SELF-DIRECTED LEARNING IN ONLINE ENVIRONMENTS:

PROCESS, PERSONAL ATTRIBUTE, AND CONTEXT

by

LIYAN SONG

(Under the Direction of Janette R. Hill)

ABSTRACT

Online learning as a field of study has attracted much attention from educators in higher education. Studies to date have mostly focused on the opportunities and challenges associated with online learning. What is under-examined, but equally important, is an understanding of individual characteristics and how they impact what occurs in an online learning context. One particular learner characteristic that is touted as important in online learning is learner's self-direction. The current study extends the current existing perspectives on self-directed learning as a learning process and a personal attribute by adding a context component. This extended perspective takes into consideration the impact of learning context on the amount of autonomy that is allowed and on the way learners manage their learning. The research, guided by this perspective, was conducted to investigate adult learners' self-directed learning experience in an online learning context. In particular, the focus of the research was to understand learner's self-regulation and learner autonomy, two primary components of self-directed learning, in a graduate online course that was delivered completely online via WebCT®.

The findings from the examination of learners' self-regulation in the online course indicated the importance of prior knowledge, motivation, resource use, and strategy use in

successful online learning. The results of the study also indicated the importance of providing technological assistance to first timers, designing and developing resource-based online learning, creating a collegial online learning community, and developing effective online scaffolds.

The results from the investigation on learner autonomy in online learning suggested that online learning does seem to require more autonomy from the learners in planning, monitoring, and evaluating their learning. The fact that participants in the study relied on self as well as peers in their learning experience implies the importance of designing and developing collaborative online learning environments. Similar to a traditional classroom setting, participants reported that they viewed the instructor as an authoritative figure who often has the final say on course-related topics as well as on the quality of their work.

INDEX WORDS: self-directed learning, self-regulated learning, learner autonomy, online learning, web-based learning, adult learning, higher education

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DEDICATION

To my parents, my husband, Long, and my baby, Ying.

For their endless love, support, and pride.

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Prologue

"You can't place your materials on the WWW if your candidate students are not self-regulating and hope for success, can you?"

--Brooks, 1997 p. 135

Researcher's Perspective

The dissertation research not only reflects my inquiry into my personal learning experience, but also points out directions for my professional research agenda. My transformational experience from an instructor-directed learner to a self-directed learner led to my interest in exploring self-directed learning experience. My experience with learning and teaching in online environments led me to the current research context for studying self-direction.

Like many scholars, I believe that self-directed learners need instructional scaffolding in order to accomplish learning success. In fact, the reason that education as an enterprise exists is to provide a type of learning support that learners cannot have otherwise. Yet, online learning, though increasingly popular, is still a mystery to many when it comes to understanding how learners direct their learning. In order to effectively design an online course that can best facilitate learning, it is important to first understand the phenomenon.

The dissertation research serves as a starting point for my academic research into the phenomenon. It is my hope to obtain an adequate understanding of the phenomenon in the dissertation study so that I can advance my research in this area of design and development of online learning.

Background for the Study

Online learning, as a field of study, has attracted much attention from educators (Owston, 1997), especially those in higher education institutions (Hofmann, 2002). Several studies have explored the opportunities of online learning, such as convenience (Poole, 2000) and flexibility (Chizmar & Walbert, 1999; Felix, 2001). It is essential and critical to understand the affordances of online technologies in order to design and develop effective online instruction from an instructional design perspective (e.g., Dick, Carey & Carey, 1999). As stated by other researchers, the mere transfer of traditional classroom pedagogy to online environments is not enough (e.g., Reeves, 2003). What is under-investigated, but equally important, is the understanding of learner characteristics, such as self-direction, and how these impact what occurs in online learning contexts (Hartley & Bendixen, 2001).

The concept of self-directed learning is often interchangeably used with the concept of self-regulated learning. However, the literature provides evidence that they are two different concepts. Self-regulated learning is a theory developed in the field of educational psychology through the study of individual differences, especially among students in K-12 educational settings (Zimmerman, 2002). The primary aspects of self-regulated learning are the active control of the various resources, controlling and changing motivational beliefs, and the control of various cognitive strategies for learning (Pintrich, 1995). Self-directed learning, in contrast, is a theory developed in the field of adult education based on the foundation works by Houle (1961), Knowles (1975) and Tough (1971). Self-directed learning not only includes the personal attributes described in self-regulated learning, but it also focuses on the learning process of how learners take control in planning, monitoring, and evaluating their learning.

The study of self-direction has primarily focused on the self-directed learning process (e.g., Mocker & Spear, 1982), and learner's self-direction as a personal attribute (e.g., Garrison, 1997). Little attention has been paid on how self-direction interacts with a specific context (Brookfield, 1984), though some scholars have recognized the importance of learning context in self-directed learning experience (e.g., Candy, 1991). In fact, some scholars have speculated the importance of learners' self-direction in the success of learning online (e.g., Hartley & Bendixen, 2001). Yet, to date, little empirical work has been completed exploring self-direction in online contexts.

Research Design

Qualitative research methodologies were used for the dissertation research in order to study the online self-directed learning phenomenon in real contexts, real time, and real events (Perry, 2002; Winne & Perry, 2000). The primary data source for the dissertation research came from interviews with eight participants. Each participant was interviewed three times throughout the semester when the dissertation research took place. Six participants were selected for in-depth data analysis because of the rich data in their interviews (Patton, 1990).

The purpose of the study was to investigate adult learners' self-directed learning experience in a graduate course that was delivered online via WebCT®. The dissertation is a collection of journal-ready articles aimed at understanding adult learners' self-direction in an online context, including a conceptual framework paper and two research articles based on the dissertation study.

Chapters

The first chapter, *A Conceptual Model for Understanding Self-Direction in Online Environments,* provides a conceptual framework for the study of self-direction in online learning

context. The proposed model in the article extends existing perspectives on self-direction by adding a context component, indicating that self-direction is context-bound rather than context-free. Implications for research and practice are provided at the end of the paper. The target journal for this manuscript is *Adult Education Quarterly*.

A broad definition of self-directed learning is provided in chapter one that serves as the framework for the dissertation research. In the definition, two key components are identified in self-directed learning: self-regulation and learner autonomy. These two components guided the overall research. In the first part of the study (see Chapter 2), we focus on the self-regulation component of self-directed learning in that we examine how learners utilized resources and strategies, how they became motivated, and how their prior experience and knowledge with online learning impacted their learning in an online context. In the second part of the study (see Chapter 3), we focus on the learner autonomy component of self-directed learning in that we examine how learners embraced the autonomy in planning, monitoring, and evaluating their learning in an online learning context. Each chapter is described in more detail in the following paragraphs.

The second chapter, *Understanding Adult Learners' Self-Regulation in Online Environments: A Qualitative Study*, reports findings from the dissertation research that are related to the self-regulation aspect of self-directed learning. As noted in chapter one, self-regulation is one aspect of self-directed learning, focusing more on the process of self-directed learning. Specifically, the paper explains how learners motivated themselves to participate in online learning activities, what strategies learners employed in their online learning, what resources they utilized to accomplish their learning, and what impact their prior knowledge and

experience played on their learning. The target journal for this manuscript is *Educational Technology Research and Development*.

The third chapter, *Understanding Learner Autonomy in Online Environments: A Qualitative Investigation*, reports findings from the dissertation research that are related to the learner autonomy aspect of self-directed learning. As described in chapter one, learner autonomy is one aspect of self-directed learning focusing more on the personal attributes of self-directed learning. Specifically, the study examined how participants planned, monitored, and evaluated their learning in the online course. The target journal for this manuscript is the *Journal of Computing in Higher Education*.

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CHAPTER 1

A CONCEPTUAL MODEL FOR UNDERSTANDING SELF-DIRECTION IN ONLINE ENVIRONMENTS[1]

[1] Song, L. & Hill, J. R. To be submitted to *Adult Education Quarterly*.

Abstract

Research indicates that online learning often situates control of implementation with the learner. Recently, scholars have turned attention to the importance of self-directed learning skills for online learning environments. Existing frameworks for understanding self-directed learning focus primarily on process and personal attributes in face-to-face settings. Some frameworks depict self-directed learning as a process, focusing on learner autonomy in the learning processes, others as a personal attribute, focusing on learner's capabilities of regulating the learning process. Yet, as some scholars have pointed out, self-direction is context-bound, and the level of self-direction needed may change in different contexts. The purpose of this paper is to introduce a framework for understanding self-directed learning in online learning contexts. Implications for future research and practice are provided at the end of the paper.

Introduction

The study of online learning has attracted much attention from scholars and practitioners (Hill, Wiley, Nelson, & Han, 2003), especially those in higher education institutions (Hofmann, 2002). Several studies have explored the benefits associated with online learning, including convenience (Poole, 2000) and flexibility (Chizmar & Walbert, 1999; Felix, 2001). Other studies have described the challenges associated with online learning, including: technical difficulty, lack of sense of community, and delayed communication (Hara & Kling, 1999; Song, Singleton, Hill, & Koh, 2004; Vonderwell, 2003). These studies are important as we build an overall understanding of online learning. The studies have also assisted in furthering the understanding of the affordances of online environments. It is essential and critical to understand the affordances of online technologies in order to design and develop effective online instruction from an instructional design perspective (e.g., Dick, Carey, & Carey, 1999). As stated by Reeves (2003), the mere transfer of traditional classroom pedagogy to online environments is not sufficient. What is equally important is an understanding of learner attributes and how these impact what occurs in online learning contexts. Many researchers have explored specific attributes, ranging from prior knowledge (Mason & Weller, 2000), time-management (Hill, 2002), to gender differences (Rovai, 2002; Wheeler, 2002). An area of particular interest to researchers exploring online learning is the learner's ability to guide and direct her or his own learning; in other word, self-directed learning (Hartley & Bendixen, 2001).

The concept of self-directed learning (SDL) is often used interchangeably with the concept of self-regulated learning. According to the literature, they are two different concepts. Self-regulated learning is a theory developed in the field of educational psychology through the study of individual differences, especially among students in K-12 educational settings

(Zimmerman, 2002). The primary aspects of self-regulated learning include: the active control of the various resources, controlling and changing motivational beliefs, and the control of various cognitive strategies (e.g., metacognition) for learning (Pintrich, 1995). In contrast, SDL is a theory developed in the field of adult education based on the foundational work by Houle (1961), Tough (1971), and Knowles (1975). Self-directed learning not only includes the personal attributes described in self-regulated learning, but it also focuses on the learning process of how learners take control in planning, monitoring, and evaluating their learning.

