration program, a program held completely online. The researcher was not previously familiar with the specifics of this program, with the curriculum, or with the students who take these courses, as they are highly unlikely to be familiar with or to have ever taken courses in the researcher's program. Therefore, conflict of interest was minimized in that, although the researcher has met the acquaintance of some faculty members who teach in the educational administration program, she does not work with these faculty members regularly, nor does she have any relationship with any of the students or curriculum involved in this program. The researcher did not consult with any faculty colleagues concerning their courses or students in the educational administration program during the time of the study, in order to ensure that no bias entered the data collection or analysis phase of the study.

The following measures will be taken throughout the time of the study to mitigate and eliminate conflict of interest issues:

- The researcher did not consult with faculty who teach in the educational administration program regarding details with the study. The researcher only sought to gain permission to access course materials, but will not discuss data collection or analysis details until after the study is completed and published.
- As part of informed consent, the researcher asked that students not consult with one another or with their instructors about the details of the study. In order to maintain confidentiality, their agreement to this was important and essential.
- The researcher did not openly discuss the details of the study with other colleagues, including external evaluators, at any time without first placing anonymous identifiers on all data and removing information that may identify an individual.
- Member checks were conducted that involved taking interpretations of data back to the individuals from whom they were collected to ensure that the results present an accurate reflection (Merriam, 1998). Participants were only invited to check data pertaining to their own responses on questionnaires and interviews, or courses they have participated in, and were not made privy to data from other participants or courses within the study.
- Data collected as a result of the study will be kept on the researcher's personal desktop computer at her home, in a password-protected folder. No data will be stored on the researcher's work computer.

- The researcher used her personal email address to communicate with participants, which is not available to members of the staff or faculty of the university.

### **Chapter 3 Summary**

This chapter examined the nature of the interpretive case study designed to answer the proposed research questions regarding student learning approaches and accelerated online graduate courses. The study involved a triangulation of data collection techniques across multiple embedded units of analysis, including all program students and all nine of the core program courses, within the overarching unit of analysis of an accelerated online graduate program in educational administration, in order to use a constant comparative method to determine and interpret prominent themes emerging from the data (Boeije, 2002; Merriam, 1998; Pan & Tan, 2011; Yin, 2008). The data for collection included baseline interpretations of up to 136 participants' responses to the Revised Study Process Questionnaire (Biggs et al., 2001), short semi-structural interviews conducted through virtual, synchronous audio conferencing with a subset of consenting participants, and instructional design characteristic analysis of nine accelerated online courses using the effective, efficient, and engaging instruction rubric proposed by Merrill (2009) and the SOLO Taxonomy (Biggs & Tang, 2007).

The embedded single-case study took place within an online, fifteen-month, graduate-level educational administration program at a medium-sized, public Midwestern university, where courses last a total of five weeks each. All potential participants must have been currently enrolled in the program in order to be considered

for purposeful inclusion in the study. All efforts were taken to ensure that volunteer participants were aware of informed consent, felt free to ask questions throughout the research process, and that bias was minimized. While it is nearly impossible to remove all bias from qualitative inquiry procedures and analysis, this may actually be used as a strength rather than a weakness if it is acknowledged and used appropriately as a tool for abduction of findings (Flyvbjerg, 2006; Merriam, 1998; Thomas, 2010). Therefore, during the analysis process, rich, thick descriptions were constructed and data triangulation will be used to formulate themes and make determinations.

## CHAPTER 4. DATA ANALYSIS AND RESULTS

### Introduction

The goal of this research was to provide instructional designers, program developers, and instructors working in or seeking to begin accelerated, online graduate programs with insight and best practices that may be used to encourage students to take deeper approaches to learning that would in turn lead to more meaningful expertise development. The theoretical lenses provided by Biggs and Collis (1982), Bransford et al. (2000), Krathwohl (2002), and Merrill (2009) served to frame the study's approaches and methods. The purpose of this study was to explore instructional design strategies and characteristics of online asynchronous accelerated courses and students' learning approaches within this environment. Two research questions and several sub-questions emerged from review of the literature, providing insight into the learning approaches adopted by students in graduate-level online accelerated coursework, and the role taken by various instructional design strategies within such courses.

#### Research Question 1

*How do learners approach their learning in accelerated, asynchronous online graduate courses?*

Sub-questions include:

- How do learners come to select deep learning approaches as opposed to

surface learning approaches in accelerated courses?

- How do learners describe their accelerated learning experiences in terms of encouraging deep or surface learning approaches to within their chosen field of study?

## **Research Question 2**

*Which instructional design characteristics and strategies used in accelerated asynchronous online courses play a role in helping learners reach deeper levels of learning?*

Sub-questions include:

- What design characteristics appear to promote deep learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?
- What design characteristics appear to promote surface learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?

This chapter will focus on the process used to follow the research methods as outlined in chapter three, and will attempt to illuminate the research questions.

Throughout the analysis of data, comparisons were visited and revisited between and across all units of analysis within the embedded single-case study in order to determine the most noteworthy and important themes and patterns that emerged.

## **Description of the Case and Embedded Units of Analysis**

An accelerated program in educational administration at a medium-sized, public university located in the Midwest United States, served as the single-case for this study. The program had been in operation for about eighteen months as of the time of this writing, and over 200 students had completed courses toward their master's degree and licensure in school administration (primarily principal and superintendent licensure), including 70 graduates in five of the initial cohorts.

### **Program**

The online Educational Administration program attracts students from many states, although the majority of them come from the Midwest region of the United States. There are no international students in the program at this time, as licensure for school leaders is often quite different from nation to nation. The current program is based on the American education system, and requires that students enter with a valid U.S. teaching license before they may enter the program. Because of the nature of the program, students range greatly in age, background experience, and demographics, although in order to be considered for admission they must meet the minimum requirements for graduate study at the university, which includes previous completion of a baccalaureate degree with a grade average of 3.0 or higher. Therefore, most students are over 25 years of age, although they may be of any gender, ethnicity, or socioeconomic status, and the majority are currently working in the education field. Each individual could be considered to form an embedded unit of analysis within the case study.

## **Curriculum**

With regard to curriculum, the program requires 31 credit hours for completion, which equates to ten courses, nine of which are considered core curriculum courses. Each represents another embedded unit of analysis to be analyzed within the bounded system of the case study. The final course is an internship and is conducted as a unique experience for each student. Because of this, the final course was not included in the review of courses during this study. Students are not required to visit the physical campus at any time during the program, and may conduct their field experiences and internships as required within their home areas. The program chair and advisor ensure that students receive experiences that are appropriate in duration and quality, and these experiences may appear in limited scope throughout the program as well as the end during the internship.

Pseudonyms have been used for all titles and numbers of courses discussed:

- ED501: Foundations of Administration
- ED502: Community and Culture Leadership
- ED503: School Law I
- ED504: School Law II
- ED505: School and Curriculum
- ED506: Legal Concerns in Special Education
- ED507: The Business of Education
- ED508: Instructional Supervision
- ED509: Administration in Schools

- ED510: Internship (not assessed in this study)

### **Accelerated Format**

Each core course is taught in a five-week timeframe, with a one-week break between each course. The internship is completed at the end of the program, although students are expected to begin the actual accrual of required internship hours beginning at the start of the program. Courses are otherwise not taken concurrently, allowing students to concentrate on one course of study at a time. Because of the highly accelerated timeframe of five weeks as compared to the typical sixteen offered within other courses at the university, preventing students from taking on too much work at once is essential to ensure that students are focused and not overwhelmed by information. Students also participate in this program in cohorts of 10-25 students per cohort, meaning that they take each course in a strict sequence and are not able to deviate from this sequence without waiting to join the next cohort and pick up where they left off.

### **Students and Participants**

The program requires that students have at least two years of licensed teaching experience before entering, so naturally most students in the educational administration program tend to be working professionals in K-12 education. This means that in addition to participating in accelerated coursework, these students are living the life of a typical teacher – teaching all day, possibly tutoring or coaching before and after school, and perhaps also tending to personal and family responsibilities. These busy individuals

are striving to earn the credentials necessary to move into leadership positions within their own school or district, or elsewhere, and are eager to achieve their goals sooner rather than later. They are driven and ambitious in their career outlooks, but are also likely to place high value on learning and education given the fact that they are teachers themselves.

On the whole, it took considerable effort to get responses from participants in order to invite them to join in the survey and interview process. Even though five of the 17 students who replied to the survey provided their contact information, indicating willingness to participate in a follow-up interview, all but one of them failed to reply in a timely manner, and in fact, it was quite challenging overall to get in touch with each participant in order to convene the interview. This perhaps had to do with the fact that these individuals are often extremely strapped for time due to work, life, and school responsibilities. As such, it was no surprise that of those interviewed, many related their concerns and struggles surrounding time management and work-life balance.

Pseudonyms will be used to protect each participant's identity throughout this study.

Andrea was a female special education teacher who lived in South Carolina. She was a single mother of two who tutored students every day after school, and often participated in extracurricular events for her school, making her an extremely dedicated but busy individual. She described herself as someone who enjoys learning new things and has a "pretty strong work ethic". Andrea also indicated that she enjoyed research and project-based learning activities the most during her courses so far, of which she had completed six of the ten required courses for the program.

Jessica was a female high school English teacher from the Las Vegas, Nevada area, and had over 20 years of experience teaching in the inner city Las Vegas public schools. She had taken on leadership positions at different courses of her career, including department and committee chairperson, and mentor teacher within her building. Jessica described the process of how she originally entered the program as a “purely selfish pursuit” in the hopes to attain an additional degree to reach the highest salary level possible in her district before retirement, but later found that the courses and their content changed her personal and professional perspectives with regard to teaching and leading. Getting used to the online environment was new and challenging for her at first, but soon she caught on and found the courses both accessible and enjoyable. Although she had only completed three courses so far, she was very enthusiastic about the program and possibilities an administration degree and license held for her future.

Kate was a female middle school literacy educator in suburban Chicagoland, Illinois. She had approximately six years of teaching experience but was working on her second master’s degree, having earned the first at another university that exclusively offered online coursework. With a new baby in the house, she was finding herself rather busy in her personal life, but since she had participated in online coursework previously, she felt well-prepared to handle the planning and self-discipline necessary to succeed. She had completed all but two of the courses in the program, and being in one of the earliest cohorts, she related some of the growing pains she encountered during the program as it got started and took form.

Bob was a male science teacher at the high school level, working in suburban Chicagoland, Illinois. Like Kate, he also had six years of teaching experience, although he did not have any previous graduate study before entering the Educational Administration program. Bob, like several others, indicated that one motivation for attaining a master's degree was a salary bump in his district, but this was not a strong influence on his choice overall. Instead, he indicated that he wanted to move forward within leadership positions he had already taken on in his school, as well as gain the necessary insights into teaching and the administrative process in order to become a capable administrator at some time in the future. By the time of the interview, Bob had just graduated from the program, and thus could also speak to some of the growing pains noted by Kate.

Jenny was a female elementary school teacher from the suburban Chicagoland, Illinois area who had over 30 years of teaching experience, exclusively in the parochial school environment. Jenny had originally entered the program in order to fill the shoes of her retiring principal, although the timing of the position and her graduation were not matching up as expected. Nonetheless, she was excited about the things she was learning, even though she had been out of school for 30 years, having allowed family and work responsibilities take precedence rather than pursue higher education at an earlier time in her career. Like Kate, she had only two more classes left in her program before graduation.

## **Data Collection**

### **The Two-Factor Study Process Questionnaire (R-SPQ-2F)**

The R-SPQ-2F (see Appendix A for full survey) was distributed to students currently taking courses in the program via an email and course announcement sent by the program advisor. The email provided detailed information regarding the nature of the research, and led students to the address of a Web-based survey if they were interested in completing the R-SPQ-2F. This survey was housed in the university's Qualtrics survey creation software, allowing for respondents to log on to the survey anonymously, indicate whether they agreed to informed consent, and whether they also wished to be included in a pool for follow-up interviews later on. The total number of students who received the invitation to participate in the questionnaire was 136, and 17 responded, providing a response rate of 12.5%, and of these, five indicated that they would be willing to participate in a follow-up interview.

### **Interviews**

Interviews with the five participants who were willing to submit to the interview process were conducted via Skype, an online audioconferencing tool that is free of cost and easily accessible for most students in the online graduate program. Upon receiving informed consent from each participant, each interview was recorded for transcription purposes using the Audio Hijack Pro software, and the researcher transcribed each interview into a text document in order to discover and identify common themes and patterns that might emerge from what students shared. Once interviews were examined

and analyzed thoroughly, it was clear that several important themes were present that could serve to illuminate both research questions, regarding how learners choose to approach learning in their accelerated courses and the instructional design characteristics that may influence learning approach.

### **Course Analysis**

Each of the nine core courses in the program, not including the tenth internship course, were examined using the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007) to assess the intended learning outcomes, or course objectives, present in each course. The courses were also analyzed using Merrill's (2009) Effective Efficient, Engaging (e<sup>3</sup>) rubric to understand the instructional design principles and characteristics present in each course, including features common across all courses, and unique features, assignments, media, and assessments related to specific course content. The analysis of course data related primarily to research question 2, and revealed a number of important themes, many of which could also be found in analysis of interviews and survey data corresponding to research question 1.

### **Detailed Analysis of Results**

The following sections provide a more thorough and complete look at each type of data: R-SPQ-2F responses, interview responses, and instructional design analysis of courses using the SOLO Taxonomy (Biggs & Tang, 2007) and Merrill's Effective, Efficient, Engaging rubric (2009). The responses on the R-SPQ-2F and interviews served to illuminate research question 1, while the course analysis, including the online

activities, assessments, lectures, and other materials associated with each of the nine core courses of study within the educational administration program, served to illuminate research question 2. The triangulation of these data also provided insight into both research questions. Together, these data unveiled a number of key themes related to each of the research questions.

Data were collected and analyzed using QSR International's *NVivo* qualitative software database. Data were compared to one another as they were collected, and the software allowed for easier identification and classification of the themes found within and between each data source. Because data sources were so diverse in nature, with rubrics, participant interview transcripts, and survey data available, the coding process was extensive, although the process also revealed many overlapping codes between sources, as well as some that were mutually exclusive. The *NVivo* software was useful in determining how these codes related to one another and how each type of data uncovered different aspects related to the research questions.

### **R-SPQ-2F Results**

The R-SPQ-2F presented 20 statements (found in Appendix A) to participants in an online format, related to how a student might approach learning in a variety of settings, with 10 of these items reflecting a surface approach to learning, and 10 reflecting a deep approach to learning. In addition, each of the 20 items also corresponded to one of four different subscales: deep motive, deep strategy, surface motive, or surface strategy. Results on responses from the R-SPQ-2F are displayed in Tables 1 through 5, detailing overall deep and surface approach scores, and scores on

each of the four subscales. While the case study was primarily qualitative in nature, the quantitative nature of the results from the R-SPQ-2F provided additional insight into the nature of learning approach amongst students within the educational administration program. Values relate to the questionnaire's Likert-type scale:

- 1: this item is *never* or *only rarely* true of me
- 2: this item is *sometimes* true of me
- 3: this item is true of me about *half the time*
- 4: this item is *frequently* true of me
- 5: this item is *always* or *almost always* true of me

In order to understand overall response indicators within the subscales of Deep Motivation, Deep Strategy, Surface Motivation, and Surface Strategy, and the overall deep and surface approach of learners, scores across all questions related to each subscale were tabulated, and a mean was calculated. To obtain the overall approach indicators, scores for both surface-level and deep-level subscales were added, and then a mean was produced. The lowest possible score for overall deep or surface approach was 10 (indicating a score of 5 in each subscale), and the highest possible score was 50 (indicating a score of 25 in each subscale). Scores closer to 10 or below are desirable in regard to surface learning approaches, as this would indicate that learners rarely or only occasionally employ such approaches in their studies. Meanwhile, scores closer to 25 or above with regard to deep learning approaches indicate a trend toward learners frequently or almost always using deep strategies and motives when approaching their academic work.