The study of self-direction has been explored primarily from two perspectives: a process perspective (e.g., Mocker & Spear, 1982), and a personal attribute perspective (e.g., Garrison, 1997). Research on self-directed learning reached a peak during the 1980s and early 1990s with studies focused on the verification of SDL among adults and descriptions of models for understanding SDL (Brockett, 2002; Merriam, 2001). While SDL research waned in the broader educational research arena in the late 1990s, SDL continued to attract the attention of scholars in the field of adult education (Brockett, 2002). In particular, with the increasing trend of online learning in higher education (The Sloan Consortium, 2004), SDL has started to attract more attention due to its speculated and reported impact in these contexts (e.g., Hartley & Bendixen, 2001; Whipp & Chiarelli, 2004).

Little attention has been paid to how self-direction operates in a specific context (Brookfield, 1984c), especially in higher education institutions (Merriam & Caffarella, 1999). Some scholars have recognized the importance of the learning context for SDL (e.g., Candy, 1991), noting that learners may exhibit different levels of self-direction in different learning situations. According to Candy (1991), learners may have a high level of self-direction in an area in which they are familiar or that are similar to a prior experience. For example, a Spanish

speaking learner may have a high level of self-direction in learning Italian, and a learner who plays rugby may learn to play football more easily. In order to facilitate learners' success in online learning environments, it is important to understand how SDL functions in specific contexts.

The purpose of the paper is to introduce a conceptual model for understanding self-directed learning in an online context. First, we will review existing definitions and perspectives on SDL. Next, we will introduce the conceptual model for understanding SDL in online contexts, describing the individual components as well as the dynamic interaction between them. Finally, we will discuss implications of the model for future research and practice.

Self-Directed Learning Definitions

The concept of self-directed learning has captured the attention of many researchers and scholars in the field of adult education since it was theorized in the 1970s. According to Garrison (1992), there is no area of research in adult education that has attracted as much attention. Despite the attention, the concept of SDL is often confused with related concepts that are used interchangeably, such as autonomous learning, independent study and self-regulated learning (Brockett & Hiemstra, 1991). This uncertainty has created challenges for researchers exploring SDL.

Many scholars in the field of adult education have attempted to define SDL to help overcome some of the challenges. For example, Knowles (1975) defined self-directed learning as "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and

evaluating learning outcomes" (p. 18). Later, Moore (1980) defined the learner in a SDL experience as a person who can

> identify his learning need when he finds a problem to be solved, a skill to be acquired, or information to be obtained. He is able to articulate his need in the form of a general goal, differentiate that goal into several specific objectives, and define fairly explicitly his criteria for successful achievement. In implementing his need, he gathers the information he desires, collects ideas, practices skills, works to resolve his problems, and achieves his goals. In evaluating, the learner judges the appropriateness of newly acquired skills, the adequacy of his solution, and the quality of his new ideas and knowledge (p. 23).

Brockett (1983b) considered SDL as "activities where primary responsibility for planning, carrying out, and evaluating a learning endeavor is assumed by the individual learner (p. 16)." Garrison (1992) focused his definition of SDL on responsibility and control, indicating that self-directed learners assume responsibility for meaning construction while sharing control of validating the meaning with the instructor and peers.

Common constructs can be identified in each of the definitions. We propose that the key components of self-directed learning can be divided into two main areas: *self-regulation and learner autonomy.* Self-regulation is a concept developed and frequently used in the field of educational psychology. Several definitions of self-regulation exist in the literature. For example, Bandura (1986) defined self-regulation as self-observation, self-judgment, and self-reaction processes. Most recently, Zimmerman (2000) defined self-regulation as self-generated thoughts, feelings, and behaviors in attaining the learning goals. As indicated in Park's (2003) review of the self-regulated learning literature, there are key constructs for self-regulation that are evident across various definitions, including learners' active control of resources, strategies,

and motivation. These aspects have also been indicated as important in the overall process of self-directed learning (e.g., Knowles, 1975). Therefore, we used self-regulation as another main category within self-directed learning that encompasses the resource, strategy, and motivation constructs.

Learner autonomy involves learners taking responsibility in the learning processes of planning, monitoring, and evaluating their learning. Scholars in the field of adult education have defined these processes using different terminologies including learner control and learner autonomy. In fact, some scholars use both terms to refer to similar things. For example, Moore (1972) used learner control to refer to learner's autonomous responsibilities in the learning process, and used learner autonomy in a later publication to refer to similar things (Moore, 1986). As learner control is often used to refer to a different processes in other fields, such as learner control in computer-assisted instruction in the field of instructional technology (e.g., Hannafin, 1984; Reeves, 1993; Williams, 1996), we use the term "learner autonomy" as a main category to describe the aspects of self-directed learning that include learners' planning, monitoring, and evaluating processes.

Perspectives on Self-Directed Learning

Different scholars have presented different perspectives on SDL. Like the definitions presented in the previous section, some see it as a *process* of organizing the instruction (e.g., Harrison, 1978), focusing their attention on the level of learner autonomy over the instructional process. Others view self-direction as a *personal attribute* (e.g., Guglielmino, 1977; Kasworm, 1988b; Skager, 1984), with the goal of education described as developing individuals who can assume moral, emotional, and intellectual autonomy (Candy, 1991). Several models have been

proposed to understand SDL. The key constructs associated with each model are summarized in Table 1.1. Description and explanation of the models are provided in the following sections.

Table 1.1

Mocker and Spear's Two-Dimensional Model

Mocker and Spear (1982) developed a two dimensional model based on a learner's control over learning objectives and means. This two dimensional model takes the perspective of self-direction as a process, focusing the attention on the level of learner control over the instruction. According to this model, lifelong learning is classified into four categories: formal, non-formal, informal, and self-directed. Each is described in more detail below.

Learners have little or no control over the objectives or the means of learning in a *formal* learning setting. For example, an undergraduate chemistry class classified as formal learning would be one in which the instructor decides on the learning objectives, provides specific information (i.e., lecture, text, articles) on the principles in chemistry, and evaluates the learning outcomes through tightly structured assessments. In a *non-formal* learning setting, learners have more control over objectives but not the means. For example, a learner chooses to learn driving in a driving school. While the learner has control over what s/he wants to learn on her/his own (in this case, it is driving), the control over the means of learning lies primarily in the hands of a driving coach.

Learners have more control over the means but not the objectives in an *informal* learning environment. According to Mocker and Spear's definition (1982), an example of informal learning could be a project-based learning course in a formal educational setting where the project to be completed in the course may be decided by the instructor, but the learners have control over how they develop the project using resources they find most useful. The SDL

category refers to the type of learning experience where learners have control over both the objectives and means in their learning. An example of a SDL experience could be a learner choosing to learn DreamWeaver® using a tutorial book she bought in a bookstore to build her homepage. In this type of learning experience, the learner decides her learning need (to build a web page) as well as how she learns the skills to accomplish the goal (using a tutorial book).

Mocker and Spear's (1982) model emphasized the learner's control over instruction. It describes the various types of instruction with different levels of learner control over objectives and means of learning. This is similar to Knowles' (1975) perspective of learner autonomy in diagnosing learning needs and formulating learning goals, which are part of learner's autonomous learning processes. Mocker and Spear's (1982) model proved to be a useful starting point for researchers seeking to explore SDL. Yet, the model lacks an exploration of the learner's ability to manage the learning situation. Candy's (1991) model addressed this issue.

Candy's Four-Dimensional Model

In reviewing the literature on various views of SDL or related concepts, Candy (1991) concluded that SDL, as an umbrella concept, encompassing four dimensions: " 'self-direction' as a personal attribute (*personal autonomy*); 'self-direction' as the willingness and capacity to conduct one's own education (*self-management*); 'self-direction' as a mode of organizing instruction in formal settings (*learner-control*); and 'self-direction' as the individual, non-institutional pursuit of learning opportunities in the 'natural societal setting' (*autodidaxy*)" (p.23). Candy's four dimensional model combines the process and personal attribute perspectives together, using "learner control" and "autodidaxy" to describe the same perspective on the level of learner autonomy in learning, but in different situations. *Learner control* refers to the level of control the learner has in a formal educational situation (e.g., course). *Autodidaxy*

refers to the level of control learners have outside formal educational experiences (e.g., doing research in a library). "Personal autonomy" and "self-management" referred to a learner's ability to take control of her/his own learning. Specifically, *personal autonomy* was used to refer to a learner's ability to be an autonomous learner. *Self-management* was more focused on the learner's willingness, and ability, to take actions in conducting her/his own learning.

Candy (1991) provided a thorough depiction of the different dimensions of SDL. His model included both the process and personal attributes of SDL. Candy's (1991) "learner control" and "autodidaxy" perspectives are similar to Knowles' (1975) autonomous planning, monitoring, and evaluating processes. The "self-management" and "personal autonomy" dimensions in Candy's model are similar to the self-regulation personal attributes where learners identify learning resources, choose and implement learning strategies (Knowles, 1975; Pintrich, 1995). The variety of the constructs in Candy's model added an element of depth to our understanding of SDL. Further, Candy stated that a learners' self-direction might be different in different content areas. Yet, the model does not describe how SDL is relevant in different learning contexts.

Brockett and Hiemstra's Personal Responsibility Orientation Model (PRO)

Brockett and Hiemstra (1991) provided a rationale for two primary orientations in developing an understanding of SDL: process and goal. In the first orientation, SDL is viewed as a *process* "in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process" (p.24). Brockett and Hiemstra's process orientation is similar to the autonomous learning processes in Knowles' (1975) self-directed learning definition where learners diagnose learner needs, formulate learning goals, and evaluate learning outcomes. In the second orientation, SDL is referred to as a *goal*, which focuses on "a learner's desire or

preference for assuming responsibility for learning" (p.24). Based on the personal orientation, a person's self-direction refers to the individual characteristics of taking responsibilities for her/his own learning endeavors, such as strategy use, resource use, and motivation. This second orientation is similar to Pintrich's (1995) self-regulated learning perspective where learners take active control of strategy use, resource use, and motivational beliefs in managing their learning.

Brockett and Hiemstra (1991) took a comprehensive approach to understanding SDL in that they, like Candy, combined both the process and personal attribute perspectives in the model. Brockett and Hiemstra also integrated social context as a component in the model in that they discussed the role of institutions and policies in SDL. At the time the model was developed, this was a significant addition to the SDL models. Yet, in today's educational climate, the context factor in the model is rather limited. Brockett and Hiemstra (1991) defined the social context as different physical institutions where learning takes place, such as community colleges, libraries, and museums. As for the policies, the model only refers to the willingness of institutions and organizations to provide SDL environments. In today's educational situation, where virtual learning continues to experience exponential growth, this is a significant limitation.

Garrison's Three-Dimensional Model

Garrison's model of SDL was proposed in 1997 and, like the models previously presented, includes the perspectives of SDL as a personal attribute as well as a learning process. According to Garrison (1997), SDL is accomplished by three dimensions interacting with each other: self-management, self-monitoring, and motivation. In educational settings, self-management involves learners' use of learning resources within the learning context. This is similar to the resource use attribute in learner's self-regulation (e.g., Pintrich, 1995). Self-monitoring refers to learners' ability to monitor their cognitive and metacognitive learning

processes. According to Pintrich and De Groot (1990), cognitive and metacognitive processes are important aspects to learner's self-regulated learning. Motivation concerns how learners choose to go into a task. Zimmerman (2000) would describe this as self-generated behaviors.

The focus of Garrison's (1997) model is on resource use, learning strategies use, and motivation to learn. Garrison explained that self-management involved learners taking control of the learning context to reach their learning objectives. He further explained that learner control did not mean independence, but rather collaboration with other people within the context. From this perspective, we can see Garrison's model did have certain focus on learning process perspective of SDL. Like Candy (1991) and Brockett and Hiemstra (1991), Garrison (1997) also recognized the context factor in his model in that he specified self-management of resources in a given context. Yet, the role of context was somewhat superficial in Garrison's (1997) model and the dynamic interaction between learning context and SDL was not explicit.

Summary

The different perspectives on SDL have similarities, but they also have differences. Mocker and Spear (1982) focused on the process perspective, indicating that the SDL process was focused on the learner's control over the objectives, means, and outcomes. Candy (1991), Brockett and Hiemstra (1991), and Garrison (1997), took a rather comprehensive perspective that combines many of the constructs in the SDL definition, putting the process and personal attribute perspectives together.

The models developed to date have been valuable in enabling the extension of our thinking about SDL. The models described in this manuscript examined the process and learner control as well as the interaction between the two. In most of the SDL models reviewed, context was discussed to a certain extent. The fact that some raised awareness of the importance of

context in SDL (e.g., Candy, 1991; Brockett & Hiemstra, 1991; Garrison, 1997) has not attracted much attention to date. Further, Candy (1991), when talking about self-direction as context-bound, mostly focused on the learner's different level of self-direction in different content areas. For example, a learner may have high-level of self-direction in physics class, but low-level of self-direction in philosophy. Brockett and Hiemstra (1991) referred to social context as the role of institutions and policies. Garrison (1997) mentioned the self-management of learning resources in a specific context, but did not describe interaction between learning management and learning context. A more comprehensive SDL model is needed to incorporate context as a contributor to the overall process.

A Conceptual Model for Understanding SDL in Online Environments

It is generally believed that online learning gives more control of the instruction to the learners (Cuevas, Fior, & Oser, 2002; Garrison, 2003; Gunawardena & McIssac, 2003). In fact, some scholars consider self-directed learning critical in distance education settings with its unique characteristic of the social separation of the learner from the instructor or expert (Long, 1998). Recent research in online distance education indicates that students need to have a high level of self-direction to succeed in online learning environment (Hong, Lai, & Holton, 2001; Shapley, 2000). In fact, not only does an online learning context influence the amount of control that is given to (or expected of) learners, it also impacts a learner's perception of their level of self-direction. For example, in a recent qualitative case study, Vonderwell and Turner (2005) examined preservice teachers' online learning experience in a technology application course. Participants in the study expressed that the online learning context enhanced their responsibility and initiative towards learning. They reported they had more control in their learning and more effectively used resources.

There is a need for a new perspective on how context influences SDL. When initial SDL models were developed, face-to-face instruction was the predominant mode in higher education. More than a decade after the last model was developed (cf., Garrison, 1992), higher education is occurring in a variety of contexts, ranging from face-to-face classrooms to virtual classrooms. Within each of these settings, a variety of methods may be used to enable interactions, including 100% physical classroom interactions to a blend of face-to-face and online interactions to 100% online interactions. While there are indications that self-directedness is a desirable trait for online learners (Balcytiene, 1999; Shapley, 2000), we do not have an adequate understanding of the impact of a specific learning context (i.e., physical classroom instruction, a web-based course, a computer-based instructional unit) on self-direction.

The following section introduces a conceptual model for understanding SDL (see Figure 1.1) in an online context. The model incorporates SDL as a learning process and a personal attribute (i.e. self-regulation) as illustrated by most scholars in the literature of SDL. Further, we added a third dimension -- the learning context -- to indicate the impact of environmental factors on SDL.

The input to a person's self-directed learning or any type of learning is a person's prior knowledge and experience. Prior knowledge plays an important role in a person's learning (Ausubel, 1968). This is especially true with adult learners who have accumulated a rich repertoire of prior knowledge and experience (Knowles, 1975), which impacts how they think and how they approach learning (Hofer, 2002). In a learner's self-directed learning experience, there are two key aspects: self-regulation and learner autonomy. The independent and dynamic nature of these components is explored in the following sections.

Figure 1.1

Personal Attributes (Self-Regulation)

Personal attributes refer to a learner's motivation for and capability of taking responsibility for her/his learning (Garrison, 1997). Personal attributes also include resource use and robust cognitive strategies. As discussed earlier, these personal attributes are primary aspects of self-regulation; therefore, we used self-regulation as a construct to represent those personal attributes in the model. The personal attributes are characteristics the learner brings to a specific learning context, together with their prior knowledge on the content area and prior experience with the learning context.

Processes (Learner autonomy)

Process refers to learner autonomy in learning processes. Specifically, learner autonomy is primarily manifested in the process of planning, monitoring, and evaluating one's learning (Moore, 1972). Learner autonomy in learning processes is viewed as a continuum (Candy, 1991). Learner autonomy does not mean learning as a "Lone Ranger", but rather it involves other members in the learning process (Long, 1992, p. 4). Depending on the level of learner autonomy, a learning experience can range from an instructor lecturing 100% of the class time (no learner control) to a student taking charge of the learning process in an independent study experience in which the objectives and means are not predetermined (complete learner control).

Interaction exists between a learner's personal attributes (self-regulation) and the learning processes (learner autonomy). For learners to fulfill the planning, monitoring, and evaluating learning processes, they need to utilize various resources, develop effective learning strategies, and become motivated to take action in those processes. On the other hand, how a learner approaches those learning processes impacts their resource use, strategy use, and how they become motivated to learn.

Context

Context focuses on environmental factors and how those factors impact the level of self-direction provided to the learner. There are various factors in a learning context that can impact a learner's self-directed learning experience. As the model illustrates (see Figure 1.1), there are design elements and support elements. Design elements include the resources, structure and nature of the tasks in the learning context. These resources could be embedded in the specific learning context and could be designed by the instructor as instructional support. Similarly, the specific learning context may decide on the structure of the course.

Some learning contexts appear to naturally default to different levels of SDL in the learning experience. For example, the anytime, anywhere characteristics of asynchronous online learning puts the learner in control of when, where, and how they learn (Berge, 1999). It can also be decided based on the instructor's design of the course. Further, the nature of the tasks also influence the level of self-direction required from and placed on the learners.

Another set of elements in the learning context that have impact on a learner's self-directed learning is the support in the learning context. The support can come from the instructor's feedback, and it may also come from peer collaboration and communication. For example, constructive and informative feedback from the instructor can facilitate learners' self-directed learning, but simple judgmental feedback such as "right" or "wrong" may lead to learners to trying to figure out what the instructor wants instead of what they can make sense of what they are learning.

Dynamic Interaction in the SDL Model

The interaction between processes and personal attributes is important and has been the primary focus of SDL theory and research to date (Brookfield, 1984c; Merriam & Caffarella,

1999). To understand SDL from a process and personal attribute perspectives is important in that it provides information regarding how learners are different in terms of the level of self-direction (e.g., Grow, 1991/1996) as well as how learners take control in the learning process (e.g., Moore, 1972). The model presents the interactive relationship between the learning processes and learner's self-regulation. For learners to take control of the planning, monitoring, and evaluating learning processes, they rely on their use of strategies and resources, and their ability to motivate themselves to involve in the learning processes. Meanwhile, their involvement in the learning processes can impact their level of self-regulation personal attributes. Research has indicated that active involvement in controlling learning processes can help learners improve their ability to effectively use resources and strategies (Vonderwell and Turner, 2005).

The addition of the learning context is important in the current climate where there is not one dominating mode of learning. As depicted in the model (see Figure 1.1), the learning context not only impacts the way learners plan, monitor, and evaluate their learning (process), but it has the potential to influence how a learner becomes motivated to learn, and how s/he uses various resources and strategies to accomplish learning in the specific learning context. In the following section, we use online learning context as an example to describe and analyze the interaction between learning context and a learner's self-directed learning experience. Specifically, we will discuss what SDL processes are like in an online context, and how an online context interacts with a learner's self-regulation and learner autonomy (see Table 1.2 for a summary of the constructs).

Table 1.2.

SDL Processes in an Online Context

Some research studies have examined the impact of online learning on the SDL process. Three primary areas have been explored: planning, monitoring, and evaluating.

Planning. Online learning provides flexibility for learners to pace their own study (Chizmar & Walbert, 1999; Felix, 2001). As Table 1.2 summarizes, different scholars used different constructs to refer to the planning process. According to Knowles (1975), planning involves diagnosing learning needs in a learning situation. Moore (1980) considers planning as identifying the learning need. Brockett (1983b) and Garrison (1992) viewed it from a general perspective where learners take control in planning their learning. The anytime, anywhere feature of asynchronous online learning provides learners with the ability to plan their activities at the time and the place that are most convenient for them (Palloff & Pratt, 2001). In synchronous learning (e.g., live chats or virtual classrooms), learners still have the flexibility to choose the most convenient place from which to participate. Unlike in a traditional classroom where a specific time, place, and a schedule of activities are arranged for a class that requires the learners' physical presence and the learners as a group to follow the same schedule, online learning affords much control for learners create their own learning space (Song, Singleton, Hill, & Koh, 2004), and decide on their own learning pace and sequence (Chizmar & Walbert, 1999; Felix, 2001).