Table 1

*Overall Surface and Deep Approach Scores with Overall Motivation and Strategy*

*Subscale Scores*

Response Indication	Mean	Std. Dev
Overall Surface Approach	8.824	0.453
Surface Motivation	7.235	0.258
Surface Strategy	10.412	0.378
Overall Deep Approach	17.421	0.424
Deep Motivation	17.412	0.431
Deep Strategy	17.529	0.468

The scores presented in Table 1 indicate a strong trend toward higher levels of deep learning approaches as opposed to surface learning approaches. Overall surface approach scores were at a mean of 8.824, indicating less than 5 points per subscale and very close to the minimum possible score, although there is a significant difference at the .05 level between surface motivation and surface strategy overall means.

Meanwhile, the score of 17.421 for overall deep approach shows a much greater tendency overall toward deep approaches in both motive and strategy. The difference between overall means for deep motivation and deep strategy are not statistically significant. These scores indicate that regarding research question 1, learners tend to adopt deeper approaches to learning overall, as opposed to surface learning approaches, and in particular tend to possess deeper motivations for persisting in study.

### Subscale Analysis

Each subscale was also analyzed by means across respondents on individual items. In this case, the means represent where along the Likert-type scale continuum respondents tended to fall. Scores below 2.000 represent a strong indication that the statement is rarely or never true for the respondents as a whole. Scores above 3.000 indicate that the statement is frequently or almost always true for the respondents as a whole. Scores falling in the range between 2.000 and 3.000 indicate that the statement is only true about half the time for the respondents.

Table 2

*Surface Motivation Statements with Overall Means per Statement*

Surface Motivation Statements	Mean by Statement
My aim is to pass the course while doing as little work as possible.	1.235
I do not find my course very interesting so I keep my work to the minimum.	1.118
I find I can get by in most assessments by memorizing key sections rather than trying to understand them.	1.647
I find it is not helpful to study topics in depth. It confuses and wastes time, when all you need is a passing acquaintance with topics.	1.529
I see no point in learning material which is not likely to be in the examination.	1.706

The means for each of the surface motivation items shown in Table 2 show very low scores, indicating that participants overall rarely agree with the given statements, and thus, rarely appear to engage in learning based on surface motives such as passing a course or gaining a particular grade. The statement showing the highest levels of

frequency with regard to surface motivation include memorization of key information versus understanding (1.647), and the value of learning material that is not going to be tested or otherwise used in a course (1.706). However, neither of these means is beyond the “never or rarely true” level.

Table 3

*Surface Strategy Statements with Overall Means per Statement*

Surface Strategy Statements	Mean by Statement
I only study seriously what’s given out in class or in the course outlines.	2.706
I learn some things by rote, going over and over them until I know them by heart even if I do not understand them.	2.059
I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.	1.706
I believe that lecturers shouldn’t expect students to spend significant amounts of time studying material everyone knows won’t be examined.	1.882
I find the best way to pass examinations is to try to remember answers to likely questions	2.059

The surface strategy items displayed in Table 3 resulted in slightly higher overall means than the surface motive results, potentially indicating that participants tend to use surface-level strategies to get their coursework done at least some of the time. In fact, as noted previously, the fact that the overall mean in this category is higher than the overall mean for surface motive is statistically significant. This may be a direct result of the compressed time lent to each course. Also, coinciding with the higher score for surface motives related to learning only the material needed to pass a test, the highest mean in this group is that related to studying only what is given in class or course outlines. At

2.706, this score almost reaches the “half the time” indicator on the Likert-type scale, showing that learners may prefer not to waste their precious time on unnecessary work or extra research that may be beyond the scope of the assignments given.

Table 4

*Deep Motivation Statements with Overall Means per Statement*

Deep Motivation Statements	Mean by Statement
I find that at times studying gives me a feeling of deep personal satisfaction.	3.706
I feel that virtually any topic can be highly interesting once I get into it.	3.353
I find that studying academic topics can at times be as exciting as a good novel or movie.	3.176
I work hard at my studies because I find the material interesting.	4.118
I come to most classes with questions in mind that I want answering.	3.059

The deep motivation category displayed in Table 4 resulted in means that were mostly above the “half the time” indicator, with one item reaching the “frequently” level at 4.118. These means indicated that participants tended to approach their learning based on intrinsic motivation to learn and achieve success in learning endeavors. The materials are generally interesting to learners fairly often, and therefore stimulate deeper commitment to study. While learners are necessarily putting aside entertainment to do schoolwork, and do not always come into their courses with questions in mind, as indicated by a lower 3.059 mean for each statement, they do work hard at their studies based on interest levels, as indicated by the high 4.118 mean.

Table 5

*Deep Strategy Statements with Overall Means per Statement*

Deep Strategy Statements	Mean by Statement
I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.	4.000
I find most new topics interesting and often spend extra time trying to obtain more information about them.	3.553
I test myself on important topics until I understand them completely.	3.176
I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes.	3.000
I make a point of looking at most of the suggested readings that go with the lectures.	4.000

The deep strategy group of statements shown in Table 5 dealt with how students actually perform their studies, and there was some diversity in the means for each item. While students tended to frequently find that they were willing and able to do enough work on a topic in order to be satisfied with their learning progress (4.000 mean) and pursue all of the given learning resources in their courses (4.000 mean), they were a bit less likely to test themselves on topics (3.000 mean). They also tended to spend time studying interesting topics beyond their courses only slightly more than half the time (3.553 mean), coinciding with the fact that they found new topics and interesting and worthy of extra study at least half the time (3.553 mean). This again relates with findings from the surface motive and strategy scales, where participants were found to be less likely to study or find importance in material beyond what was given or required for the course.

### **Participant-by-Participant Analysis**

Each participant was asked to include email contact information if he or she was willing to be included in the pool for interview participation. Because of this, each person selected for an interview could be linked to his or her individual scores on the R-SPQ-2F, allowing for cross-analysis between interview responses and responses on the questionnaire. This also allowed the researcher to compare interview participant scores with the rest of the respondents in order to determine whether they were in any way different from those who did not volunteer to participate in an interview.

Each participant's subscale raw scores and means are provided in Table 6, with higher scores showing higher levels or frequency of learning approach within each scale. It should be noted that no participants responded with surface motivation scores higher than the "sometimes" level with regard to surface strategy, with many reporting scores that fell within the "never or rarely" level. Deep motivation and deep strategy scores are more varied, with levels indicating that they tend toward deeper approaches somewhere between sometimes and frequently, but not always just half the time. Based on the data, it is also shown that the scores from the five interview participants are not significantly different from those of their peers, with trends falling along similar lines across all participants. There are, in fact, few extreme outliers in any of the subscales, indicating that the survey data are consistent and reliable.

Table 6

*All Participants' Surface Motivation (SM), Surface Strategy (SS), Deep Motivation (DM), and Deep Strategy (DS) Scores and Means on R-SPQ-2F*

Participant	SM Score	SM Mean	SS Score	SS Mean	DM Score	DM Mean	DS Score	DS Mean
Andrea	5	1.000	6	1.200	21	4.200	18	3.600
Jessica	7	1.400	8	1.600	13	2.600	13	2.600
Kate	9	1.800	14	2.800	21	4.200	20	4.000
Bob	5	1.000	9	1.800	17	3.400	14	2.800
Jenny	5	1.000	7	1.400	15	3.000	17	3.400
Participant	10	2.000	14	2.800	18	3.600	20	2.800
Participant	10	2.000	15	3.000	18	3.600	13	2.600
Participant	8	1.600	9	1.800	16	3.200	17	3.400
Participant	9	1.800	15	3.000	12	2.400	15	3.000
Participant	5	1.000	9	1.800	22	4.400	22	4.400
Participant	6	1.200	7	1.400	19	3.800	19	3.800
Participant	10	2.000	11	2.200	15	3.000	18	3.600
Participant	7	1.400	10	2.000	20	4.000	25	5.000
Participant	6	1.200	13	2.600	17	3.400	15	3.000
Participant	5	1.000	11	2.200	17	3.400	15	3.000
Participant	7	1.400	10	2.000	16	3.200	18	3.600
Participant	9	1.800	9	1.800	19	3.800	19	3.800

## Summary of Survey Findings

With regard to research question 1, the R-SPQ-2F provided insight into learner approach by showing that learners tended, overall, to have deeper motivations and used deeper learning strategies as opposed to surface approaches. However, while learners tended to have low surface motive scores overall, they did have slightly higher surface strategy scores, a difference that was significant at the .05 level. These findings led to the development of several key themes to be considered during the analysis of data, including surface motivation and strategy, and deep motivation and strategy. The theme of time was also especially prevalent, as revealed in part by the difference between surface motive and surface strategy scores, and by the difficulty in acquiring responses to the survey from students, despite repeated emails and announcements from their advisor and professors. Figure 4.1 shows an illustration of these themes as created through the *NVivo* software.

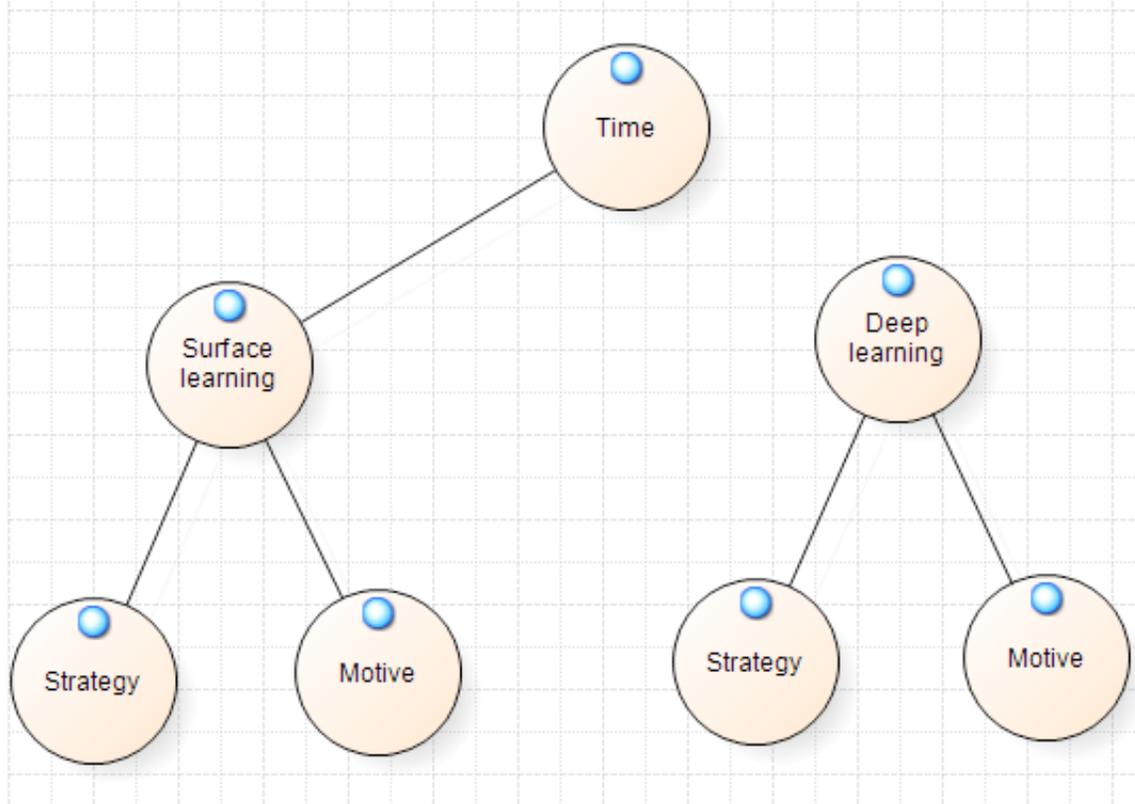


Figure 4.1. Themes revealed by R-SPQ-2F analysis.

### Interview Results

The results from the interviews are described in terms of the major themes present within each participant's responses. Important illustrative quotes from participants have been used to explain these themes more vividly. To review base interview questions, please see Appendix C, although it should be noted that depending on the responses given, sub-questions were dynamically generated to encourage more active and fluid dialogue with participants.

## **Choosing Educational Administration**

The educational administration program leads to licensure for building-level school administrators like principals and assistant principals, but that does not mean that all learners have such a position as their ultimate goal. Motivations for entering the program were reflected in these varying goals. For example, when asked why she chose the educational administration program, Andrea noted:

I am a special education teacher, and I specifically chose this program . . . because they have a class on Special Education Law, which is phenomenal because none of the other programs that I researched had that. And, at first I thought, “Gosh, how much could I possibly learn because that’s my field and what I do,” and I learned so much it was unbelievable . . . But, I would like to be a director of special ed somewhere because I’m concerned about the direction that a lot of schools are heading when it comes to special education. But I’m pretty sure I don’t want to be a building-level administrator.

Not all participants had such a specific goal in mind. Jessica noted that she had taken leadership roles in the past, such as department chairperson, with a good deal of success and accolades from colleagues. However, she had only recently begun to think of herself as an administrator, noting that she had previously “always said, I love my kids, I love being in the classroom, and that’s where I feel like I make the most impact, honestly.” She had begun to see a shift in her thinking, though, and realized that change must happen in small, systemic waves in order to make “a big impact,” and through her

program thus far, she felt she was becoming more equipped to make such changes in her district. But, like Andrea, she had little interest in the role of building principal, noting:

And if there's one thing that this program has taught me, is that I'd never want to be a principal, because they have the worst job in the world . . . I don't' think people realize the pressure that these people face . . . there's all this pressure to make a decision that will please everybody. So, I've really decided that's not something I'm interested in at all.

Other participants were not so quick to discount the value of a building-level position, however. Kate indicated that goal was to attain a position in curriculum administration at the district level, but she did feel that she “would like to be in a building for a bit to get that experience.” As a principal or assistant principal, she felt she would be able to gain important experience in personnel and educational management that was necessary to do well in a district curriculum job. Likewise, Bob also noted the importance of gaining experience prior to attaining a desired goal, noting that while he wished to move on to a principal position someday, he wanted to teach for at least another four to five years:

I think that having a good 10 years of teaching experience will help with being an administrator than if you just go right into it . . . I just feel that I should become a better teacher first, so I'm planning to do that before I actually end up using this degree . . . Understanding and learning the best techniques in the classroom and practicing that is the best way [to learn how to help your staff].

On the other hand, Jenny felt fairly sure of herself and her readiness for the principalship, noting that she was “very much looking forward to it,” but was also a bit sad to leave the school and students that she had worked with for many years. Like Jessica, she felt she had many good years as a teacher and had learned many things along the way, but felt confident in taking up a new challenge. Having had “a lot of encouragement from my peers and my superiors” also added to her confidence in her ability to work with parents, students, and teachers, and manage the operation of a school building successfully.