Monitoring. The flexibility provided in online learning offers more freedom to learners, yet it presents challenges as well (Hara & Kling, 1999). Some of the challenges can be observed as learners monitor their learning. As Table 1.2 summarizes, monitoring learning process include how a learner formulates learning goals (Knowles, 1975), differentiates the learning goal into specific objectives (Moore, 1980), and carries out their learning plans (Brockett, 1983b).

Research has indicated that online learners were more likely than traditional students to monitor their comprehension (Shapley, 2000). Unlike in a traditional classroom setting where the instructor can easily see whether the learners are paying attention or actively participating in the class activities by observing their physical cues (such as facial expressions), in an online learning environment, the monitoring responsibilities are in large part left to the learner. They must decide whether they understand the subject correctly (Shapley, 2000) or heading into the right direction. Further, the level of responsibility for seeking assistance is also much more centered with the learner since they are directly involved in monitoring the process, and seeking resources to improve the situation as needed.

Evaluating. Although they note that their evidence is anecdotal, two of the best known online learning experts, Palloff and Pratt (1999), have concluded that instructors spend much more time delivering an online course than they do a face-to-face class. The heavy workload challenge makes it almost impossible for the instructor to respond to every single message posted in the bulletin board. The dynamic flow of live chat discussions also presents a great challenge for the instructor to answer every single question asked in a live-chat room. It is somewhat inevitable that learners will provide comments, suggestions, and answers for each other in this kind of environment. The learners are engaged in an informal level of evaluation, or evaluating learning success (Moore, 1980), evaluating learning outcomes (Knowles, 1975) or evaluating learning in general (Brockett, 1983b).

How learners react to peers' comments may present a challenge. For example, in Petrides' (2002) study, participants indicated that they were rather suspicious of the validity of peers' knowledge. It can be challenging to evaluate one's learning in an online context not only

because instructors have time pressures associated with providing feedback to every student, but also because of learners' uncertainty in evaluating their own learning and peer's knowledge.

The online learning context provides learners with benefits associated with flexibility. However, there are also challenges in planning, monitoring, and evaluating learning, many of which learners have not been faced with in their traditional classroom environments. It is important to continue to explore how the unique characteristics of online learning influence the processes associated with SDL.

SDL Personal Attributes in an Online Context

The online learning context also impacts SDL personal attributes of resource use, strategy use, and motivation. The following sections describe the opportunities as well as challenges.

Resources. Resources take different forms, which include but are not limited to human resources and information resources (Hill & Hannafin, 2001). As Table 1.2 summarizes, resource use attribute can include learner's responsibilities in identifying learning resources (Knowles, 1975) and gathering learning resources (Moore, 1980). Online learning, with its unique characteristics, presents both opportunities and challenges to learners in terms of resource use. For example, the permanency of the written communication in an online learning context makes peers' ideas and instructor's comments easily and conveniently accessible to learners throughout a course (Petrides, 2002). Learners can access instructor's and peers' ideas and perspectives on a certain topic multiple times. They are also given the opportunity to view the exact verbatim of those comments, thus being able to reflect more deeply on the topic (Garrison, Anderson, & Archer, 1999; Petrides, 2002; Vonderwell, 2003).

However, online learning also presents challenges in resource use for online learners. Delayed response time from the instructor (e.g., Hara & Kling, 1999) makes it a difficult task for

online learners to effectively take advantage of the instructor as an expert human resource in their online learning. Further, the uncertainty online learners have with peers' knowledge (Petrides, 2002) may hinder their use of peer human resources. Yet, it does not mean that it is impossible for online learners to use the instructor and peers as human resources. Rather, it takes good strategies to explore effective ways to do so. Another challenge relates to the evaluation of the validity and reliability of the resources accessed. Increasing learner's information literacy skills can assist in this regard (Hill & Hannafin, 2001), but it remains an issue.

Strategies. Successful learning in every learning environment involves the use of effective learning strategies. Two main constructs in strategy use are choosing learning strategies (Knowles, 1975) and articulating learning means (Moore, 1980). Researchers have indicated that strategy use is important in online learning contexts (Hannafin, Hill, Oliver, Glazer, & Sharma, 2003), in that, online learning may present challenges to learners that they have not yet experienced in face-to-face classroom learning. For example, the communication in an online learning context is mostly written as opposed to verbal in a classroom context. While some research has shown that online learning, especially asynchronous online learning, provides learners with the opportunity to reflect more when putting their thoughts on writing (Petrides, 2002; Vonderwell, 2003), due to lack of facial expressions and body languages, written communication can be easily misinterpreted (Petrides, 2002). To avoid being misinterpreted and better use the reflection opportunity in online communication, learners need to develop communication strategies that are more relevant to an online learning context.

The timing of responses from the instructor and peers in an online learning context is another challenge. First, the response from the instructor is often delayed (Hara & Kling, 1999). Secondly, peer students may not always feel obligated to respond to every message in an online

environment (Vonderwell, 2003). It is also possible to get timelier in responses from the instructor and peers. Some research has suggested that time management strategies can help learners improve their online learning experience by having effective online communication with the instructor and peers (Hill, 2002). Setting established guidelines for response expectations may assist in this regard.

Motivation. Motivation is involved in the learning processes of how a learner implements strategies (Knowles, 1975) and carries out learning activities (Brockett, 1983b). To put these learning processes in action, learners take primary responsibilities (Garrison, 1992). Research indicates that motivation to learn in an online learning context may be a difficult task due to the easy-to-procrastinate nature of online learning (Elvers, Polzella, & Graetz, 2003). For example, it can be easy to hide in an online learning situation (Song, Singleton, Hill & Koh, 2004). A learner can log in to the online course for live chats or presentations (synchronous learning) with her/his name showing on the participants list, yet, s/he may be surfing the Web or engaged in other activities rather than fully participating in the conversation.

When learners do participate, their motivation to contribute in-depth thoughts and ideas may be low. For example, in asynchronous bulletin board discussions, learners may be posting messages simply to fulfill the course requirement to post certain number of postings. This does not mean they are actually engaged in meaningful cognitive thinking (Biesenbach-Lucas, 2003). Research indicates that for meaningful interaction to occur in online environments, learners need be to motivated to contribute cognitively deep messages (Hara, Bonk, & Angeli, 2000; King, 2002).

Another challenge to motivation in online learning relates to procrastination. Scholars have indicated that it is easier to procrastinate in an online learning situation as compared to a

traditional face-to-face classroom primarily because online classes often do not provide strict schedule (Elvers, Polzella, & Graetz, 2003; Leasure, Davis, & Thievon, 2000). In a face-to-face class, though students may procrastinate, the required physical presence in each class session exposes them to the materials on a regular basis. However, in an online situation, learners may not engage in course-related reading until the last minute (Elvers, Polzella, & Graetz, 2003). Therefore, online learners need enhanced motivational strategies to avoid procrastination.

Summary.

Online learning lends itself to a SDL experience. To succeed in online learning context, learners need to take control in planning their learning pace (Chizmar & Walbert, 1999; Felix, 2001), monitoring their learning comprehension (Shapley, 2000), and making judgments on various aspects in their learning process (Petrides, 2002). Learners need to become aware of and actively explore various learning resources in an online learning context (Hong, Lai, & Holton, 2001; Sener & Stover, 2000). Further, learners need to develop strategies to effectively use resources and overcome challenges that are uniquely associated with online learning (e.g., written communication (Hill, 2002)). Last but not least, online learners need to become motivated to overcome the procrastination challenge associated with online learning (see Elvers, Polzella, & Graetz, 2003; Leasure, Davis, & Thievon, 2000), and to take advantage of online communication affordances to create meaningful interaction (Hara, Bonk, & Angeli, 2000; King, 2002). Implications for research and practice related to the contextualization of SDL are explored next.

Implications

Online learning is closely associated with SDL from both the process and the personal attribute perspective. Some research studies have examined the relationship between online

learning context and SDL. For example, some studies found that online learning is more beneficial to self-regulated learners (Balcytiene, 1999; shapely, 2000). Some have found that certain aspect of SDL attribute, such as self-efficacy, were positively related to students' attitudes and achievement in online learning (Joo, Bong, & Choi, 2000; Lee, Hong, & Ling, 2002). Yet, the results of the studies are rather superficial in understanding the complex and dynamic interaction between the various components. The SDL conceptual model is designed to extend our understanding of the important relationship between SDL and the online learning context. It provides many opportunities for future research and has implications for practice. We explore four areas in the following section.

Examining Learner's SDL Process in an Online Learning Context

As illustrated in the model, the specific learning context has an impact on how much control a learner has over the process of planning, monitoring, and evaluating her/his learning experience. The SDL process may differ in different learning contexts (Candy, 1991). As an innovative and popular context, online learning presents learners with unique opportunities and challenges. To understand the interaction of online learning context and SDL processes, it is important to examine the learners' perspectives on taking control in online learning context. This is especially important for adult learners. With years of traditional classroom learning experience, online learning can be a transformative learning experience to adult learners (Mezirow, 1990). Understanding how adult learners embrace the level of control placed upon or expected of them in an online learning context can assist instructors with implementation.

To facilitate research in this area, a variety of methods could be used. However, a qualitative research method may help build a richer understanding of the participants' perspective of their lived experience (Denzin & Lincoln, 2000). Specific questions that may be

considered include: What do adult learners perceive as their role(s) and responsibility(ies) in an online learning context? How do adult learners facilitate planning, monitoring and evaluating their learning in an online context? What resources and strategies do adult learners utilize in the online SDL process?

Investigating Learners' SDL Personal Attributes in an Online Learning Context

Studies have indicated that a learner can improve their level of self-direction by experiencing SDL (e.g., Vonderwell & Turner; 2005). Yet, how the specific context impacts the development of self-direction is not clear (Meyer & Turner, 2002). While it appears that SDL is context-dependent in that the level of a learner's self-direction (personal attribute) may vary in different learning contexts, it has been proposed that some of the attributes are trans-contextual (Candy, 1991).

Several research questions remain, including: What are some of the SDL attributes that are unique in online learning? What are some of the online learning SDL attributes that are similar in other learning contexts? How do learners motivate themselves in an online learning context? How do learners use resources and cognitive strategies to enhance their online learning experience? As with the exploration of processes, a variety of methodologies may be concerned. For example, interpretative studies may help offer basic understandings of what SDL processes are like in a certain context and for certain learners (Creswell, 1998; Reeves, 2000). Quantitative comparison studies of the same group of learners' SDL experiences in different contexts may help understand the unique SDL in an online context (Reeves, 2000).