### **Being Busy and the Need for Accelerated Study**

Regardless of the reasons for choosing the program based on curriculum, it was clear that the accelerated nature of the program was of distinct benefit to all participants. Despite the fact that online learning was “unknown territory” for Jessica, Bob, and Jenny, all participants noted that they liked and appreciated the quick pacing and flexibility of the educational administration program. Time for learning is at a premium for many adults who work and maintain a family and social life, so an accelerated online program offers benefits that more conventional programs may not be able to bring. For example, Andrea stated, “I’m in South Carolina and I’m very busy, so I need to be able to do class at 2 o’clock in the morning if that’s what I need to do. So I knew I had to do something that was online.” Later in the interview, she also indicated that she liked the idea of having classes that were taken sequentially rather than simultaneously, although she also noted:

What I didn't really think about was how short a time 5 weeks is. And it was always when I got down to that 4th week and we had that big project due at the end of the 5th week that I would go "what in the world have I done?" So that was a little challenging!

Andrea, Jessica, and Jenny had also all indicated that they had encountered major life events that made completion of projects that much more difficult, including surgeries, deaths in the family, and unexpected caring for ailing loved ones. When their lives were already filled with plenty to do each day, including care for children at home, tutor after school, and work on school committees, unexpected events can be highly detrimental. Luckily, in all three cases, participants found that their instructors were extremely caring and understanding of their situations, and provided them with the extra time and resources needed. And, even when it was from a hospital bed, these participants stayed true to their missions and always found that they were able to complete their work on time. Such is sometimes the burden of the online student.

Kate had had the most prior experience with accelerated online graduate programs of all participants, having completed an online master's degree at another university previously. She chose the educational administration program because it offered similar benefits, including ease of access and flexibility around her schedule, but also because of the caliber of the institution. Because the university was a recognizable name among public universities in the Midwest, she also felt that she would be likely to

get a higher quality education, regardless of the pacing or delivery system of the program.

Meanwhile, other participants had not had much experience with the online environment. While Jessica had also previously acquired a graduate degree from another institution, this program was neither accelerated nor at a distance. Jessica recalled feeling a great deal of anxiety about starting the program, despite being highly motivated to acquire an administrative license both for salary-related and personal enrichment reasons. On the subject of choosing an accelerated program, she noted:

If I'm going to do it, I'm going to do it right. And I want the experience of going through and really learning . . . I've never done online coursework before, which was kind of exciting because I had no idea what I was doing . . . so I didn't want to lock myself into something that was going to be a really long program and end up hating it. And I really didn't.

Interestingly, the concept of "going through and really learning" was one that came forth in every participant's interview. Each participant described him- or herself as a "lifelong learner," a "nerd," or someone who simply enjoys learning for the sake of learning new things and growing professionally. Bob may have said it best when he noted, "I think something about a lot of teachers, especially teacher leaders, is that they like to be involved in learning. I'm guessing that being out there for a bit I'll probably want to start taking classes again." While all participants tended to want to complete their programs in a timely fashion in order to fit their degree attainment into their busy

lives, they each expressed a desire to make the most of their learning experiences and apply them directly to their education practice.

### **Structure of Online Program and Courses**

Each participant noted that the five-week course structure with a one-week break between each class was favorable, and in the words of Jessica, “refreshing . . . Not so much because I wanted to be done that must quicker, but because just for me, I just want to be able to have it done and out of the way, because I’m doing other things.” The pacing of the courses was indeed quick, but it was also very focused in that students did not take more than one class at a time. Several noted that this was of great benefit, not only for allowing one to focus on just one set of materials and deadlines per term, but also for the predictability of the schedule. Jenny, for example, indicated that the one-week break was a time to get “a lot of extra stuff planned,” such as doctor appointments and social engagements, and that during a term, she had a relatively set schedule for working on assignments. She, like many participants, used the weekend to get the majority of her work done, as she had many school and home commitments during the weekdays. “I always enjoyed the classes where the professors would give you till the end of day Sunday to get all your work turned in,” she noted. “I found it kind of difficult when everything was due on the Friday, because with my own family and everything, Saturday was like really my study day . . . that was really Mom’s homework day.”

Andrea also commented on the differences between weekend and weekday deadlines, indicating that “Friday . . . just kills me every time!” She also preferred due

dates that fell on Saturday or Sunday, finding that she had far more time to finish the given assignment during the weekend rather than while she was working. She tried to maintain a schedule where worked on each week's assignments primarily during the weekend they were typically due, and spending a great deal of the early part of the term reading and preparing for the assignments to come later on. Classes typically started on a Monday, but were open to students the Friday beforehand, allowing them to get situated and get a jumpstart on their assigned readings before the course officially began. Indeed, every participant mentioned this as a key component to helping them prepare and maintain a schedule for their schoolwork during each term.

All participants also related a similar scheme for working through their classes. They typically spent the weekend before or the early part of the week planning out what was due when, and how they were going to approach each assignment for the entire course. Many courses contained field experience components that required working with school officials in some ways as well, and during the initial planning process, Kate remarked that, "because it is a fast-paced accelerated program, I check to see if there's somebody that I might need to interview or something like that to where I need to set up interview ahead of time." Jessica recalled having trouble during her first two classes in establishing a workable schedule, noting that her inexperience with the online environment had gotten in the way of productivity at times, such as when she did not know where to go to find information like textbook lists. However, once she was able to get into a routine, she felt "more prepared than ever" going into her next course:

So I thought to myself, if you can get all of your chapters read today [at the beginning], like before I go to bed tonight, and then tomorrow kind of percolate and let it sink in, and then start working on the actual PowerPoint . . . and I'll just stay late on Wednesday and work on it . . . and if I get finished early I'll send it in early . . . But so far, I haven't ever been that [prepared or early].

Because students had developed such set schedules for themselves based on the limited time they had during each week to work, some were thrown for quite a loop when courses strayed from the norm with regard to due dates or assignment structures. While Jessica, Bob, and Jenny noted that they were able to manage these divergent classes by simply adjusting their schedules accordingly, attempting to look ahead to the next week as much as possible on the weekends so that assignments could be ready for completion by the Tuesday, Thursday, or Friday they were due. In fact, Bob noted that he was able to stay about a week ahead in each of his classes throughout his entire program in this manner, although he noted, "there would be some days where I'd be up pretty late working on things, but you get used to it." He went on to say that he enjoyed having some diversity in his courses, and was glad that "every professor was a little different in what they wanted . . . Which was good, because you don't want everything to be the same way every class." Despite this, he did acknowledge that others may not have had the same outlook.

In fact, Andrea and Kate indicated that they very much did not care for too much unpredictability in their courses. Kate in particular felt that some professors had gone

too far astray from the norms established for her in previous classes, including Sunday due dates. Having completed an online program previously, she found herself comparing her old program to the educational administration program, noting that the other university had had very strict standards for discussion and assignment policies, as well as the presentation of online learning materials. While she noted that the course management system used in the educational administration program maintained a common look and feel across all of her courses, basic policies were allowed to change more than she was used to. Kate attributed some of this to the fact that some professors seemed to be transferring their in-classroom policies to the online environment, even though they may have needed modification in order to make sense.

Some of the professors I've learned are very much more in tune with letting yourself pace yourself . . . but then all of the sudden a couple of the new ones started saying well, by Tuesday you have to do this, and by Thursday you have to do this, and then there were actual dates within the week, and that throws off the whole online learning community a little bit, just because that changes . . . It's almost like they're used to teaching in a classroom with students, that then transferring that to the courseroom online was a major change, and some people just can't do that.

### **Value of Coursework**

In the online educational administration program, there were a variety of ways in which instructors conveyed information and assessed learning objectives, including presentations, readings, group assignments, discussions, quizzes, and projects. For the

most part, participant students found these engaging and useful in terms of improving learning and effectively evaluating what they knew. Not every course contained the same types of activities or format, which allowed for a certain amount of variety, and as noted previously, not all students appreciated this when it interfered with policies they were accustomed to. However, on the whole, students felt very pleased with their coursework and what they were learning.

Most of the participants described their coursework as “hands-on,” “relevant,” and “practical” overall. As Jenny stated, “I can’t really say there was anything that I don’t think was useful . . . I think will be able to draw something from every one of the courses.” The assignments typically addressed real-world situations, such as shadowing an administrator during the school day, or interviewing a family in the school community, and almost every participant noted that they found their coursework, especially the projects and field experiences, to be quite valuable. For example, in ED508, Kate remarked that she enjoyed the chance to learn about a new model of teacher evaluation, and was particularly impressed with the timeliness of the course materials.

I thought that class was very beneficial mainly because it helped me understand it better . . . [the university] has all the research out and you know what’s going on with the newest and best. We were actually reading stuff on the Danielson model, and that’s the new one that Illinois just adopted, and every administrator this summer had to go to hours of training . . . so that’s the book we actually read

in our course . . . I thought that was right on time, and it was pertinent and it was the newest research.

However, not every course was received with the same level of positivity.

Andrea noted that there was one course, ED505, where she did not “get much out of” the course content and assessments. Jessica had also mentioned the lack of direction associated with ED505, finding it difficult to understand exactly what was expected.

One of the core assessments was the construction of a book review, and Andrea noted that “there’s only so much that you’re going to learn by reading a book in five weeks”.

There were other activities, including a group project, within this course, although

Andrea felt very ambiguous toward what she learned in the class overall. She felt that this course’s content, which focused on school curriculum and formulating a vision for what an ideal school might look like, was thin and not as engaging as it could have been, and noted that other members of her class had felt the same way. ED505 was the only class in which she felt this way, however, and in fact, she had very positive things to say about the other five courses she had taken so far during her program.

Courses varied as to whether the projects were large and distributed across the whole of the five-week term or whether they were shorter in length and more frequent during the term. Deeper, richer projects that allowed learners to digest and research over a longer period of time were preferred, in part because they allowed more time to complete, but also because it was felt that they were more valuable. Andrea noted that she felt like she put more effort into the longer projects, even though they were often

due at the end of the fifth week on a Friday, which was not conducive to her life schedule. She found she had to plan and work in advance in order to stay on top of such assignments. However, smaller projects distributed more frequently throughout the course, as that seen in the special education law course (ED506) were definitely not a favored alternative. “If I have mini-projects I don’t feel like I’m putting quite as much into it,” Andrea indicated.

ED506, dealing with special education law, was in fact one of the more controversial courses in the program, and was mentioned by several participants more than once. While Andrea, Jessica, and Kate had each raved about its content and the value of understanding special education needs as an administrator, they as well as Bob and Jenny each remarked on issues related to its structure. Multiple due dates within each week for a large amount of work was disconcerting to many students, as were the series of quizzes associated with each of the weekly readings. “I found the special education class, we had quizzes every chapter or after every section, and I found them very intimidating,” stated Jessica. Compounding the issue, she recalled that there was a problem distributing the quizzes that term, and the answers were not keying properly, so that even when a student responded correctly, the computer stated that they were incorrect. The instructor caught onto this and worked to solve the problem quickly, but there was at least a week of uncertainty and disarray that resulted in an event that stuck with everyone who had participated in that particular class. All participants interviewed had been in that same section, and all had mentioned this incident. While it did not necessarily detract from the course content for most, it may have wound up being the

thing that stuck with them the most after the course was over – an unfortunate but not abnormal consequence of having a major technical difficulty impede the learning process.

### **Exams Vs. Projects**

Courses varied in terms of whether they offered quizzes in any form or not, although such quizzes were not necessarily shunned by students. Essay exams in particular were seen as potentially valuable ways to express what has been learned, as Andrea noted that these exams had the potential to be quite rigorous, even though they were not proctored. They were timed, making it more difficult to rely on one's notes or textbook while taking the exams, particularly those that contained numerous essay questions. Multiple choice quizzes, Andrea felt, had too much potential for individuals to just guess and still get by with a passing score. Andrea remarked on this during the ED502 and ED503 school law courses, where she felt tests required a healthy amount of preparation in order to do well.

Here's the reality! Even if a test is not supposed to be open book, you're doing it at home, you know? I will say this: in my law class . . . I mean, let's be honest, there are going to be people who put the minimal effort into things. That's personally not me. I'm in this to learn . . . If you didn't prepare, there was no way you were going to be able to answer those questions with any depth of thought.

Bob also noted that learners could easily use the book to respond to quizzes, even though they were timed. “You couldn’t take a quiz without knowing a little bit about what you’re doing or what you’re looking for,” he stated, but also indicated that, “from a teaching aspect, for pedagogy, I think that projects do a lot more for actual retention of knowledge than simple quizzes.” This was not to say that all participants viewed the quizzes with disdain, as several noted their value as a check for understanding and as a way to ensure student accountability. Jenny even described the quizzes that she had taken as “helpful” for ensuring she was learning what needed, although she quickly noted that she still preferred the projects and actually engaging in real-world activities. Kate also spoke at some length to the “quiz versus project” debate:

I think some people enjoy exams, some people don’t, and to me, though, in this program, the projects are the most beneficial, and the readings, getting that discussion out, more so than taking a quiz . . . I felt like I grew more as a professional and educator from actually doing the researching and doing the interviews and working with principals and the buildings . . . I think that that’s what’s helped me grow the most in the program, versus the exams and the reading and being quizzed on it.

### **Instructor Expectations**

Several different instructors participate in the educational administration program, and it was noted that their individual personalities are definitely noticeable, particularly in the expectations that they hold for students. While students may not all agree on which professor is a “favorite,” two of the core professors’ names came up

repeatedly during the interviews. One was so prompt and efficient in responding to student needs that Jenny remarked that he was “one of the ones where I wouldn’t even be done typing the email and he’d be responding!” All participants appeared to be happy overall with their instructors, especially those they mentioned by name, and they enjoyed working with them. It was clear to some participants, however, that some assignments are constructed in order to be easier to grade within the accelerated term period. Multiple choice quizzes or simpler mini-projects fell into this category, for instance, and on this subject, Andrea noted,

I almost want to say some of the assignments are cop-outs. You know, the ones you don’t learn very much from, the ones you give because you’re supposed to give an assignment but it’s easier to grade if you do it this way.

In order to be successful in the program, learners did understand that self-direction and discipline was key. Professors expected this, and more often than not, students were able to do well on authentic and meaningful projects because they were self-directed and desired the opportunity to produce something of quality. Those students who were not as “interested in learning,” as Andrea stated, would be unlikely to do as well on such projects. Those less engaging, “cop-out assignments,” however, would be unlikely to produce great results from any of the students, however, as they stimulated less intrinsic interest and motivation.

Kate also commented on having had some less-than-ideal experiences with certain instructors. She attributed some of this to the fact that these instructors seemed

new to the online environment and did not communicate as promptly or as thoroughly as she would have preferred. There were also some times where she was not able to understand why she was scored a certain way on her work:

The wanted to mark you down just to mark you down so you don't have a perfect score but there's never a reason, just little things like that . . . when you're in a class face to face, you can do that and you can talk about it, but when you're on a computer in an online program, you always have to communicate why and give reasons from both ends . . . So that leads to people being frustrated and then miscommunication . . . I guess because I'm an educator – you know, teaching – I'm never going to give a grade without a reason. I guess because it's an education program, you assume that professors would do the same.

Kate's comment speaks to an issue that came up in many other interviews as well – students in the educational administration program are experienced, with that experience comes certain expectations that they bring as students to the classroom. All participants remarked on the value that their own prior training provided them, and how it both shaped their expectations and gave them the background necessary to go into an accelerated program without feeling too overwhelmed. While no one indicated that the courses were too easy or not challenging enough, no one indicated that they were so impossible as to be out of reach. In fact, as Jessica stated, the professors “did a good job” of selecting resources that were timely and worthwhile, and she felt that they did well in complementing her prior knowledge of education theory and practice.

## **Peer Interaction**

Peer interaction was encouraged through most courses, either through discussions or group projects. This allowed students to build a sense of camaraderie with one another, even across cohorts. Students in different cohorts were sometimes placed in the same sections of certain courses, as they are offered on a “carousel” rotation, allowing students to move through their programs fluidly regardless of which cohort they are in. Andrea, for example, was a member of Cohort 9, and indicated that she had been able to converse with students from previous and newer cohorts during the six classes she had completed. However, she had made the closest connections with other students from her own cohort, whom she had met during group projects in her first and second courses (ED501 and ED502). She continues to keep in touch with several members of that cohort, recognizing that they each brought different strengths to the learning experience, and that they each had things to teach one another.

Other participants commented on the collegiality of their cohort members, and indicated that they enjoyed group projects on the whole. However, Jenny did somewhat lament not being able to meet her peers in person, noting, “I kind of miss the interaction of being in the classroom, and talking face to face with people and sharing experiences and things. But . . . the fact that you can do homework at 1 o’clock on a Saturday night or something, I like that part of it.” She had also indicated some anxiety about working in groups at the beginning of her program, noting that she was not familiar with the latest technology tools for collaboration like Google Docs. However, she found quickly that other group members were able to help her become comfortable very quickly, and

she indicated that on the whole, she had “really wonderful group partners, where everybody did their share of the work.”

Kate and Bob also agreed that group activities were relatively painless and in fact, quite enjoyable most of the time. Neither reported having any bad experiences with group members not doing their fair share or missing deadlines, and both also commented on the advantages of programs like Google Docs for collaborative projects. Bob also noted that online discussion boards were helpful for choosing group members and staying in touch, as individual students were encouraged to post when they were more likely during the week to work on their projects, allowing groups to form based on these preferences and letting like-minded students work together accordingly. Kate mentioned this as well, and added that professors often facilitated these group match-ups, helping students stay engaged and connect to the partners that most fit their own working styles.

Kate also noted an additional benefit to peer interaction in her online courses – she felt that she learned a great deal simply from reading everyone’s postings during discussion-based assignments. There were, in fact, many discussions throughout each class, some of a reflective nature, some for debating, and some for collaborating on understanding key concepts. Having multiple discussions rather than relying mostly on papers or other ways of showing what one has learned gave Kate what she felt was a highly beneficial experience, helping her “stay connected . . . with other students in the classes.” She continued, saying:

I really did learn a lot. I would always wait – I would post my first post early on, then I would wait till the end to do the responses so that I could see everyone else’s posts, and you really learn a whole lot from reading what other people have to say. Part of me actually thinks that because it was online and there were discussions . . . we actually learned more than just sitting in a classroom, because not everyone would have gotten the chance to say stuff, or give their perspective.

There is a downside to group collaboration at a distance, however, and if communication is not clear or if busy lives get in the way of productivity, things can go awry rather quickly. All group members must be willing to share the burden of the work before them equally if it is to be done well and on time. “Oh! Can I tell you how much I loathe and despise the group projects?” asked Jessica upon approaching this subject. However, as she elaborated, she made clear that she had not had any specifically poor experiences, but nonetheless, the exchanges of large amounts of email and the discussions on who should take on which roles in a group made her rather uncomfortable. She related that figuring out how to work through the “ideal school” group project in ED505, when two group members were from elementary backgrounds and the other two were from high school backgrounds, was particularly challenging. Not only did they come from different school experiences, but they also came from far-flung regions of the state as well, making coming to a consensus of what an ideal school might look like quite challenging. While the project was completed without incident,

Jessica noted that the process felt somewhat contrived, and wished the project had included more guidelines to help them along their way.

Unfortunately, Andrea did have a rather poor experience to relate during her ED506 course concerning group projects. During this term, one group member, who lived in New York, was unable to participate in the first of two group projects due to storm damage from Hurricane Sandy. During the second project, another group member had been given last-minute tickets to an NFL game on a Sunday, and had decided to go, but did not communicate that she would not be online for most of the day to her group. The group submitted what they had without her, but she later chastised them for not waiting for her input. Communication was done primarily via email in this group, and this, Andrea said, was the primary reason why things probably did not go as well as they could have.

We didn't do any Skype or conference call, and I felt like with the other guys, we were much more technologically capable and we were able to find ways to be in good contact. Emailing when you have four people in a group is just a disaster. And that was the way everyone chose to communicate with this last group . . . But the one that kind of got mad, I sent an email of apology, but I haven't heard back from her.

### **Technology and Access to Learning Materials**

It was clear from discussion with each participant that technology played a valuable role in the learning process, and that it was necessary to be technologically savvy in order to achieve results in the program. From communication with peers and

professors to creating presentations and projects, using computers and the Internet effectively, and being willing to learn new things, is very important in the educational administration program. All participants commented on the ease of the course management system, and how it was not difficult to find one's way to the things that needed to be done. The fact that all courses maintained a consistent look and feel was also helpful to Jessica in particular, who had initially felt some anxiety about taking an online program due to the fact that she did not feel as comfortable with technology. She noted, "I like that when you click into [the system] it looks the same every time, and that uniformity is very comforting . . . I can't imagine if every class were different, I would probably have a nervous breakdown!"

Jenny likewise mentioned the usefulness of the university's course management system, but also noted that there were other university resources necessary that presented her with initial problems. In fact, these were the things she had asked questions of her professors about the most at the start of her program, particularly since she had been out of school for a number of years and like Jessica, was feeling a bit nervous:

My questions were more at the beginning when I was trying to get used to the system, like the [university course system] was very easy for me to use, but I really had a hard time navigating around the [university portal] at first. I was like, trying to figure this out, where am I going for this? And they'd say it's in the File section and I'd be like, where is the Files section? You know, just stuff like that was like, ok, I can't find it!

Most of the participants also mentioned that they felt at ease with researching online, and were able to find the materials needed to complete assignments without too much trouble. In some cases, they asked questions of their professors more than anything else, and in the case of Andrea and Jenny, they did not always make use of the tools available to them at the university, such as library resources, because they did not know how to access them. Because the library were behind a proxy server needing student ID information, both were unsure of where to go or who to call to get what was needed. However, because neither felt that they needed these resources for the time being, they did not pursue it.

Technology and the use of productivity applications such as PowerPoint, and collaborative online tools like Google Docs and Skype, were also mentioned by most of the participants. Jenny, for instance, found that she enjoyed the chance to use PowerPoint to convey her understanding of the readings in several of her courses, although Jessica indicated that she would have preferred a more straightforward option instead. Bob had also noted that Google Docs and its ability to let multiple people edit a document at the same time facilitated group activities a great deal, turning what could have been a difficult project into a much easier and more enjoyable experience. However, beyond PowerPoint, Google Docs, Skype, email, and the use of the course management system used by the university, no other technology tools were mentioned as required.

Andrea and Kate also made mention that several courses provided examples of previously completed projects to give students an idea of the expectation of what the finished product should look like. This, Andrea noted, was helpful, but it was also a double-edged sword in some respects.

I think it's really interesting that people go to PowerPoint to produce a final product even though you're not really doing a presentation, and I sometimes think that PowerPoint really is not conducive to some of the projects that we've done. But, when you put a sample out there and the sample is a PowerPoint, then everyone's going to go, "Oh, I have to do a PowerPoint!"

When she deemed necessary, Andrea had taken it upon herself to ask the instructor for some flexibility on the program used for final projects, feeling that different software might be better for the job. In all cases, the professors assured her that whatever she chose would be fine and encouraged her to "think outside the box." On the other hand, Kate found these models very helpful for understanding the expectations for a given project, as she found that many of the initial explanations of assignments were unclear.

I do think that there needs to be some work on the documents they use to describe projects. Either no one has edited them, or they need to be brought up to what the expectations are, because sometimes they're unclear, but . . . if you email and ask they explain and clarify in the courseroom . . . I mean, like with my [other] master's, there was never an issue, it was always the same and there

was nothing . . . there were never questions as to what they're expecting with the final projects, just because the instruction sheet that you're reading was so clear.

Kate was also one of the few to comment on the voiced-over slideshow presentations provided in most of the courses. She noted that those that were the best were the ones where the instructor was not just reading the slide, but also providing extra information related to the readings or the assignments. These helped to create a more personal feel to the class, and she expressed that she enjoyed the particular instructor's classes who did this the most quite a lot more, perhaps, than the courses where such presentations were not as extensive or as helpful.

### **Summary of Interview Data**

The interviews each shed additional light on the issue of learning approach in accelerated online courses, as well as on course design preferences and strategies. In considering research question 1, the interview data provided greater insight into the learners' approaches to learning by examining their personal motivations for entering the program, the routines they had adopted for completing their coursework, and the successes and challenges they encountered in their program. In addition, some insights into course design were provided, reflecting on research question 2, as participants remarked on elements of course projects, quizzes, and discussions that either led them to adopt deeper or perhaps more surface approaches to learning in order to complete their given tasks. A number of important themes and categories to be analyzed further were thus discovered and added to those already gleaned from the analysis of the R-SPQ-2F.

A more complex model began to emerge, as shown in Figure 4.2, and the themes and their relationships are discussed further in the rest of this section.

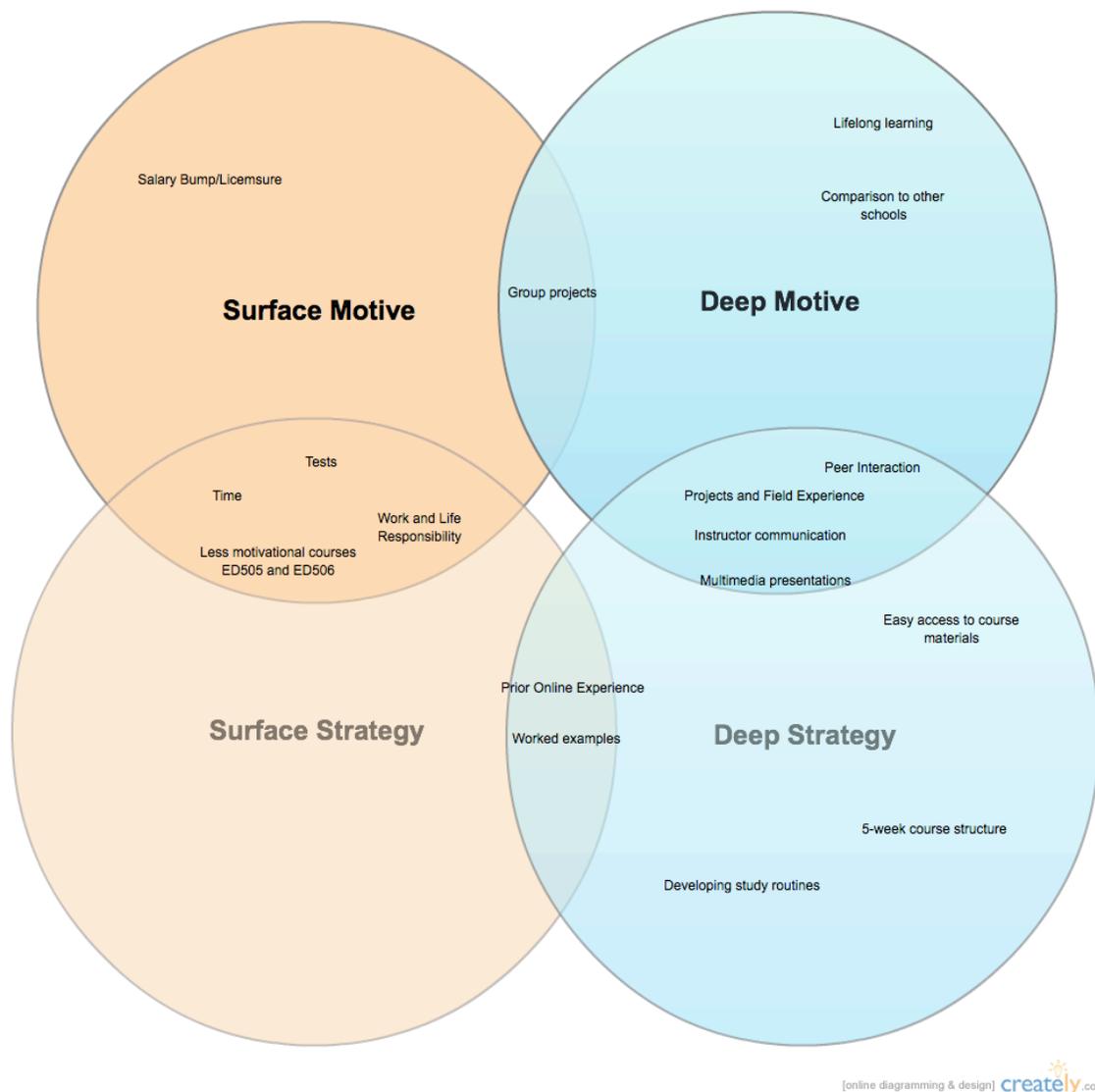


Figure 4.2. Themes revealed by interview analysis.

In examining the reasons for choosing the program, each participant clearly had his or her own unique personality and motivations for joining the accelerated educational administration program. While they were all educators, they had varying levels of experience, and three of the five even had previous experiences as graduate

students with which to compare to their current program. All participants also seemed to share a certain level of professional ambition, seeking the degree in order to gain the knowledge needed not just to move up on the salary scale, but also to enhance their professional and pedagogical knowledge, reflecting deeper levels of motivation. All participants described themselves as lifelong and self-disciplined learners, ready to take the next step in their careers, whatever that might be, which also spoke to their deep motives despite the fact that they have employed more surface strategies at times, referring often to the need to “get things done” due to personal life constraints. Despite the potential use of surface strategies, they also all reported having learned a great deal throughout their course experiences in the educational administration program, indicating that they at least believed that they had attained deeper levels of learning overall.

It was also noteworthy that participants had similar comments regarding many aspects of their accelerated online experiences, including the fact that they were overwhelmingly pleased overall with their program, and no one expressed regret about having taken the path to administration licensure that they did. The common structure of five weeks per class with a one week break was both predictable and workable within their busy schedules, and they all managed to find a similar method of planning and preparing for each week’s activities by noting what was due, reading ahead, and scheduling time throughout the week, and particularly the weekend, to complete given requirements. This type of conscientious planning reflects the adoption of some level of deeper learning strategy.

Participants also found that their projects were engaging, authentic, and highly applicable to real-world practice in education, and all agreed that the projects and field experiences were far more memorable and worthwhile than quizzes or exams. While not all agreed that group projects were ideal, few noted any particularly difficult issues with groups, with many participants complementing their peers on being exceptionally good colleagues and collaborators. While participants were not always inclined to make lasting connections with classmates, most expressed that they learned a great deal from their interactions with educators from around the country.

Participants also agreed that technology that is easy to understand and navigate is of critical importance to success in accelerated programs. All found that the university's course management system was simple and user-friendly, even for those who had never taken online classes before. For those who encountered issues or anxiety in getting accustomed to the online environment, their questions were answered quickly overall, and they soon found a routine that worked well for them. Participants all also generally felt that the technologies required to complete required course assignments were accessible and not outside of the realm of what was feasible for the average adult learner to use.

### **Instructional Design Analysis of Courses**

Nine of the ten core courses in the Educational Administration program, excluding the Internship course, were analyzed within their native Web-based course management system environment. The course materials reviewed included learning objectives, syllabi, assignment descriptions, discussion descriptions, assessment rubrics,

and exams, provided primarily in the common PDF or HTML format so that students could access them more easily. Biggs and Tang's (2007) SOLO Taxonomy and Merrill's (2009) e<sup>3</sup> rubric were used to gather data and analyze each course, and the complete instrument used for data gathering may be reviewed in Appendix B.