Investigating the Interaction between SDL Process and SDL Personal Attributes

Another area that needs further investigation is the different approaches by learners who have different levels of self-direction. Research has attempted to measure the level of a learner's

self-direction (e.g., Grow, 1991/1996; Guglielmino, 1977). Many questions need to be examined or further investigated in the field of SDL, including: how does a learner become motivated in a SDL context that requires high level of learner autonomy? How does a highly self-directed learner become motivated to learn in a structured learning context where s/he does not have a lot of power? Studies in this area will enable us to identify the characteristics of high and low-level self-directed learners as well as the cognitive strategies they have used in their successful and not so successful SDL experiences. Depending on the goals of the research, comparison studies as well as descriptive studies using effective measurement of SDL may help contribute to the understanding of the interaction between SDL processes and SDL personal attributes (Reeves, 2000).

Designing Effective Online SDL Environments

The ultimate goal of education is to help improve students' learning. Some argue that the goal of adult education is to develop self-directed learners (Candy, 1991; Garrison, 1997; Merriam, 2001). To understand SDL phenomenon is only a first step in achieving the educational goal of facilitating learners' learning. The key lies in the design of effective online SDL environment. Following a grounded design process (Hannafin, Hannafin, Land, & Oliver, 1997; Hannafin, Land, Oliver, 1999), which is considered as a good instructional design theory (Reigeluth, 1999), the instructor needs to align his/her epistemological beliefs with the practice of instructional design. Therefore, an instructor who believes in the importance of SDL needs to design a learning environment that fosters learners' SDL. Interpretive and comparative research studies may help instructors develop a basic understanding of the online SDL phenomenon (Reeves, 2000). This may also assist with the effective design of these environments.

To generate effective design principles, a design-based research (The Design-Based Research Collective, 2003) or development research approach (van den Akker, 1999) is needed. Development research emphasizes a problem-oriented and interdisciplinary perspective on educational experiences. It also prescribes instructional and learning solutions to educational problems by growing a body of knowledge in the specific areas as well as the design principles that can inform educators in their instructional practice (van den Akker, 1999). Therefore, to design effective online SDL environment, more research from a development research approach is needed.

Conclusion

Self-directed learning is an important aspect of adult education. It is both a goal of adult education and the process that leads to successful learning (Merriam, 2001). Self directed learning is also a dominating philosophy in adult education (Garrison, 1992). The existing literature on SDL has established a good understanding of SDL as a process and a personal attribute. The study of SDL needs to continue, especially relating it to formal educational context, such as higher education institutions (Merriam & Caffarella, 1999). Given that the context where learning takes place influences the level of learner autonomy that is allowed in the specific context, as well as how a learner utilizes resources and strategies, and becomes motivated to learn, integrating the learning context in the study of SDL is significant. This is particularly true in online learning contexts, a relatively new area of exploration. The study of SDL online can help identify those trans-contextual SDL attributes as well as those unique online-based ones, enabling better online teaching and learning experiences.

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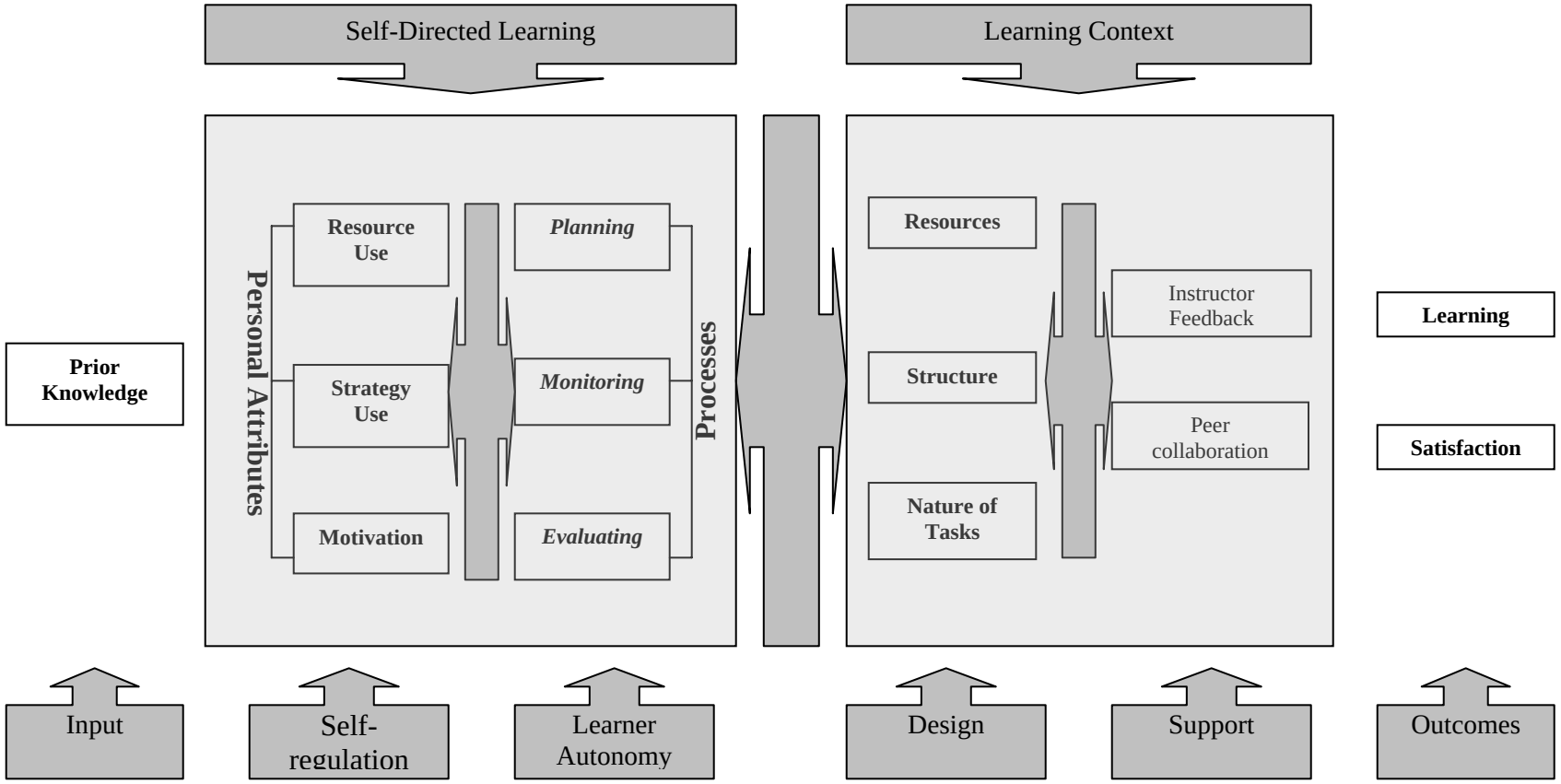
Table 1.1. Perspectives on Self-Directed Learning

Perspectives	Description	Models			
		Mocker & Spear (1982)	Candy (1991)	Brockett & Hiemstra (1991)	Garrison (1997)
Personal Attribute	Moral, emotional, and intellectual management		• Personal autonomy • Self-management	• Goal orientation (personal attribute)	Self-management (Use of resources) • Motivation
Process	Learner autonomy over instruction	• Learner control	• Learner control • Autodidaxy	• Process orientation (learner control)	• Self-monitoring
Context	Environment where learning takes place		• Self-direction is context-bound	• Social context: role of institutions and policies	

Table 1.2: Self-Directed Learning Constructs

Categories	Constructs	Authors			
		Knowles (1975)	Moore (1980)	Brockett (1983b)	Garrison (1992)
Self-Regulation	Utilizing Resources	• Identifying learning resources	Gathering learning resources		• Responsibilities
	Articulating Strategies	• Choosing learning strategies	Articulating learning means		
	Becoming motivated	• Implementing strategies		Carrying out learning	
Learner Autonomy	Planning	• Diagnosing learning needs	• Identifying learning need	• Planning learning	• Learner control
	Monitoring	• Formulating learning goals	• Differentiating the learning goal into specific objectives	• Carrying out learning	
	Evaluating	• Evaluating learning outcomes	• Evaluating learning success	• Evaluating learning	
A broad definition of self-directed learning: Self-directed learning includes self-regulation and learner autonomy. Self-regulation refers to the learner's capabilities of utilizing learning resources, articulating learning strategies, and becoming motivated to learn. Learner autonomy lies in the process of planning, monitoring, and evaluating one's learning.					

Figure 1.1. A Conceptual Model for Understanding Self-Directed Learning



CHAPTER 2

UNDERSTANDING ADULT LEARNERS' SELF-REGULATION IN ONLINE ENVIRONMENTS: A QUALITATIVE STUDY[1]

[1] Song, L. & Hill, J. R. To be submitted to *Educational Technology Research and Development*

Abstract

The reported study investigated the self-regulation aspect of self-directed learning experience in an online course. Specifically, the study examined how adult learners were motivated to participate in online learning activities, what learning strategies they employed in their online learning, what resources they utilized to accomplish learning, and what influence their prior experience had on their learning experience in the online course. The results of the study indicated that the motivation for participants to take part in online activities came in various forms including course requirements, social interaction, monitoring learning progress, and desire for knowledge. Collaboration and "mini-steps" are among the learning strategies that participants reported using in their online learning. Participants reported extensive use of peers as resources in the online course to help them monitor their learning progress. Participants reported that prior experience in online learning helped reduce the level of anxiety; yet, participants also reported that a lack of prior knowledge might have helped motivate them to devote more effort in learning. Implications for research and practice are explored.

Introduction

Online learning continues to grow in higher education. A recent survey of 1,100 colleges and universities in the United States conducted by The Sloan Consortium (2004) indicated that over 1.9 million students were studying online in the fall of 2003. The number is expected to increase to over 2.6 million by the fall of 2004, for a total of 24.8%, up from 19.8% in 2003 (see http://www.sloan-c.org/resources/ for details). "What enables learners to have a satisfactory and perhaps even successful learning experience?" is a question frequently posed in research related to online learning. Researchers have explored the question in many different ways. For example, some compared online learning experiences with traditional face-to-face classroom learning, but found no significant differences in learning outcomes (e.g., Cifuentes & Hughey, 2003; Koory, 2003; Litchfield, Oakland, & Anderson, 2002; Neuhauser, 2002; Parker & Gemino, 2001; Wegner, Holloway, & Garton, 1999). Others examined how online learning communities could improve learners' online learning experience (Hill, Raven, & Han, 2002; Rovai, 2002a). Still others studied how specific characteristics of online learning impact the learner's experience online, including: social presence (Picciano, 2002; Richardson & Swan, 2003; Tu & McIsaac, 2002) and online interaction (Driver, 2002).