### **Course Objectives and the SOLO Taxonomy**

All courses analyzed in the Educational Administration program appeared to cover a range of learning objectives, moving learners through a minimal number of unistructural tasks into multistructural, relational, and extended abstract levels of understanding, as analyzed through the SOLO Taxonomy. All courses contained at least one example of a learning objective that related to each of these four main levels of the SOLO Taxonomy, indicating that the courses were designed with the intention of moving students toward deeper understandings and performances. In fact, most courses used the same or similar ILO verbs to describe what learners should be able to accomplish by the end of an activity, module, or whole course.

Course ILOs were found in varying places depending on the course and style of the instructor however, and were not necessarily all spelled out in the syllabus or introduction to course modules. Some ILOs were instead found in instructions for completing assignments and discussions, with several instructors reserving the syllabus and course module introduction for overall course goals that were not always written in measurable, observable terms. For example, instead of indicating that the student will analyze a case study of a principal's actions in a school and relate the analysis to his or her own administrative practice, some of the course syllabi used phrases such as, "The

student will develop a knowledge base of administration by examining organizational culture.” However, in reviewing the assignment directions and assessment rubrics, it is evident that students are not asked to simply report on what organizational culture is, but that they must analyze it within the context of a case study and synthesize with their prior knowledge of administrative theory in order to arrive at an evaluation of the case.

When compared to one another, courses were shown to share many of same the verbs used, with *describe*, *examine*, *summarize*, *analyze*, *apply*, and *reflect* being the most common (see Figure 4.3). This reflects an important finding that all courses follow similar patterns to help students achieve course and program goals. The majority of courses also placed the majority of their ILOs at the extended abstract level overall, reserving unistructural and multistructural objectives for introductory modules and topics, and extended abstract-level activities for the conclusion of a course or larger project, such as field experience or group work.

Level of understanding (action verb)	SOLO Level	Presence in each course								
		ED501	ED502	ED503	ED504	ED505	ED506	ED507	ED508	ED509
Identify	Unistructural				X	X	X			X
Define	Unistructural	X	X	X		X		X		
Examine	Multistructural	X		X	X	X		X	X	X
Describe	Multistructural								X	X
Discuss	Multistructural		X			X	X			
Compare and contrast	Relational	X	X		X			X		X
Analyze	Relational	X	X	X	X	X	X	X	X	X
Rationalize	Relational			X	X		X			
Collaborate	Relational						X			
Apply	Relational	X		X	X	X	X			X
Summarize	Relational	X	X	X		X		X	X	
Evaluate	Extended abstract								X	
Reflect	Extended abstract	X	X	X				X	X	X
Design	Extended abstract	X	X		X	X	X	X		
Synthesize	Extended abstract	X	X			X	X			

Figure 4.3. Illustration displaying course objectives for all analyzed courses based on the SOLO Taxonomy.

### Merrill’s Effective, Efficient, Engaging (e<sup>3</sup>) Rubric Results

Research question 2 related to the instructional design characteristics that may play a role in helping learners develop deeper levels of learning. Overall, the courses in the Educational Administration program address each of Merrill’s First Principles, based on analysis through the e<sup>3</sup> rubric (2009). When followed, these principles are assumed to encourage students toward deeper levels of learning; when the First Principles are not present in courses, they are assumed to be less effective, efficient, and engaging and therefore, more likely to promote surface approaches to learning. The following

subsections will provide thick descriptions of each course's curriculum and First Principles uses in more detail, focusing on those characteristics that appear to promote either deep or surface approaches to learning.

*Common course features.* Each course shared a certain number of similarities. The learning management system allowed each course to share the same graphical design and basic teaching approach, using an outline format to lead students systematically from one reading, activity, or presentation to the next. All courses not only looked similar, but also shared the same overall course outline, consisting initially of a "Getting Started" area, containing the syllabus, a learning management system tutorial, a welcome letter, and a "class café" discussion board for students to converse openly. Next, five modules, representing one week of work per module, were provided for the student, followed by a final resources section intended to include documents, Web links, and other important information for students to use throughout the term.

While the content of each module and resources area differed somewhat from course to course, all courses contained the same key student support features. Each learning module began with a list of objectives for the module, as well as a "To-Do List" section, containing a checklist of all activities and readings students would be asked to complete within the module. This served to frame the module for the learners, serving to orient the learners to the module so that they would know the expected performances before beginning their activities. Another feature common to all modules in all courses was a wrap-up checklist and "question-and-answer" discussion board. The checklist provided students with another measure by which they could assess whether they had

completed all required activities before moving on, performing a similar function to the To-Do List at the beginning of each module. The discussion allowed students to ask questions, share ideas, or post resources specific to the module topics, but not necessarily tied to an individual assignment or assessment.

Each course also featured two “key assessments,” or projects that are to be completed and submitted as part of the student’s complete program portfolio. These key assessments ensured that students met the program standards as they progress from course to course, and all supporting readings and activities helped build competencies necessary to complete these assessments. In other words, no activities, readings, or discussions were found to be extraneous or did not apply directly to the core learning objectives. With that said, in some courses, notably ED505 and ED506, an unusually large number of activities were present in each module. The courses contained nearly twice the number of individual readings and discussions as other courses, and included several shorter assignments and projects either in addition to or instead of larger projects that built over the course of the term.

*Divergent features between courses.* Because multiple faculty members worked on these course designs, it is inevitable that there will be some differences depending on an individual professor’s teaching style or preference. Faculty experience with teaching the courses may also have an impact, as some faculty may be newer to teaching these subjects, especially in an online environment, than others. Regardless of the reasoning, individual personalities were evident in the design of each course, though were not necessarily prominent due to the limited options available in structuring and designing

the courses themselves. Some of the areas where divergences were most evident were in the presence and length of presentation media, the way module discussions were used, the expectations and number of assignments and discussions per module, the styles of student-student and student-instructor interaction, the presence of quizzes and exams, and the format and length of projects.

*Activation, demonstration, and guidance.* Most of the courses that were analyzed activated prior knowledge at the beginning of each module through narrated slideshow media, providing links to new concepts by reviewing previously learned material. The readings in the courses themselves provided additional activation as well as illustrations and examples through such things as case studies and guided questions with detailed answers in order to promote deeper learning approaches. However, not all courses provided guidance beyond a reading or lecture in a consistent manner, although most readings and presentations were immediately followed by a related discussion or assignment, except for in ED506 where there were a number of readings given without follow-up activities.

In addition, while there were many complex topics and projects presented to students in the Educational Administration program, the majority of these did not provide a large number of worked examples of what an acceptable finished product might look like. While some textbook readings may have provided worked examples related to theories and practices within the readings themselves, although only ED502 and ED505 specifically stressed worked examples of experts responding to situations in the real world, which was accomplished through video vignettes of practicing principals.

ED501, ED504, and ED507 were the only courses to provide direct examples of previously completed student work to help students understand how to meet project objectives. It may be considered an appropriate coaching technique (see Coaching section below) for such courses in the first half of the program to feature examples, while those later courses faded direct examples and ask students to use their developing knowledge to complete tasks as they progress in complexity.

*Multimedia.* Merrill's (2009) rubric includes the evaluation of multimedia elements, and whether they adhere to effective principles. In the case of the Educational Administration courses, almost all contained narrated slideshow presentations except for ED508, which contained only readings and discussions for establishing baseline knowledge prior to engaging in two extensive field-based key assessments. In the other courses, presentations were found in most, if not all modules, and in some cases there was more than one presentation per module. In these latter cases, the presentations tended to be shorter in duration, lasting anywhere from one to five minutes, as opposed to those where only a few presentations were found in the entire course. ED503, ED504, ED506, and ED507 featured some of these longer presentations, which were found to last an average of 7 to 15 minutes each, with some lasting as long as 20 minutes.

With regard to student-created multimedia as an application of knowledge and skills, several courses asked for students to use creative technological approaches to presenting their projects. ED501, ED503, ED506, ED507, and ED509 all encouraged students to use technology to enhance written work, and ED501 and ED507 even

provided examples of how this could be done. However, most courses typically asked students to provide projects in some kind of written form, such as a Microsoft Word document. ED506 and ED507 were the only courses in the program to openly encourage students to use other formats for some of their projects, such as multimedia-based presentations, brochures, and collaborative items created in Web 2.0 tools such as Google Docs.

*Application Principle and Problem-centered curriculum.* Many of the Educational Administration courses used real-world problems and tasks as the basis for the curriculum. Most courses favored project-based work over tests, although ED503 and ED504 did feature weekly quizzes over readings. Progressively more complex real-world projects in the Educational Administration program included activities such as ED501's "shadow study," where students must find a willing practicing principal who will allow them to follow them through their school day for a period of time, then analyze and reflect on the experience. This kind of immersion in the real day-to-day life of a principal is found throughout the program in the form of various field experiences that ask students to do things such as: interview a family to understand the impact schools have on the community (ED502), analyze a school corporation's student handbook and discipline policies (ED503), analyze the superintendent and school board relationship (ED504), interview a principal and analyze his or her teacher evaluation policies (ED508), and eventually compile an extensive case study based on the experiences of a particular principal the student chooses to work with (ED509).

In those courses where a field component is not required, students still used authentic situations as the basis for their research and project work. At least one key assessment in every course, and in many cases both key assessments, involve analysis of real-life situations, case studies, and school policies. For example, ED507 asks students to locate and analyze the current state of an actual school district's operating funds and expenses, including the superintendent's reporting that might be included with such data. Even though the students are not necessarily consulting with an actual person, school expenditures are public information and typically available through school board meeting minutes, so the activity still asks students to examine real-life problems and solutions. Likewise, ED506 asks students to design several different types of communications regarding special education rights and legislation for parents, school board members, and students.

*Feedback.* The Educational Administration program appeared to provide feedback to students throughout the learning process. Extensive rubrics defining the performances required for each assignment and discussion were provided in all courses. Also, most assignments were built in stages, either through a formal series of assignments that would eventually become the entire key assessment, or through discussions and other types of assignments that set the stage for completing the final, key assessments present in each course. For instance, in ED502, students formed groups and began completing one key assessment, the "vision project," from the very first week of the course. Groups formally turned in a literature review, timeline, budget, and evaluation of potential obstacles involved in moving a school building toward the

group's perceived vision of a model school. This task included defining the ideal school culture, curriculum approach, and staff development model and rationalizing the choices based on current theory and research, and also required outlining and eventually presenting a detailed change management plan. By asking students to work through this extensive project over the course of the entire five-week term, they receive the opportunity for feedback throughout the process, both from the instructor and from each other, which in turn would be likely to produce higher-quality learning attainment.

The instructor of ED503, ED504, and ED507 used another feedback tactic that also appeared to be valuable. Initial presentations and readings were followed with an assignment asking for a reading response, and then an assignment was completed and turned in to the entire class group for feedback. Each assignment would eventually become part of a larger key assessment to be turned in at the end of the course, but the act of sharing every assignment with the class as they learned together along the way made this a potentially very useful learning experience. Each week, students were encouraged to provide each other with feedback and ask each other questions about why they came to the conclusions they did, turning the work of analyzing difficult topics such as law and educational business management into a collaborative process where students can learn from one another as well as from their own studies.

*Coaching.* The majority of courses in the Educational Administration program did not use coaching strategies overtly within their respective modules. Many courses did, however, begin with a wider array of readings and presentations toward the beginning of course, and gradually reduced the number of these informational materials

by the end. ED509 provided an excellent example of this, as its introductory module information moved from a focus on textbook readings to watching video of practicing principals presenting scenarios or debating their feelings on related topics from the course. This shift from the text to real-world examples asked students to synthesize what they learned earlier in the course in order to be able to apply knowledge of theory and practice to responses to actual situations. Several other courses similarly faded readings in favor of more application-based work in the latter modules, including ED501, ED502, and ED506.

ED503 and ED504 used a slightly different approach to coaching. In these courses on the complex area of school law, students were provided with opportunities to review court cases through the writing of case briefs. Over the first weeks of the term, a number of case studies were submitted and subsequently evaluated through discussion with peers and the instructor. Each brief allowed additional opportunities for practice in understanding legal decisions, their importance, and their impact on schools, until eventually case brief activities and discussions were faded in the last half of the course. At this point, students had to use what they learned in analyzing school law issues at a more complex level for policy analysis activities.

Finally, the course sequence itself might be considered as a form of coaching. Initial courses in the program tended to present more readings, activities, and worked examples related to foundational theories and topics important for school administrators. As the courses progressed, however, the focus shifted more toward direct applications of these theories into approaching real-world problems. Readings, discussions, and

projects related to background theory were gradually faded as the program went on, and in their place were case studies and more complex and intensive field experience work. By the time students reached ED508 and ED509, the last courses before the internship, students were ready to analyze and reflect on significant field experiences, and spend less time in the online courseroom reading and completing assignments.

*Interaction.* All courses in the Educational Administration program contained a number of discussion-based activities, totaling at least one for almost every module in every course in addition to the end-of-module discussions reserved only for topical questions. All discussions were of the typical threaded discussion forum type found in most modern learning management systems, where students post a message and others reply in an asynchronous fashion. Discussion-based learning activities were most often used to help students synthesize information learned from readings and presentations in the modules, and students were either prompted to reflect on this information (ED503, ED506, ED507, ED508) or answer related questions, problems, or short case studies (ED501, ED502, ED505, ED506, ED509).

Interaction opportunities were also provided through group projects and peer review in several courses. A team approach to project creation was used in ED502, ED503, ED506, and ED509, requiring students to work with a partner or in small groups to create at least one of the key assessments in the course. This gave students a chance to learn from one another as they worked toward a common goal, collaborating to come to consensus and to explore the nature of the problems set before them. In addition, ED503 and ED504 included peer review of every assignment, including legal case

briefs, policy reviews, and reflections on related readings and literature. In essence, students turned in their assignments to their peers and to the instructor at the same time, receiving feedback for improvement and further reflection from all of them.

### **Instructional Design Characteristics Summary**

With regard to research question 2, the analysis of the data from the e<sup>3</sup> rubric for each course in the Educational Administration program shows that nearly every one of Merrill's (2002; 2009) First Principles are present in at least some of the courses, indicating that deep learning is encouraged throughout the program. This is in part accomplished through the use of objectives at higher levels of the SOLO Taxonomy, as well as through the use of the First Principles as a guiding force in developing authentic projects, high levels of peer interaction, and a student-centered approach to instruction. However, deep learning may not be encouraged consistently in event course, and surface approaches may also be promoted within some of the courses. Figure 4.4 summarizes the courses and their First Principles data.

First Principles	Presence in each course								
	ED501	ED502	ED503	ED504	ED505	ED506	ED507	ED508	ED509
Activation of prior knowledge	X	X	X	X	X	X	X	X	X
Demonstrations and worked examples	X	X		X	X		X		
Guidance	X	X	X	X	X		X	X	X
Effective Multimedia	X	X	X	X	X	X	X		X
Problem-Centered Application	X	X	X	X	X	X	X	X	X
Real-world application (field experience)	X	X			X			X	X
Feedback	X	X	X	X	X	X	X	X	X
Coaching	X	X	X	X		X			X
Interaction – Discussions	X	X	X	X	X	X	X	X	X
Interaction – Group Projects		X	X			X			X
Interaction – Peer Review		X	X						

Figure 4.4. Illustration displaying summary of First Principles presence in each course.