Another area that scholars have indicated as important to learners' success in online environments is individual learner characteristics, such as time management skills and typing skills (Palloff & Pratt, 1999). Others have emphasized that learning management is an important characteristic in online learning contexts. Online learning, with its unique characteristics of lack of face-to-face communication and time flexibility in asynchronous online activities, places many responsibilities on the learners. For example, learners need to find resources, human and material, for their learning because they no longer have ready access to the human resources (i.e.

instructor, students) as they do in a face-to-face class. Research indicates that as in a face-to-face course, it is possible to hide in an online course (Song, Singleton, Hill & Koh, 2004). Learners also need to encourage themselves to participate in online activities (especially asynchronous activities) because there is no required physical "presence."

The above-mentioned learning management skills are closely related to the skills associated with self-regulated learning (SRL). In conjunction with learner autonomy, self-regulation is considered to be an important aspect of a learner's self-directed learning experience in the field of adult education (Song & Hill, 2005). Self-regulation is also an important concept in the field of educational psychology, where it is considered an influential process in the learning experience (Zimmerman, 2000).

Several definitions of self-regulation exist, but it is generally agreed that the primary aspects of a learner's self-regulation involves the learner's active control of resources, strategies, and motivation (Pintrich, 1995). Some scholars have recognized the importance of SRL in online contexts (e.g. Balcytiene, 1999; Garrison, 2003; Hartley & Bendixen, 2001; Shapley, 2000). Research has shown that online learning seems to require higher levels of SRL (Shapley, 2000). Yet, online learning is such a broad concept that the SRL process may be different in different types of online learning environments.

The purpose of this article is to report findings from a qualitative study on adult learner's SRL process in a graduate level asynchronous online course. To generate an understanding of how a learner self-regulates one's learning in an online learning context, we examined the three primary components of self-regulation: resources, strategies, and motivation. We also included prior knowledge in our research investigation due to the common understanding that a learner's prior knowledge plays an important role in learner's learning (Ausbel, 1968). Specifically, we

explored the following research questions: 1) What influence does learners' prior knowledge and experience have on their online learning experience? 2) What resources do learners employ in their online learning? 3) What learning strategies do learners utilize in order to achieve their learning goals? and 4) How do learners motivate themselves in an online course?

We begin the article with a review of the literature on SRL and online learning. Next, we describe the study and present the results of the analysis. We conclude with a discussion of findings and the implications for research and practice.

Perspectives on Self-Regulated Learning

Self-regulated learning has attracted much attention by education scholars in the past decade. The views on SRL are rather diverse (see Park, 2003, for a comprehensive review of SRL). When SRL as a theory was first developed, it was generally considered as self-observation, self-judgment, and self-reaction processes (e.g., Bandura, 1986; Zimmerman, 1989). Pintrich and de Groot (1990a) concluded that three primary components are involved in students' SRL: metacognitive strategies for planning, monitoring, and modifying their cognition, management and control of their effort on academic activities, and actual cognitive strategies that students use in their learning. Pintrich (1995) later developed his own description of SRL, concluding that the primary aspects of SRL were the active control of the various resources, controlling and changing motivational beliefs, and the control of various cognitive strategies for learning. More recently, Zimmerman (2000) developed a definition that has been widely adopted, defining SRL as self-generated thoughts, feelings, and behaviors in attaining the learning goals.

We analyzed several different perspectives on SRL (Bandura, 1986; Pintrich, 1995; Pintrich & De Groot, 1990; Zimmerman, 1989.2000), and developed a comprehensive definition

for SRL that includes a variety of components that have been identified in the SRL literature. We concluded that SRL involves a learner approaching the learning process based on her or his prior knowledge, becoming motivated to stay on tasks, and utilizing various learning strategies (metacognitive and cognitive) and resources to assist with the learning process (see Table 2.1).

Table 2.1

The definition guided the current research and also informed a review of research related to SRL. Findings from the existing research are presented in the next section.

Research on Self-Regulated Learning

Considerable research has been conducted in the area of SRL. The first studies were reported in the early 1980s with the latest published in 2004. We focus our review on four key components identified in our comprehensive definition: prior knowledge, resources, learning strategies, and motivation. In the following sections, we analyze what is known about these components as related to SRL.

Prior Knowledge

Prior knowledge has been identified as an important factor impacting a student's learning experience. As Ausubel (1968) stated, the most single important factor influencing learning is what the learner already knows. Research on prior knowledge has shown that students with greater domain knowledge (knowledge of subject area) understand better than those with limited prior knowledge (Chi, 1985; Glaser, 1984). For example, in studying students' learning in an introduction to psychology class, Thompson and Zamboanga (2004) found that students with greater preexisting knowledge of psychology understood better than those with limited prior knowledge. Sun (2003) examined English as Second Language (ESL) students' learning English in a web-based environment, and found that students with greater prior knowledge on English

are likely to undergo an easier and smoother learning process with little help from others (including the instructor) while students with limited knowledge often experience confusion and require more support and structure from the instructor.

It is important to note that accuracy in prior knowledge has an impact. If a learner's prior knowledge is not accurate, it can hinder the learning of new concepts and strategies (Alexander & Judy, 1988; Pintrich, Marx, & Boyle, 1993). In reviewing literature on the impact of prior knowledge on students' achievement, Alexander and Judy (1988) identified that inaccurate domain knowledge may well hinder the student from developing new understanding of a concept. For example, in studying students' learning in a physics class, Champagne, Klopfer, and Anderson (1980) contributed students' difficulty in mastering elementary mechanics to their naïve understanding of Aristotelian theories of force and motion. Students may derive understanding from common sense and real-world experiences, which are both good starting point, but not in and of themselves sufficient for building understanding.

Resource Use

"Resources are media, people, places or ideas that have the potential to support learning" (Hill & Hannafin, 2001, p. 38). Resource management is considered an important component of students' SRL (e.g., Garcia & Pintrich, 1994; Pintrich, 1995; Pintrich, 2000). Learners accomplish learning in the use of a learning resource or set of resources (Beswick, 1990), yet simply making resources available to students may not have much impact on students' achievement. Tripp and Roby (1994) investigated how adding various information to a hypertext dictionary impacted bilingual students' achievement. The results of the study indicated that adding sound to the software had no significant impact on students' retention of vocabulary. In fact, for resources to become meaningful, they not only need to be contextualized (Hill &

Hannafin, 2001), but appropriate strategies as well as motivational beliefs need to be adopted in order to effectively use those learning resources.

Learning Strategies

Self-regulated learners are viewed as having a large repertoire of learning strategies (Wolters, 2003; Zimmerman & Pons, 1988). Effective use of learning strategies can help students improve their academic achievement. For example, Hwang and Vrongistinos (2002) studied elementary teacher education students' SRL experience to better understand academic achievement. They found that the students' use of learning strategies, such as elaboration and intrinsic goals, were related to their academic success. Garavalia and Gredler (2002) also examined predictors for academic achievement. In their study of undergraduate psychology class students, they also found that one of the predictors of academic achievement was students' use of learning strategies, such as note taking and studying notes.

While students may have the ability to use certain learning strategies, such as note taking, not all of them will enact the use of those strategies. Research has shown that students' use of effective learning strategies is influenced by their goal orientation in a specific learning context. In a more recent study, Simons, Dewitte and Lens (2004) investigated the relationship between goal motivation and learning strategies among first year nursing students aged from 18 to 45 years. The results of the study indicated that intrinsically motivated students used more deep level strategies, such as summarizing course material, distinguishing main points and details, and connecting course material from different courses. Extrinsically motivated students employed more surface level strategies, such as memorizing something that was not understood and skipping parts that they thought the teacher would not explore in follow up questions. Further,

the results of the study indicated that intrinsically motivated students with deep level strategy use received higher scores than those extrinsically motivated who used surface level strategies.

This study reinforces the importance of identifying the learning strategies that self-regulated learners employ in learning. Another area in need of examination is the impact of motivation on learners' strategy use. We explore some of the related literature in the following section.

Motivation

Research indicates that resource and strategy use impact the level of success that students can accomplish in a learning situation (e.g., Hwang & Vrongistinos, 2002). Yet, to trigger the use of resources and strategies, learners need to understand how their use will assist with learning success. That is, learners need to be motivated to make use of the resources and strategies.

Research has shown that students' motivation is an influencing factor in academic performance (Ames & Archer, 1988; Wolters & Pintrich, 1998). For example, in a quantitative study, Pintrich and De Groot (1990) examined 173 seventh graders on the relationship between their motivation, self-regulation, and their academic performance. The results of the study indicated that students' intrinsic motivation was strongly related to their use of learning strategies and their persistence in their academic work. In studying the relationship between students' motivational orientation and their use of strategies, Nolen (1988) found that students' motivational orientations impacted their strategy use. Nolen also found that task-oriented students (i.e. students who feel most successful when learning something new or understanding a difficult topic) were more likely to use deep-processing learning strategies (i.e. try to see how this fits with what I have learned).

As for what impacts students' motivation to engage in classroom activities, research has identified students' goal orientation as playing an important role. For example, in studying students' achievement goals and their motivation processes, Ames and Archer (1988) suggested that a mastery goal orientation, as opposed to performance goal orientation, might help motivate students to sustain their involvement in learning, thus increasing the possibility for students to accomplish academic learning success.

Summary of Self-Regulated Learning Research

Research on SRL has been mostly focused on the student's self-regulation within a specific context as if it were a general process that operates across different learning situations (Wolters & Pintrich, 1998). The study of self-regulation has been focused on how domain knowledge, strategy use, and motivation impact students' academic achievement. These studies are important in that they not only provide a foundation for people to understand the SRL phenomenon, but they also show the significant impact of student's self-regulation on their academic achievement.