### Summary of All Data

A number of themes were discovered during the data collection and analysis process. Results from the R-SPQ-2F, interviews, and from the review of courses revealed some prominent themes in understanding how learners approach their studies in the accelerated educational administration program. These results have implications with regard to the research questions, and the data may be broken down into the following main categories or themes:

- The impact of time and the need for self-directed learning

- Surface learning
- Deep learning
- Structure and features of courses
- Participant characteristics
- Participants' reasons for choosing the program
- The applicability of given projects and coursework
- Interaction with peers and professors and the need for flexibility
- Technology expectations and issues

Both research questions were informed by these categories. Within research question 1, results from the R-SPQ-2F and follow-up interviews showed that time, personal motivation and self-direction, course structure and content, the use of real-world projects, peer interaction, and technology expectations were important elements related to students' choices of deep approaches over surface ones. While those crunched for time may have sometimes chosen surface strategies over deeper ones in order to get work accomplished, they were motivated to work hard, and understood the expectations placed on them to learn independently, work together with others, use the resources available to them to explore given concepts and topics, and use technology in creative ways. These factors, combined with predictability in the course schedule that allowed students to generally plan their weeks around their schoolwork, caused deeper strategies and motives to win out more often over surface ones, and were likely to promote deeper levels of learning overall.

With regard to research question 2, instructional design characteristics found in the courses supported the findings for research question 1 in that deep learning approaches were promoted through course design. Courses covered objectives across the breadth of the SOLO Taxonomy, and activities addressing these objectives provided a number of opportunities for real-world practice, peer collaboration, field experience, and reflection. While not all learners found the content of the courses themselves to be of great intrinsic value, the courses generally adhered to Merrill's First Principles model of instructional design, resulting in courses that built logically and systematically from one activity to the next to bring students toward deeper understanding and more advanced performances, even under accelerated conditions.

It is possible to break down each main theme further, and identify those that are the strongest or most essential to understanding learning approaches in accelerated graduate programs like the educational administration program. The most apparent aspect that appeared to interfere with learning approach was time. In an accelerated program, time is at a premium, and this is especially true when learners are already maintaining job and family responsibilities. Time influenced not only how and when coursework got done, but also the processes through which learners approached their work and the types of assignments made available to them, relating to both research questions. Rather than settle in and spend an entire day working on an assignment, in many cases, learners might spend small amounts of time each evening working on their readings or other studies needed to complete an assignment, then spend the precious time available on a weekend to finish and turn in the work. In addition, when there are

other students involved in a group project setting, learners must also navigate each other's hectic schedules to complete their work. Having enough time for career, home, and school is a delicate balancing act that students in the program face routinely, and having the self-direction and discipline needed to maintain that balance is crucial for success.

Despite having time as a barrier, however, learners appeared willing and able to work diligently so long as the coursework was interesting and directly beneficial to them as education professionals. Courses move very quickly, but not so much so that it is impossible to absorb what is being learned. On the contrary, learners tended to work hard to learn a great deal, and for the most part, they were rewarded with retained knowledge and good grades. When courses were structured in such a way that they were allowed to build larger projects – especially meaningful and authentic projects that related to real-world issues – over time, they found even more learning benefit. However, there was little tolerance for those courses that did not provide directly useful and applicable information. Those courses that demanded little in the way of projects or substantive responses on discussions, instead relying more on quizzes and exams, were perceived as less valuable overall, and the knowledge from those courses was retained far less.

Another important aspect related to learner approach in accelerated coursework is learner and instructor interaction. Because learners are somewhat isolated in the online environment, it was found to be important to include activities that encouraged engagement and helped students build relationships with one another and with the

professor. Participants also noted this instructional design characteristic, as found through exploration of research question 2, during interviews relating to research question 1. Activities like discussions and group assignments allowed students to learn more through the experiences of others, as well as encouraged students to approach professors and colleagues when they had problems or questions. The need for flexibility in terms of scheduling, working together, and in approaches to completing assignments was found to be a very important aspect of learning in the educational administration program. While learners may be separated by distance from one another, they are no less unique as individuals, and each one brings a different perspective into the online classroom.

Finally, and related to issues of flexibility, the role of technology was also an important theme found within the data. While participants found technology was rarely a barrier to the learning process as far as access to learning materials, it was clearly an expectation of that all learners should be self-directed and creative when it came to technology. Or, in the words of one participant, “the expectation is that you’ll produce something that makes you look like you live in the 21<sup>st</sup> century.” This notion influenced activity choices within many courses, as well as the provision of guidance through worked examples as seen in the analysis of research question 2. Despite the examples, some participants wanted the flexibility to go beyond the basics to create something that they felt the project truly warranted, using any variety of technological tools they might have available. Others felt that different technologies gave them the chance to express themselves in a way more conducive to their personal learning styles. Some participants

also reported benefitting from the wider array of multimedia provided to them as learning tools within courses, such as presentations personalized by individual instructors. Such use of media thus appeared to stimulate deeper learning approaches in participants, relating to research question 1.

#### **Chapter 4 Summary**

This study explored the approaches to learning used by students and the mechanisms in place supporting deep or surface approaches to learning within the context of an online accelerated graduate program in educational administration. Research question 1 was addressed through analysis of data from the R-SPQ-2F and from interviews with volunteer participants. It was found that this program's short courses of only five weeks each have been shown to be challenging, but despite this, participants appeared to work hard, and tended to choose deeper approaches to learning over surface approaches whenever they could. Research question 2 was addressed through analysis of the nine core courses in the program, although interview data also provided some insight into this question, as well. Characteristics found within the courses and noted by interview participants with regard to structure, range of activities and technological media, and level of interaction and feedback provided, also appeared to support these deeper approaches and require learners to move through most levels of the SOLO Taxonomy within each course. The results of this study are further discussed in chapter five, including guidelines for program and curriculum developers seeking to begin or enhance existing accelerated graduate-level online programs.

## **CHAPTER 5. CONCLUSIONS AND DISCUSSION**

### **Introduction**

This study used an embedded single-case study design to explore accelerated online learning at the graduate level and the types of approaches students use toward learning in such environments. The instructional design characteristics, including activities, assessments, and types of interactions present in courses that are accelerated, or considered to be compressed in terms of the time allowed for completion, were also viewed in terms of whether they may promote either surface-level or deeper approaches to learning. The study attempted to address gaps in current understanding of the interplay between learning approach, the acquisition of deep, expert-level learning, and accelerated online programs at the post-baccalaureate levels. This chapter presents a summary of the study and its findings, including a discussion of findings related to the research questions, and the implications of the results. The limitations of the study will also be part of this discussion, in addition to the significance and possible extensions of the study for further research.

### **Summary of the Results**

The purpose of this investigative case study was to explore student learning approach and instructional design strategies and characteristics of online asynchronous accelerated courses at the graduate level. Participants were invited from a master's

degree program conducted at a medium-sized Midwestern public university in educational administration. This program consisted of ten 5-week courses, all conducted entirely online through the university's course management system, and could be completed in about fifteen months. The researcher conducted a thorough course analysis of the nine core courses in the program, not including the capstone internship course, and also interacted with volunteer participant students from the program through distribution of the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) (Biggs, Kember, & Leung, 2001), which relates to student learning approach, and through audio-conference follow-up interviews. As students may live in any part of the United States and be part of the degree program, it was impossible to conduct face-to-face interviews during this study. In all, 17 of 136 registered students participated in the questionnaire, and five of those were willing to participate in a follow-up interview regarding their learning approaches in their coursework. While the sample size for this study was not large, results from the rich triangulation of analyzed data showed strong and consistent trends, allowing the researcher to identify a number of important patterns and themes related to the research questions.

The need for the study emerged from review of literature in distance education, accelerated learning, and learning approaches in graduate coursework. The concept of deep learning is a complex one, involving the development of a more complete, expert-level understanding of a given topic or procedure. When concepts are learned deeply, they are able to be applied more readily to a wider variety of situations and contexts, and can be integrated with new and increasingly more abstract concepts in more meaningful

ways (Biggs & Collis, 1982; Bransford et al., 2000; McCune & Entwistle, 2011). Once a student reaches master or doctoral levels of study, it is increasingly more important to ensure that he or she attains such expert understanding of the given field (Wier et al., 2005). However, such deep learning is more difficult to understand and measure in online environments, as many variables can impact and interfere with the learning process, including course design structures, the level of interaction present in a course, the type and quality of learning materials provided to students, and students' personal intrinsic motivation for study (Bekele & Menchaca, 2008; Bernard et al., 2004; Shachar & Neumann, 2010). The complexity becomes even greater when time for learning is reduced by accelerating the coursework (Johnson, 2009; Seamon, 2004; Tatum, 2010). As accelerated programs are in demand for adult learners whose time is short and needs are great, it has become increasingly important to seek out ways to ensure that online coursework encourages students toward those deep levels of learning necessary for success.

The literature revealed that the interplay between time, course design, and learning approach warrants further investigation, particularly with regard to graduate-level study. Two research questions and several sub-questions emerged, and the explorations of these questions through data collection and analysis provided insight into the learning approaches adopted by students and the roles played by various instructional design strategies in graduate-level online accelerated coursework. The questions were:

1. *How do learners approach their learning in accelerated, asynchronous online graduate courses?*
  - a. How do learners come to select deep learning approaches as opposed to surface learning approaches in accelerated courses?
  - b. How do learners describe their accelerated learning experiences in terms of encouraging deep or surface learning approaches to within their chosen field of study?
  
2. *Which instructional design characteristics and strategies used in accelerated asynchronous online courses play a role in helping learners reach deeper levels of learning?*
  - a. What design characteristics appear to promote deep learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?
  - b. What design characteristics appear to promote surface learning approaches based on learner reflection and comparison to Merrill's (2002) First Principles model and the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007)?

Research question 1 was explored through analysis of R-SPQ-2F responses and from collected transcriptions of interviews conducted with students who have participated in courses in the educational administration master's program that served as the core unit of analysis for this embedded single-case study. The questionnaire and

interview questions are found in Appendix A and C respectively. Research question 2 was explored through analysis of course characteristics, including syllabi, assignments, assessments, and other learning materials present in nine of the ten courses in the program (excluding the internship). The instruments used to conduct this analysis may be found in Appendix B, and included adaptations of the SOLO Taxonomy for analysis of course intended learning outcomes (Biggs & Tang, 2007) and the Effective, Efficient, and Engaging (e<sup>3</sup>) rubric (Merrill, 2009). During the thematic coding process, a number of themes emerged, including five central categories: the impact of time and the need for self-directed learning, structure of courses, the applicability of given projects and coursework, interaction with peers and professors and the need for flexibility, and technological expectations and issues. These will be discussed in more detail in the next section of this chapter.

### **Discussion of the Results**

Figure 5.1 shows the interrelationships between all major themes found in the study results and the types of learning approach measured by the R-SPQ-2F – surface motive, surface strategy, deep motive, and deep strategy (Biggs et al., 2001). The researcher found that while these relationships were often complex in nature, more themes pointed to deeper approaches as opposed to surface approaches to learning overall. Some themes also did not necessarily only point to one approach, as depending on how a particular participant may have viewed or articulated an item during interviews, or how a strategy was implemented within a given course, it may have stimulated either deep or surface learning approaches. This was particularly true for the

theme of participants having prior online experience, as well as the use and presentation of worked examples.

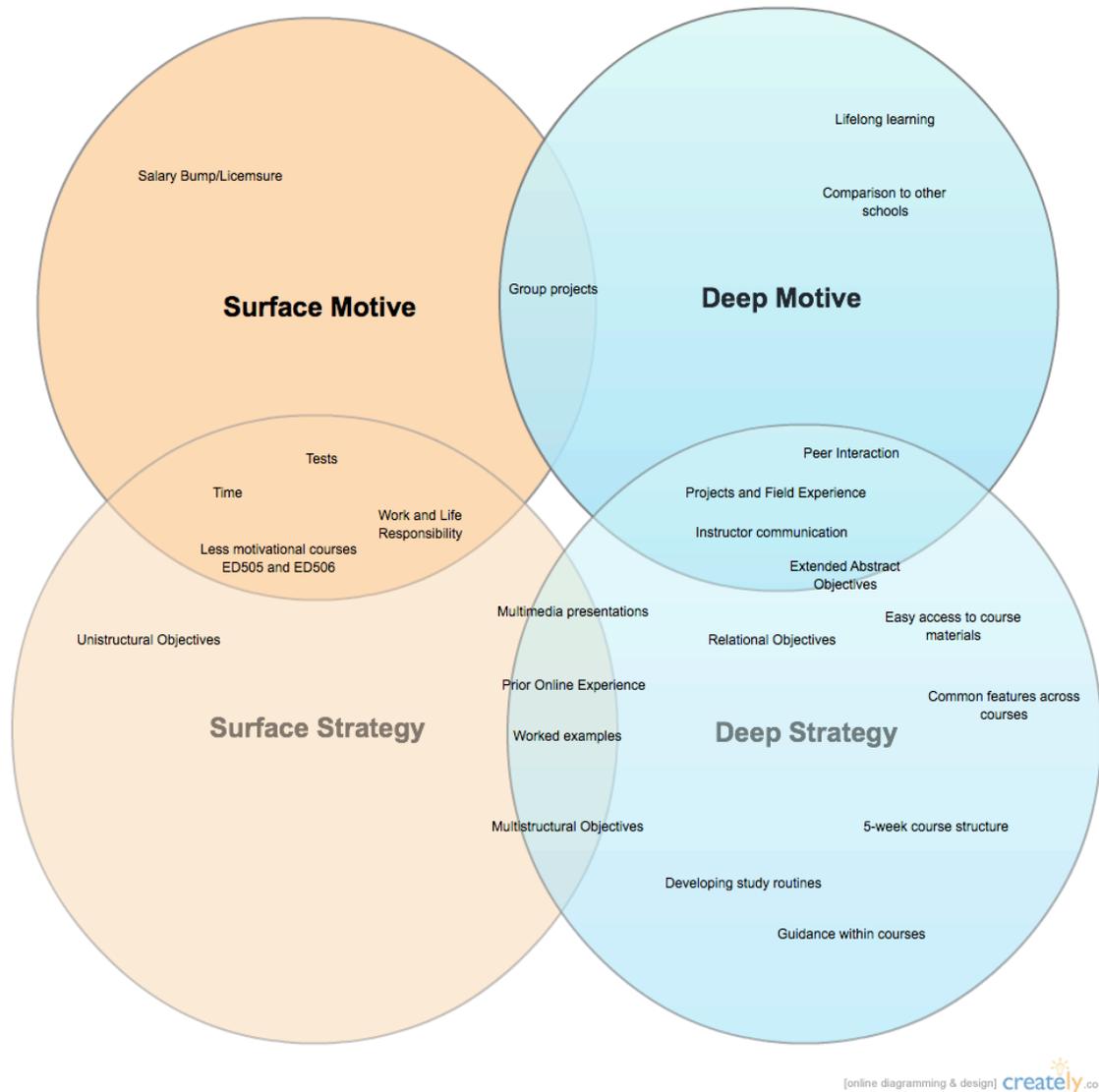


Figure 5.1. Model of interrelationships between themes found in the study and surface motive, surface strategy, deep motive, and deep strategy.