To date, the impact of the context on SRL has not been widely explored (Wolters & Pintrich, 1998). However, some studies do indicate that the SRL process may look different across different contexts. For example, Wolters and Pintrich (1998) conducted a study on the contextual differences in student motivation and SRL in three different contexts: mathematics, English, and social studies classrooms. The results of the study confirmed the hypothesis that SRL process is different in different contexts. More research like this is needed if we are to understand how the SRL process needs to be adapted to specific contexts.

One area that is ripe for research re: SRL is online learning environments. With the fast development of the Internet and Web, online learning has become a new and popular context,

particularly in higher education settings (Hofmann, 2002). Much of the learning in online learning lies in the interaction between the student and through the technology as opposed to between the student and the instructor in a traditional classroom environment. Therefore, it is important to study, in an online learning environment, the role of students' prior knowledge on technology and prior experience within online learning impact their performance; and what and how they utilize various resources; and what motivates students to learn.

Online Learning: Definitions and Classifications

"Online learning is any learning that uses the Internet to deliver some form of instruction to a learner or learners separated by time, distance, or both" (Dempsey & Van Eck, 2002, p.283). This is one of the many definitions that can be used to describe the types of learning that occur via the Internet and Web. Others, referring to Internet-Based learning, web-based learning, and distance learning (Berg, 1999; Hill, Wiley, Nelson, & Han, 2003) have adopted similar definitions. Developing an understanding of the definitions of online learning is important. It is equally important to understand how online learning occurs so as to situate the research completed to date.

Online learning can take many forms enabled by a variety of technologies (e.g., WebCT®, BlackBoard®, HorizonLive®, and Elluminate®). In terms of formats, online learning is often classified into three types: synchronous, asynchronous, and hybrid. Synchronous online learning occurs in real time, but participants can be in different physical locations. Asynchronous online learning occurs at anytime and any place of students' choice (Berge, 1999). Hybrid online learning blends the two forms together, often resulting in online and face-to-face interactions.

Online learning can also be classified into five levels (Harmon & Jones, 1999, cited in Jones, Harmon, & Lowther, 2002). The type of learning that is fostered may be different at different levels. As the level increases, it requires more and more self-regulation from the learners as more and more control of the instruction is put on them. Lower levels of web use include putting course syllabus and descriptions on the web. At those levels, learning is not much different from the one in a face-to-face classroom learning. As the level of web use increases, more course content is presented via the web and the communication between the students and the instructor and amongst the students themselves is mostly online communication via bulletin board, chats, or email. At those levels, learners are not only expected to develop effective online communication strategies, but they need to learn to motivate themselves to participate in online course activities as the presence in a class is not required as it is in a face-to-face classroom. The above-mentioned skills and abilities are aspects of a learner's self-regulation skills.

Research in Online Learning

Much research in online learning has been focused on understanding the characteristics of online learning and comparing students' success in online learning to traditional classroom learning. In exploring the characteristics of online learning, research has identified both opportunities and challenges in online learning. Opportunities include flexibility in studying anytime/anywhere, and self-pacing (Chizmar & Walbert, 1999; Felix, 2001), as well as reflexive thinking in written communication as it provides a permanent record of interaction as well as more time for writing responses (Meyer, 2003; Motteram, 2001). Challenges in online learning include frustration and isolation due to the lack of immediate feedback from the instructor and/or

peers in asynchronous communication and the lack of face-to-face interaction with the instructor and/or peers (Hara & Kling, 1999).

Many studies, individual research as well as overviews of research, have compared the learning success between online learning and traditional classroom learning, resulting in similar findings: no significant differences. For example, Koory (2003) examined the differences in learning outcomes for the online and face-to-face versions of "An introduction to Shakespeare" course, and found no significant differences.

Two big research synthesis reports in the past few years have also concluded no significant difference results. One was compiled by Russell (1999), who included 355 research reports from 1928 to 1998 related to the effective use of technology (mostly distance learning) and concluded no significant difference between distance learning and other modes of instruction. More recently, Bernard, et al. (2004) synthesized comparison research studies on the differences between online learning and face-to-face learning, and found a similar result to Russell: no significant differences.

Another area that has been explored is learner perceptions and preferences related to the format of the online learning environment. Research indicates that different formats may result in different perceptions of learning satisfaction and success by participants. For example, some learners prefer asynchronous written communication because it allows more time to reflect before responding (Meyer, 2003; Motteram, 2001; Petrides, 2002). Other learners report that synchronous interactions were preferred because they enabled a sense of presence (Tu & McIssac, 2002) and helped participants feel more connected with peers and the instructor (Song, Singleton, Hill & Koh, 2004). Different characteristics of online learning (e.g., format) appear to lead to different perceptions from learners in terms of their ability to be successful in the learning

environment. Further, as in face-to-face interactions, students do not always have control over the format used in an online setting. Therefore, understanding how learners direct and guide their learning in online environments is important if educators are to enable learning in a variety of online settings.

Self-Regulated Learning Online

One area that has received recent attention in the online learning literature is self-regulation skills. Research has investigated how specific aspects of self-regulation impact learning in an online context. For example, Balcytiene (1999) examined students' learning with hypertext. The results of the study suggested that flexible structure (i.e. accessing the parts by learners' choice) seemed to be most beneficial to self-regulated learners who are more capable of using metacognitive skills, such as extracting a whole picture from pieces of information. A recent study by Whipp and Chiarelli (2004) investigated how graduate students used traditional SRL strategies to complete tasks and react to the challenges in a web-based learning environment. Findings of the study indicated that students adopted traditional SRL strategies as well as adapted the use of those strategies in ways that are unique in web-based learning environments.

While these studies help build knowledge and understanding of students' SRL in web-based learning environment, more studies are needed to generate a comprehensive view of students' self-regulation in online environments. As stated by Hartley and Bendixen (2001), self-regulation appears to be an important aspect of online learning but more investigation is needed if we are to understand the impact of SRL in virtual environments. Exploring SRL in a variety of online contexts (i.e., asynchronous, synchronous, and hybrid) is an important step in this

research. The reported study seeks to contribute to the literature base in an exploration of SRL in an online learning environment that has both synchronous and asynchronous components.

Research Design

The purpose of this study was to investigate adult learners' SRL experience in an online course offered at a higher education institution in the South. Specifically, we examined the role of prior knowledge, learners' resource and strategy use, and learners' motivation to learn in an online course, seeking to answer the following questions: 1) how do learners' prior knowledge and experience influence their online learning experience? 2) what kinds of resources do learners utilize to accomplish their learning goals and how do they use those resources? 3) what strategies do learners employ in their online learning experience? and 4) what motivates learners to participate in online learning activities?

A qualitative research design was adopted to study the self-regulation phenomenon in real contexts, real time, and real events (Perry, 2002; Winne & Perry, 2000). In the qualitative investigation, several participants were used to help generate a rich account of the phenomenon, offering insights into the participants' experience that can help structure future research in the area (Merriam, 1998). An individual participant in the online course was viewed as a case; multiple cases were examined to form a general view on the phenomenon (Merriam, 1998).

Participants

Eight participants from an online course voluntarily participated in the research study. The participants were female Caucasians in their mid 20s to mid 50s. The participants had a variety of experiences and background, ranging from stay-at-home moms to recent college graduates to schoolteachers seeking to change professions. The majority of the students in the

online course, including the participants in the study, were admitted into the same cohort in a library media graduate program.

Six participants were selected for final in-depth data analysis. Two of the six participants had prior online learning experience. The other four were first-timers in online learning. However, one of the four first-timers had taken several independent study courses at distance, which shared some similarities with online learning in that they both require learners to take much responsibility in managing their learning. Two participants (Dawn and Rose) were stay-at-home moms. Two participants (Ann and Mia) were recent college graduates with no full-time working experience. The final two participants (Betty and Tina) were school teachers.

The Online Course

The online course used for the research study was one of the required courses cohort members take in their first or second semester in the program. The course was delivered via WebCT® in a regular 16-week term. This specific context was selected based on the following criteria: 1) it is an online course offered to adult learners (college level or above); 2) learners were expected to take an active role in managing their learning experience[2]; and 3) the course interactions were based on online communication.

The course was designed to help library media students develop an understanding of the theory as well as skills related to preparing a technology plan that is responsive to community and school needs for technologies that enhance teaching and learning. Students enrolled in the course were expected to learn to assess community and school information needs, and apply information technology skills to meet teaching and student learning needs. Major tasks that students were expected to complete in the course included: Internet search, independent reading,

[2] See Appendix A for the course syllabus.

curriculum map development, community profile preparation, technology assessments instrument development, and writing a paper defining the technology planning process. [3]

The students met with the instructor via the WebCT® course management tool both asynchronously (on the bulletin board) and synchronously (in the chat room). The instructor conducted live chats (synchronous communication) twice a week on Tuesdays and Thursdays, except during holidays. The students were required to participate one chat per week. As for bulletin board discussion participation, the instructor did not require students to post certain number of postings, but she highly recommended students to participate regularly. One required participation in bulletin board in the course was that students should post their reflection journals and assignments on the bulletin board to their group members. Therefore, students assignments were publicly accessible to all the members in the class.

Data Collection Methods and Instruments

The study employed a variety of data collection methods. The primary data for the study came from twenty-four interviews that were conducted face-to-face with eight participants (three interviews per participant). To enhance the validity of the data, other types of data were also collected throughout the semester. Specifically, transcripts of online bulletin board discussions and live chat room discussions were collected. The data collection took place throughout a 16-week semester.[4]

Interviews. Three semi-structured interviews were conducted face-to-face with each participant throughout the semester to generate a comprehensive understanding of each participant's overall learning experience in the online course. The first interview was conducted during the second week after the semester started to gather participants' initial reaction to the

[3] See Appendix B for course requirements.
[4] See Appendix C for course calendar and Appendix D for research timeline.

course being offered online. The second interview was conducted around the mid-term of the semester to help understand participants' learning progress thus far. The third interview was conducted a week after the course ended to gain insight into the participants overall experience (see Figure 2.1 for an abbreviated version of the interview guide).[5] The interview guide was pilot tested in a similar online course with similar target population to strengthen the reliability and validity of the instruments. The first author conducted twenty-one out of the twenty-four interviews. Another researcher conducted the other three interviews. The second researcher was considered to be well-trained for conducting the interviews. She has considerable experience with the interview process and has a Qualitative Research Methods certificate. Eighteen interviews out of the twenty-one interviews conducted by the first author were selected for final in-depth analysis on which the results of the study were based.