## **Research Question 1**

### **Time**

Research Question 1 asked about learning approach in accelerated, online graduate programs, inquiring about the choices learners make between deep and surface learning approaches. The R-SPQ-2F and interview results revealed several points of interest, perhaps the most important of which was that the participants in the educational administration program are extremely busy individuals. They take on extra roles at work, have family and personal health concerns, and are continually working toward their next big achievements in life and career. Because learners had only have five weeks per course in the educational administration program, as opposed to sixteen in a typical semester at the university, they had to use their time as wisely and efficiently as possible. Time for study was therefore typically relegated to evenings and weekends, sometimes limiting their options regarding when they could get their best work accomplished and turned in to their instructors. For example, many participants during interviews mentioned their strong preference for Sunday deadlines over weekday deadlines, and when instructors had different or changing expectations with regard to due dates, students tended to react negatively. The difference of just one day could make a world of difference in terms of their ability to get work done in a timely and effective manner, and as such, may have an impact on whether surface or deeper strategies were used. As Bob had indicated, “There were a few times where I didn’t really go above and beyond . . . I just kind of tried to get everything done because I was busy.”

Struggles with time may also be to blame for the significantly higher average score for surface strategy as opposed to surface motive on the R-SPQ-2F. Pursuing extra learning opportunities, regardless of interest level, is not always achievable for students that work and care for families while completing their education. Therefore, it is likely more difficult to go “above and beyond” on a routine basis, and for many students, simply getting the work completed is in itself an achievement. The idea of “getting it done” was expressed by many participants. This does not mean, however, that these learners were motivated to enter and persist in their program by surface-level desires such as increased salary or gaining access to administration-level jobs. While some indicated during interviews that they would in fact receive an increase through attainment of the master’s degree, and were interested in moving to a position out of the classroom, no participant indicated that these were primary motivations. Instead, a genuine interest in becoming a better and more well-rounded educator was prevalent in responses from all five interview participants.

Learners in accelerated programs tend to be self-directed and self-motivated, as found in the literature (Johnson, 2009; Penprase & Koczara, 2009; Wlodkowski & Ginsberg, 2010), and the results of this study support this. Deep motives and strategies were far more common with respect to responses on the R-SPQ-2F. The means related to deep motivation and deep strategy were nearly double those corresponding values at the surface level, and this difference was statistically significant. This indicated that even though learners may have sometimes adopted surface approaches due to time constraints, overall they strove toward deep strategies whenever possible, and were

deeply motivated to succeed and learn. With that said, there were some elements of courses that invoked higher levels of deep motivation than others, and for those courses or assignments that were not perceived as useful or engaging, learners did not appear as willing to try hard to do well.

The findings regarding the interplay of time and learning approach echo what was found in the literature (Driessnack et al., 2011; Johnson, 2009; Penprase & Koczara, 2009). Students in accelerated programs have been found to be frequently overwhelmed by their work and personal responsibilities, but are also genuinely interested in expanding what they able to do within their chosen fields. In other words, their motivations tend to be deep regardless of whether they use deep or surface-level strategies to reach the objectives given to them in their courses. In fact, thematic coding of interview transcripts showed only two references to surface-level strategies and three references to surface-level motives, while 11 references were made to deep strategies and 18 references were made to deep motives. The tendency toward deeper motives and strategies overall indicated consistency between the study results and available literature that learners in accelerated programs tend to be driven, focused, and motivated by the potential to make a difference in the lives of the people they served in their respective fields (Penprase & Koczara, 2009).

### **Learning Approach, Course Content, and Learner Experience**

Other issues were noted as potentially capable of inducing surface-level approaches to learning as opposed to deeper ones. Content that was not interesting or directly useful to students tended to be given less enthusiastic reviews. For example,

Andrea's review of ED505 revealed that for her, the course was not interesting or directly applicable to her work as an educator. As in Driessnack et al.'s (2011) study, where students reported valuing new processes and insights over general content knowledge in their accelerated coursework, Andrea seemed to prefer courses like ED506, which was directly related to her content area of special education and taught her a great deal of new processes and information that she could apply immediately. Also, for those several other respondents who also found ED506 to be difficult and demanding in terms of time spent in the course, it was noted that the course's content was interesting, but its demands and emphasis on shorter projects and quizzes made it stand out as a "least favorite" with many. Perhaps with fewer readings and related exam and "mini-project" content, and more practically applicable projects, it may have received higher praise and not been a course that students tended to speak about more in terms of surface approaches.

Prior experience with online and graduate-level coursework also appeared to have some influence on learning approach. The interview participant with the highest Surface Strategy score on the R-SPQ-2F was Kate, and she was also the participant with the most experience learning online, as she had previously obtained a master's degree at an online university. Bransford et al. (2000) indicated that those with who have gained expertise in a particular subject or process are more adept at making decisions related to that subject. Therefore, it may be possible that Kate's experience allowed her to pick and choose the times when she would use deep versus surface strategies with more confidence and dexterity than other participants. On the other hand, Jessica, Bob, and

Jenny, having had no prior online experience, may have had to work that much harder to establish a work schedule, understand the technology involved, and otherwise engage themselves in the distance environment, leading to the necessity to use deeper strategies in order to stay on top of things and be successful. Indeed, Jessica spent a good portion of her interview discussing the processes she went through to prepare for each new semester, and found that it was only after three courses has passed that she felt comfortable with her approach to her coursework.

The type of work that was involved in a particular course was further found to have some influence on the choice of surface or deep approaches, according to participants. Participants universally heralded courses that employed practical and engaging projects and field experience components during interviews. They felt that such experiences were far more authentic and offered more real-world opportunities to apply their knowledge, even when compared to exams that required extensive essay writing versus multiple-choice quizzes where answered could easily be looked up during test-taking. The importance of practical, hands-on projects is also reflected in the literature, including in the work of Merrill (2002), who noted that authentic problems were at the heart of meaningful learning experiences designed with the First Principles of instructional design in mind. Likewise, Dreissnack et al. (2009), Kasworm (2008), and Penprase and Koczara (2009) each noted the importance of real-world activities and interactions, particularly for adult learners in accelerated online environments. Such activities allow for more direct correlation to the skills learners need on the job, and provide needed practice in applying new techniques and processes.

## **Research Question 2**

### **Intended Learning Outcomes**

Objectives found in each of the nine courses that were reviewed as part of this study were spread across the spectrum of the SOLO Taxonomy (Biggs & Collis, 1982; Biggs & Tang, 2007), with nearly every course containing a mixture of intended learning outcomes (ILOs) at the unistructural, multistructural, relational, and extended abstract levels. ILO consistency between courses may not just serve to help students feel oriented within each course, but may also serve the purpose of ensuring that students are able to work through from basic to advanced applications of course topics and theories, even within the short timeframe given to each course. This is consistent with Biggs and Tang's (2007) discussion of the SOLO Taxonomy's intended use, indicating that learning demands increase in complexity in stages, and that these stages can be reflected through the SOLO levels employed. Approach to learning is related to this, as it deepens as SOLO level increases. Therefore, the courses in the educational administration program appeared to follow a steady and logical progression in order to both increase knowledge – or move quantitatively from unistructural through multistructural) – and deepen understanding – or move qualitatively from relational through extended abstract thinking (Biggs & Tang, 2007). Based on comparison between course analysis and R-SPQ-2F data, the study found that not only did courses address the SOLO spectrum reasonably well, but also, students' significantly higher levels of deep motive and strategy in learning approach seemed to reflect that learning was in fact moving from the quantitative to the qualitative aspect.

## **Online Course Structure**

The structure of course offerings overall was consistent in terms of the length of each course and its presentation. Each course was broken up into five weekly modules, allowing students to become quickly acclimated to the environment at the start of each course. A consistent approach to course design that adheres to some basic standards has been shown to be effective in improving student learning, as it eliminates one of the most prevalent intervening variables found in research on distance learning effectiveness (Bernard et al., 2004; Shachar & Neumann, 2010; Swan et al., 2012). In examining the triangulation of the three types of data gathered for this study, interview participants also reported that they enjoyed the focused structure of the five-week courses and the online course management system, which is congruent with the available literature. In fact, all students commented positively about both the term length and the way in which their materials were presented to them online.

Multimedia was used in nearly every course except ED509, where no instructor presentations or other media were made available. However, in every other course, some level of media was provided to both give students information about the course topics as well as provide them with tips and overviews of assignments. Occasionally, these presentations did violate principles of effective media, such as putting redundant text onscreen with voice-over narrative, or using only text where a combination of graphics and text may have been more effective (Low & Sweller, 2005; Merrill, 2009). Also, shorter and more targeted presentations tend to be less likely to induce extraneous cognitive load by not providing too much information at one time (Low & Sweller,

2005; van Merriënboer & Sweller, 2006). One instructor in particular appeared to spend a great deal of time developing his presentations, and through course analysis, it was found that this instructor did provide valuable personal insights into course topics that may have helped students complete projects with more success. Kate also noted this feature of the instructor's presentations and even though these presentations were, by comparison, nearly two to three times longer than other instructors' multimedia presentations, student appeared to welcome the information they provided in spite of this.

However, some participants did note a lack of direction or clear assessment criteria present in some of their individual course assignments, and their comments were substantiated in the review of the course materials. Often, instructions for completing assignments were straightforward and simple, and less than a page in length, although in some cases, the assignment may have warranted more explication in order to provide clear guidance. Also, in some cases, rubrics were taken from standards documents related to the overall program standards adopted within the program, but were not necessarily related directly to what students had created, written, or presented for a given assignment. Even though online environments demand a certain level of self-direction on part of the learner, instructions and assessments must be clear in order for students to understand what is expected of them (Bernard et al., 2004; McCune & Entwistle, 2011; Wuensch, Aziz, Ozan, Kishore, & Tabrizi, 2008). Without such clarity, too much room for interpretation is available, and students may – as in the cases of Participants 1, 2, and 3 in the present study regarding some of the courses they had taken – find themselves

confused, unhappy with the learning experience, or unwilling to devote deeper learning approaches to that activity.

### **Instructional Approaches**

Several primary strategies were used to help students meet course objectives, including assigned readings with reflections or quizzes to gauge understanding, group discussion, individual and field-based projects, group projects, and exams. Of all of these, readings and discussions were used throughout all courses in order to provide foundational understanding and to allow learners to synthesize what they had learned by debating and answering questions with their peers. Projects were also prevalent, allowing for hands-on, authentic demonstrations of what learners know and are able to do. Field experiences where learners interacted with real educators, school buildings, and districts provided the opportunity to become immersed in the day-to-day reality of becoming a school administrator, although even those projects that were not field-based had contained elements of real-world practice. Students analyzed and reflected upon cases and scenarios that would normally come up routinely for an administrator, such as communicating with parents, writing school improvement plans, or evaluating teacher performance.

Merrill (2002; 2009) noted that such an authentic, problem-based approach, as demonstrated in most educational administration course projects, is an essential element to his First Principles model of instructional design. Without a basis in the real world, students are unlikely to develop the most complete understanding of a situation possible, leading to a lessened ability to solve a wider range of problems associated with the topic.

This idea also coincides with research on deep learning, where the ability to apply knowledge and make reasoned decisions comes through practice in a variety of contexts, including those that can draw upon learners' prior knowledge to help build more complex schemata around a topic (Biggs & Collis, 1982; Bransford et al., 2000; McCune & Entwistle, 2011). It is no wonder, then, that participants universally reported enjoying projects more than exams in their courses – they were no doubt learning more deeply about course topics and getting more hands-on experience in what real administrators experience in the workplace.

Quizzes and exams were indeed used more sparingly in the program overall, and this was likely welcomed by students, as many participants mentioned the ineffectiveness of such strategies during interviews. Multiple-choice exams in online courses do tend to be open to cheating practices without proctoring, making them a poor measure of student learning unless they can be tied to other types of assessment (Pearson, 2011). Few participants in the current study noted feeling that they had learned a great deal from the exams used in some of their courses, and some even complained about them. In fact, had it not been for the ED506 course in which some reading quizzes were malfunctioning and reporting incorrect scores, those exams may not have had much staying power with participants at all. However, ED503 and ED504 both use essay exams in each module, and participants did not complain or state that they learned less in these courses. This may be due to the fact that these courses also employed the analysis and writing of legal case briefs as a major learning activity, and

that essay exams require more diligence in study in order to succeed than multiple-choice exams may allow for.

A final course design element that received mixed criticism from participants was the presence of worked examples for projects. Worked examples as demonstrations of what is expected in a project can help learners understand what a finished project should look like, and can serve as just-in-time assistance and a reduction on extraneous cognitive load (Merrill, 2002; 2007; van Merriënboër & Sluijsmans, 2009). This may be particularly true in online environments where other types of demonstrations can be limited due to the nature of the virtual courseroom. Few courses in the present study provided examples of completed assignments from previous semesters, although it was possible that students could have asked for examples from professors at any time during a course in session.

However, examples may have either of two effects: helping students complete the project successfully, or limiting their imagination to only what they have been shown. Atkinson, Derry, Renkl, and Wortham (2000) indicated that such structured guidance can often be effective for basic skills development, but may serve to prevent creative thinking and unique ideas amongst learners at more advanced levels. When students are shown what is successful, they may not think that other, alternative approaches may be just as successful, leading to a less deep approach to the project than otherwise might have been possible. Andrea, during her interview, mentioned this very phenomenon and indicated that she frequently tried not to follow the lead of given examples because she enjoyed the opportunity to be creative. But given that others,

such as Kate, mentioned the helpfulness of examples, it is difficult to make the assumption that many more students shared the opinions of Andrea.

### **Peer Interaction**

Students also reported enjoying interaction with their peers, and every course featured a number of discussion forums for various purposes, including reading review and reflection, debate, analysis, and case study response. Swan et al. (2012) noted that the most effective way to implement discussion in creating effective course designs that reach deeper levels of learning is to use them as collaborative spaces where learners can draw upon their experiences to share in analysis and knowledge construction as a group. Many, though not all, of the discussion activities found in the educational administration program were designed in this way, allowing students to learn from one another, agree and disagree, and discover the nuances of the topic based on each learner's individual knowledge and background. Particularly when so many students were located in different locations around the country, a multitude of peer perspectives could potentially stimulate interest in course content and promote richer dialogue between peers, leading to deeper understanding of course theories and topics.

In addition, although some participants noted a dislike or dissatisfaction with working in groups with other students on projects, it should be noted that the majority of courses in the program did not feature extensive group projects. While there was a great deal of collaboration found in the form of discussion activities, projects where groups did research together and presented a product were only found in four of the nine courses, ED502, ED505, ED506, and ED509. ED505 and ED506, however, were also

the courses noted as having less clear instructions and possibly weaker course material than others. Wang et al. (2008) cautioned that distance learners need strong instruction when it comes to group projects in particular, as their physical separation can make it more difficult for them to focus and work through more abstract concepts together, especially if some level of emotional engagement is present because of the topics under study. Wong and Lam (2007) found that groups were most successful when learning approach was deep as opposed to surface-level, and since the tendency in the educational administration program was toward the deeper end of the spectrum according to results from the R-SPQ-2F, it is likely that the positive reports of group interactions, particularly in other courses, were genuine and more common than the more negative reports.

### **Limitations**

The study contained a number of notable limitations. Most importantly, as a case study, the results were limited to one setting, with a relatively small sample of the overall population of graduate students in accelerated online programs. This was not for a lack of effort, however, as multiple attempts were made to contact students through several channels of communication. However, due to their extremely busy schedules and many work, school, and personal responsibilities, receiving responses was extremely difficult. Those students who did respond did come from a relatively wide geographic area, however, even though the university they attended virtually was located in the Midwest. The university was also a public one, and it may be possible that studying accelerated programs at other types of institutions, including private

universities, may garner different results both in terms of response rate and the types of responses that were given.

Another notable limitation was that the program under study was a master's program in educational administration. While data from fields such as nursing found in the literature revealed a number of similarities and correlations to the data gained from this study, it is possible that student approaches to learning and course designs used may differ greatly from program to program, and from discipline to discipline. Doctoral-level programs may also differ from master's level programs in terms of student learning approaches and in terms of the way courses are constructed and delivered online.

### **Implication of the Results for Practice**

A number of elements from the results of this study have implications for the instructional design of accelerated online programs and courses. Based on this research, the program that served as the unit of analysis for this embedded, single-case study had a number of features that appeared to invoke deeper approaches to learning in its students. These included the frequent use of hands-on and real-world projects and field experiences, a user-friendly online interface, consistent expectations with regard to due dates and time spent on assignments throughout a program, responsive and caring instructors, and inclusion of frequent opportunities for students to learn from one another in discussions and other collaborative mediums. While individual students did not always welcome group activities, on the whole, it appeared that learners at the graduate level benefitted a great deal from learning from one another through extensive discussion and working together toward shared goals.

Student also appreciated the fact that their program generally allowed them to adopt a routine where they could read and develop their ideas over the week and work hard on evenings and weekends to complete course assignments. The predictable five-week course structure was noted as highly favorable for many students, as it allowed for in-depth exploration of objectives, but did not go on long enough to become boring or leave room for projects that seemed extraneous. However, those courses had to be sensitive to students' personal and professional time constraints in order to be most effective. When courses strayed from the norm in terms of due dates and expectations as to the amount of work given from one week to the next, students reported having trouble keeping up and staying focused. It was in these situations that students were most often likely to use more surface learning strategies, as they found themselves too short on time to delve into the assignments more deeply.

All projects, exams, readings, and discussions in the educational administration program were also focused directly on key objectives and expected learning outcomes, leaving no room for things that might be considered "extra" or "just for fun." This also assisted in promoting deeper learning strategies, as little was seen as extraneous or not valuable, and thus, students felt like they learned a great deal. In some cases, students even reported exploring some additional areas of topics on their own because of their personal interest levels, but they were free to do this at will and when they had time, making doing extra research enjoyable rather than something to be seen as drudgery.

Another strong implication from this research is that learners in online courses do not feel that they learn as much from exams and essays as they do from hands-on

projects and collaborative experiences. Surface strategies may be used more often when students are completing tests, where they can easily look up answers in their texts, or when they are writing theoretical essays that do not have a strong basis in the practical application of their respective fields. This may, in fact, be true for any type of online course, and not just within accelerated programs, although additional research would be needed to establish this. However, it was clear, particularly during learner interviews, that projects were far more valuable than other types of assessment strategies, and that those with clear parameters and goals stated were the most useful of all. When learners in accelerated courses are given vague or incomplete directions, they may have trouble moving forward, and may adopt surface learning approaches simply to get the task accomplished because it is not as meaningful as something that is well-explained and focused.

### **Recommendations for Further Research**

While this study provides some important contributions to the instructional design field, it is important to note that there are ways in which accelerated online programs can be further explored. The study was primarily exploratory in nature, and as such provided initial insight into graduate-level online accelerated programs and learning approach. Multiple perspectives were included from individual students, and this may introduce a certain level of bias into the results, as is true with all qualitative research to some degree (Merriam, 1998; Yin, 2008). A greater number of participants are necessary in order to make more confirmatory generalizations with regard to graduate student learning approaches in accelerated environments. Follow-up research

may attempt to use an experimental design instead of a case study design as well, attempting to make more specific determinations that are repeatable, even with different samples of learners.

Further studies in other types of accelerated programs, such as graduate programs in other disciplines, undergraduate programs, or professional certification programs, would also be useful contributions to the field. By examining learning approach in different types of accelerated environments, with a different target population, it may be shown that certain instructional design strategies and characteristics are more or less useful than others. What works within one population and content area may be confusing, unwelcome, or unable to stimulate deeper learning approaches in another. Additional studies are necessary to understand the complexities of effective online instructional design in accelerated courses.

This study also examined learning approach, but did not go so far as to attempt to measure learning acquisition. Because of the many variables at play, studying learning within online environments is generally difficult (Bernard et al., 2004). However, deep learning approach is often presumed to lead to deeper learning acquisition and therefore, higher levels of expertise and understanding (Biggs & Collis, 1982; Biggs & Tang, 2007; Bransford et al., 2000). In order to establish whether this relationship is present and whether accelerated programs are able to truly produce competent graduate students who are experts in their given fields, it would be prudent and beneficial to explore ways to research this aspect further.

## **Conclusion**

The results of this study showed that deep learning is indeed possible within accelerated graduate-level online courses, and that it should not be assumed that the types of individuals who tend to participate in them are looking for a “shortcut” to degree attainment. On the contrary, this study showed that learners in accelerated programs can be just as driven, ambitious, and excited about learning – if not more so – than those who commit to a face-to-face master’s or doctoral program that may be several years in duration. Everyone, of course, has his or her own reasons for pursuing higher education, and regardless of the venue he or she chooses, success is inevitable when the right amount of self-discipline and desire is evident. But, an accelerated program is not simply about finishing a program in a shorter period of time – it is about allowing those with limited personal and professional time the opportunity to achieve the same level of success as those with more time to spare. If an accelerated online graduate program offers consistent design elements and expectations, immersive and engaging project-based curriculum, and multiple opportunities to share with and learn from peers, it is likely to provide students with a memorable experience that will encourage them to dig deeply into what they are learning.

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## APPENDIX A. THE REVISED TWO-FACTOR STUDY PROCESS

### QUESTIONNAIRE (R-SPQ-2F)

The R-SPQ-2F was originally published in Biggs, Kember, & Leung (2001) and is reprinted and used with permission from the authors.

This questionnaire has a number of questions about your attitudes towards your studies and your usual way of studying.

There is no *right* way of studying. It depends on what suits your own style and the course you are studying. It is accordingly important that you answer each question as honestly as you can. If you think your answer to a question would depend on the subject being studied, give the answer that would apply to the subject(s) most important to you.

Please fill in the appropriate circle alongside the question number on the “General Purpose Survey/Answer Sheet”. The letters alongside each number stand for the following response.

A — this item is *never* or *only rarely* true of me

B — this item is *sometimes* true of me

C — this item is true of me about *half the time*

D — this item is *frequently* true of me

E — this item is *always* or *almost always* true of me

Please choose the *one* most appropriate response to each question. Fill the oval on the Answer Sheet that best fits your immediate reaction. Do not spend a long time on each item: your first reaction is probably the best one. Please answer each item.

Do not worry about projecting a good image. Your answers are CONFIDENTIAL.

Thank you for your cooperation.

1. I find that at times studying gives me a feeling of deep personal satisfaction.
2. I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.
3. My aim is to pass the course while doing as little work as possible.
4. I only study seriously what's given out in class or in the course outlines.
5. I feel that virtually any topic can be highly interesting once I get into it.
6. I find most new topics interesting and often spend extra time trying to obtain more information about them.
7. I do not find my course very interesting so I keep my work to the minimum.
8. I learn some things by rote, going over and over them until I know them by heart even if I do not understand them.
9. I find that studying academic topics can at times be as exciting as a good novel

or movie.

10. I test myself on important topics until I understand them completely.
11. I find I can get by in most assessments by memorising key sections rather than trying to understand them.
12. I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.
13. I work hard at my studies because I find the material interesting.
14. I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes.
15. I find it is not helpful to study topics in depth. It confuses and wastes time, when all you need is a passing acquaintance with topics.
16. I believe that lecturers shouldn't expect students to spend significant amounts of time studying material everyone knows won't be examined.
17. I come to most classes with questions in mind that I want answering.
18. I make a point of looking at most of the suggested readings that go with the lectures.
19. I see no point in learning material which is not likely to be in the examination.

20. I find the best way to pass examinations is to try to remember answers to likely questions.

Scoring is in the following cyclical order:

1. Deep Motive, 2. Deep Strategy, 3. Surface Motive, 4. Surface Strategy

5. “ etc.

Deep Approach Score:  $\sum$  All Deep Motive scores + all Deep Strategy scores

Surface Approach Score:  $\sum$  All Surface Motive scores + all Surface Strategy scores

**APPENDIX B. MERRILL’S EFFECTIVE, EFFICIENT, AND ENGAGING  
DESIGN RUBRIC**

The Course e<sup>3</sup> Evaluation Rubric series is adapted from Merrill’s (2009) work (pp. 4-7), which is used with permission, and the SOLO Taxonomy grid is adapted from Biggs & Tang (2007). The following tables are representative of the instruments used during this research.

**First Principles Course Evaluation Rubric (Merrill, 2009) and SOLO  
Taxonomy Grid (Biggs & Collis, 1982; Biggs & Tang, 2007)**

Name of course:

Date Accessed:

**First Principles Course Evaluation Rubric**

Component Skills	Kind? (definitions, examples)	How? (steps and sequence)	Why? (what happens – conditional statement, demonstrate process, predict)	Comments

Component Skills	Kind? (definitions, examples)	How? (steps and sequence)	Why? (what happens – conditional statement, demonstrate process, predict)	Comments

**SOLO Taxonomy Table of ILOs (Biggs & Collis, 1982; Biggs & Tang, 2007)**

<b>Kind of knowledge</b>	<b>Content or Topic</b>	<b>Level of understanding or performance (action verb)</b>

Notes:

## Instructional Event Summary

Procedure: Use this form when a given instructional component has a large number of individual instructional events. The purpose of this form is to help you keep track of these events. (More rows can be added to tables as needed)

1. Identify the instructional component.
2. List the instructional events one event per line. An instructional event is a single tell, ask, show or do.
3. Check if there is no violation of a multimedia principle. Comment on violations if they do occur.
4. Check if the event includes feedback, guidance, coaching, structure or peer collaboration/critique.
5. Make liberal use of comments to help you remember details of events.
6. Indicate the type of learning involved: what is it – kinds (K), how to do it (H), what happens (W), or whole problem (P).

### Module 1

Instructional Events											Comments	
	Tell	Ask	Show	Do	Multimedia	Feedback	Guidance	Coaching	Structure	Peer	Type	

## Module 2

Instructional Events	Instructional Strategies											Type	Comments
	Tell	Ask	Show	Do	Multimedia	Feedback	Guidance	Coaching	Structure	Peer			

## Module 3

Instructional Events	Instructional Strategies											Type	Comments
	Tell	Ask	Show	Do	Multimedia	Feedback	Guidance	Coaching	Structure	Peer			

## Module 4

Instructional Events	Instructional Strategies											Type	Comments
	Tell	Ask	Show	Do	Multimedia	Feedback	Guidance	Coaching	Structure	Peer			

## Module 5

Instructional Events	Tell	Ask	Show	Do	Multimedia	Feedback	Guidance	Coaching	Structure	Peer	Comments	
											Type	

### E3 Quality Rubric – Demonstration

	Tell	Show	Multimedia	Guide	>3	Structure
Kinds	Does the demonstration tell learners the name and definition of each category?	Does the demonstration show learners examples of each category?	Does the demonstration use effective multimedia principles?	Does the demonstration provide guidance by highlighting discriminating properties or by showing matched examples among categories?	Does the demonstration include at least 3 examples from each category?	Does guidance during demonstrations show learners how the defining properties and portrayals relate to an organizing structure?
How To	Does the demonstration tell learners the steps and sequence in the procedure?	Does the demonstration show a specific instance of the task and demonstrate each of the steps required to complete the task?	Does the demonstration use effective multimedia principles?	Does the demonstration provide guidance by calling attention to the execution of each step?	Is the procedure demonstrated in a progression of at least 3 increasingly difficult situations?	Does guidance during demonstrations show learners how the steps in the procedure relate to an organizing structure?
What happens	Does the demonstration tell learners the conditions and consequence of the process?	Does the demonstration show the process in a specific real or simulated situation?	Does the demonstration use effective multimedia principles?	Does the demonstration provide guidance by helping learners relate the events in the process to the conditions and consequence?	Is the demonstration of the process repeated for a progression of at least 3 increasingly complex scenarios?	Does guidance during demonstrations show learners how the conditions and consequence relate to an organizing structure?
Whole Task	Does the demonstration describe a whole problem or task indicating some of the major steps involved?	Is the whole task or problem demonstrated to the learners?	Does the demonstration use effective multimedia principles?	Are the component skills of the whole task demonstrated to learners in the context of the whole task using a problem- or task-centered instructional strategy?	Is there a progression of at least 3 increasingly difficult whole tasks or problems demonstrated to the learners?	Does guidance during demonstrations show learners how the steps in the whole task relate to an organizing structure?

### E3 Quality Rubric – Application

	Ask	Do	Feedback	Coach	>3	Peer Interaction
Kinds	Does the demonstration tell learners the name and definition of each category?	Does the demonstration show learners examples of each category?	Does the demonstration use effective multimedia principles?	Does the demonstration provide guidance by highlighting discriminating properties or by showing matched examples among categories?	Does the demonstration include at least 3 examples from each category?	Does guidance during demonstrations show learners how the defining properties and portrayals relate to an organizing structure?
How To	Does the demonstration tell learners the steps and sequence in the procedure?	Does the demonstration show a specific instance of the task and demonstrate each of the steps required to complete the task?	Does the demonstration use effective multimedia principles?	Does the demonstration provide guidance by calling attention to the execution of each step?	Is the procedure demonstrated in a progression of at least 3 increasingly difficult situations?	Does guidance during demonstrations show learners how the steps in the procedure relate to an organizing structure?
What happens	Does the demonstration tell learners the conditions and consequence of the process?	Does the demonstration show the process in a specific real or simulated situation?	Does the demonstration use effective multimedia principles?	Does the demonstration provide guidance by helping learners relate the events in the process to the conditions and consequence?	Is the demonstration of the process repeated for a progression of at least 3 increasingly complex scenarios?	Does guidance during demonstrations show learners how the conditions and consequence relate to an organizing structure?
Whole Task	Does the demonstration describe a whole problem or task indicating some of the major steps involved?	Is the whole task or problem demonstrated to the learners?	Does the demonstration use effective multimedia principles?	Are the component skills of the whole task demonstrated to learners in the context of the whole task using a problem- or task-centered instructional strategy?	Is there a progression of at least 3 increasingly difficult whole tasks or problems demonstrated to the learners?	Does guidance during demonstrations show learners how the steps in the whole task relate to an organizing structure?

## APPENDIX C: INTERVIEW PROTOCOL

*Script:*

*For this interview, I have prepared a few questions for us about your educational administration program to start out with. But first, please note that this interview's audio is being recorded for transcription purposes. The information will be kept only for research purposes and the recordings will be destroyed once they are transcribed. Also note that your name will not be used in any reporting, including my research dissertation. Do you agree to be recorded and participate in this interview? [Wait for response]*

*Thank you. Do you have any questions? You may ask questions at any time during this process, so please stop me at any point if you need to ask something. [Wait for response, then begin questions]*

1. You are enrolled in the Master of Science in Education Administration program.  
What were your reasons for choosing this major?
2. Why did you choose this accelerated program instead of a traditional one?
3. Would you characterize the type of work that you do in your coursework as more project-oriented or more exam-oriented?
  - a. Follow up: Which types of courses have you found to be more project-oriented and which ones were more exam-oriented?

- b. Follow up: Can you characterize the amount of time and preparation that you required in both project-oriented and exam-oriented courses?
4. Do you prefer the more project-oriented courses or do you prefer the more exam-oriented courses?
5. What processes do you go through to ensure that you can get your coursework completed?
6. Do you feel like you have enough time to complete your coursework?
7. Do different professors or academic coaches have different expectations for coursework? Please explain.
8. Do your professors and academic coaches provide you with enough resources to complete your assignments?
9. Did this program meet your expectations? Please explain.