Figure 2.1

Bulletin board discussions and chat sessions. Transcripts of the participants' online activities in the bulletin board discussions and live chat session were secondary sources of data. The instructor assigned students into groups of four to six people. Students could participate both within their groups and as a whole class though they were only required to participate in their groups' discussions. Transcripts of bulletin board discussions were compiled from group discussion forums (n=16) as well as the whole class discussion forums (n=9). Nineteen chats took place throughout the online course and all transcripts of the chats were collected for the research study. The transcripts of the online discussions were used mainly used to triangulate the data from the interviews as well as findings resulting from the interview data analysis

[5] See Appendix E for the full interview guide.

(Silverman, 2001). Other usages of the transcripts include validating as well as questioning the results of the study.

Data Analysis

Data analysis was conducted as data became available. Interview data from two of the eight participants in the study did not provide a rich description of their SRL experience (i.e., what the experience was like), as some of their responses to interview questions were as simple as “yes” or “no” similar to how one would respond to a survey. Due to lack of richness in the data from two participants’ interviews, six participants were selected for in-depth analysis. This process is aligned with Patton's (1990) strategy of "purposeful sampling" in which researchers select participants based on the richness of the data from those participants. In analyzing the data from the six selected participants, inductive analysis and constant comparison were employed as analysis methods for the study. Inductive analysis is often used to generate theories by closely examining data from field notes, interview transcripts, and other qualitative data (Coffey & Atkinson, 1996). Inductive analysis can be a powerful method in the beginning data analysis process because it helps "provide a set of inductive steps that successively lead the researcher from studying concrete realities to rendering a conceptual understanding of them" (Charmaz, 2000, p.675). Constant comparison analysis was an integrated part of the inductive analysis process. Codes and themes throughout the analysis process were compared to analyze different perspectives on central issues (Patton, 1990).

Before the actual data analysis started, data were organized into manageable formats. Bulletin board discussion transcripts were organized into a table format for each participant. The first step was to use the “find” tool in a word processing application to extract data related to

each participant.[6] Next, a table with eight columns was created to organize the bulletin board discussion data for each participant, including information on the following: message number, time of participation (time, day, and date), theme of the message, and whether the posting was required, a response, or an initiation.[7] We then organized the bulletin board into two categories: within group activities[8] and whole class activities.[9]

Once data were organized, we began the data analysis. Analysis took place at three-levels. At the basic level, the individual interview transcripts, bulletin boards and chats transcripts were analyzed. The next level was that the individual as a case was analyzed. The broadest level was that all cases as a group was analyzed to generate themes relating to adult learners' SRL experience online. Specifically data analysis involved the following major steps: coding, categorizing, and thematizing. Each is described in more detail in the following subsections (see Figure 2.2 for an overview of the analysis process).

Figure 2.2

Coding. An open-coding approach was used to begin the analysis. Open coding involves exploration of the data without any prior assumptions on what might be discovered (Glaser & Strauss, 1967). Three interview transcripts from one participant were used to begin the coding process. The codes identified in those interviews were kept in a code list with a code name, definition, and representative quotes. We then used constant comparison to analyze the codes across different participants' interview data. This enabled the researchers to confirm reoccurring codes as well as add new codes to the code table (Goetz & LeCompte, 1981). Once a final code list was generated from all the interview transcripts, the codes were then compared to identify

[6] See Appendix F for a sample individual bulletin board transcript data.
[7] See Appendix G for a sample individual bulletin board transcript table.
[8] See Appendix H for a sample bulletin board within group activities table.
[9] See Appendix I for a sample bulletin board whole class activities table.

whether there were codes used to represent similar things. A reduced code list was produced as a result of comparing the codes (see Table 2.2 for a sample of the code list).[10]

Table 2.2

Categorizing. There are multiple ways to categorize qualitative data. One way of organizing data into categories is to relate the data to the research questions (Coffey & Atkinson, 1996). Coffey and Atkinson (1996) believed that organizing data using research questions is practically valuable, as the nature of qualitative data is that the data related to a specific topic are not generally found bundled together in interviews. For the purpose of this study, prior knowledge, resource use, strategy use, and motivation were used as the organizing categories as they were the focus of the research questions. Once categories were identified, they were then used as codes in the second round of coding. We refer to this coding as "closed coding" as a contrast to the "open coding" since we were applying the developed codes to the data as opposed to generating codes in the open coding process. The purpose of the closed coding was to help organize the data in a manageable and convenient way. After closed coding, we extracted the data (i.e. quotes from the interviews) related to each category into one file and organized them participant-by-participant (see Figure 2.3 for a sample).

Figure 2.3

Thematizing. In thematizing, we look for patterns, themes, regularities as well as contrasts, paradoxes, and irregularities (Delamont, 1992). We first identified themes from one participant's interview data. Then we used a constant comparison approach (Patton, 1990) once again to apply the themes to other participants' interviews to identify reoccurring themes as well as new themes. We concluded our themes based on their occurrences in at least half of the

[10] See Appendix J for a complete code list.

participants. Once the themes were generated from all the interviews from all the participants, they were organized into a table as preliminary themes (see Table 2.3 for an example). We then applied the preliminary themes to the transcripts from the bulletin boards and chats to validate the themes (see Table 2.4 for an example). As a result, a final list of themes was generated.

Table 2.3

Table 2.4

Triangulation. Triangulation "refers to the attempt to get a 'true' fix on a situation" and it can be accomplished "by combining different ways of looking at it or different findings" (Silverman, 2000, p.177). Specifically, triangulation of the study was achieved by using multiple cases, different data sources, and data from different time period during the study. The use of multiple cases helps enhance the external validity or the generalizability of the findings (Merriam, 1998). The more cases included in the study, the more variations there are across the cases, thus making the findings more applicable to similar contexts. Different data sources (e.g., interview data, bulletin board transcripts, and chat transcripts) were collected to enhance the internal validity of the data. Three interviews were conducted at different time periods during the semester the study was being investigated to strengthen the reliability of the data.

Findings

The findings of the research study were organized into four categories: 1) prior knowledge, 2) resources, 3) learning strategies, and 4) motivation. Patterns and themes identified in each category with supporting data are presented in the following sections.

Prior Knowledge

Three themes were identified related to the impact of prior knowledge on learning in the online course: 1) prior knowledge or experience with online technologies and/or online learning

may help reduce the level of anxiety; 2) prior knowledge or experience may help learners become more strategic in pacing and managing their online study; and 3) lack of prior knowledge in the content area or with the online technologies/online learning may help increase learners' motivation.

Prior experience reduces level of anxiety. When learners first come to an online course, they often experience anxiety as a result of the lack of immediate social interaction and face-to-face contact with the instructor and other students (Hara & Kling, 1999; Northrup, 2001). The results from all the participants' experience (n=6) indicated that learners with no prior experience with online learning experienced higher levels of anxiety than those who had prior online learning experience. Betty, Mia, and Rose did not have prior experience with online learning, and they expressed feelings of anxiety in the online course during their first interviews. For example, Mia was new to online learning and she expressed her anxiety in the first interview:

> it just makes me nervous. I don't exactly know what she is expecting from us in the course work. I don't know anybody working in the school earlier on, that is kind of frustrating. Just the idea of not having somebody lecturing to you and you are taking in what they say forming your own ideas. It is more like we read other things and we form our ideas and we talk to each other. And she is there kind of to say yeah you are going to the right direction, no you are not. Not in a traditional sense where she talks and tells us three things about it and we take notes and then doing the assignment. I guess I was afraid I would be behind and afraid that I couldn't keep up with the work.

Mia was nervous and anxious at the beginning of the online course because it was a very different type of learning from traditional classroom instruction to which she was accustomed. As she stated, she did not have an instructor lecturing to her and telling her what was important.

Rather, she had to figure out on her own through her own reading. Not knowing what was expected in this type of learning environment made Mia anxious.

Tina did not have prior experience with online learning. However, she had completed several independent study courses, which were similar to online courses in that they both require a great amount of self-initiative. Therefore, Tina did not express much anxiety in the first interview, either. As for participants who had had previous experience with online learning, the experience was rather different. For example, both Dawn and Ann had taken similar online courses before and their reflections on the experience were more confident. Dawn indicated she was "not worried anymore" because of her prior experience. Ann stated something similar, and elaborated that she "had them (anxiety) in their previous online courses," and did not have them anymore.

Strategic pacing and management. Another theme relating to prior knowledge is that prior experience with similar learning experiences helps learners become more strategic in pacing and managing their study. All three participants who had similar learning experience with the online course under investigation, reported use of strategic pacing and management in their learning in the online course. For example, when talking about her bulletin board discussion experience, Ann said in her interview:

> [L]ast spring I read every posting, every group's posting because I wasn't sure if I was supposed to just read my group. But now I will glance what other groups are posting, but I concentrate on my group. Other groups are kind of saying the same thing. I can deal better with 7 people rather than 30.

Ann became strategic in managing her time while participating in bulletin board discussions. She knew from her previous online experience that she needed to prioritize her attention on her group instead of the whole class.

Dawn, who had also taken an online course before, found in her past experience "these discussions on the bulletin board are very informative", and therefore, she was paying attention to the bulletin board discussions. Dawn also managed to participate in online discussions because she knew from her past experience that it could become overwhelming, as she said in the first interview, "I am definitely motivated to go there because if I don't go there, it builds up a lot."

Tina also reported strategies for pacing and managing her online experience. Although Tina had not had a similar online learning experience before, she had taken several independent study courses. This experience helped her understand the expectations of an online course, enabling her to be more strategic in managing her online learning. As Tina stated in an interview,

> I have had three independent classes and I am used to doing my work and [getting] some feedback. I also did it by mail. I mailed my assignment and got my feedback and my grades and you are done. Actually it was worse because you had a year. You signed up for a class, you got these assignments and you have got a year to get your assignments mailed in. It was completely up to [you]. You can complete it in 3 weeks or you can take a whole year. You pretty much have to make yourself do it because there was nobody there saying to you, hey you have to turn in your assignments and there is no due date.

Tina's independent studies experience was similar to many online learning experiences in that the learners need to take more responsibility for learning on their own. Understanding this expectation made Tina realize that she needed to manage her learning mostly on her own, which she did by actively seeking resources and participating in online discussions.

Lack of prior knowledge as motivator. Sometimes a lack of prior knowledge with either the content area or online learning may help learners become motivated to participate in online course activities. Two of the three participants who did not have similar learning experiences with the online course indicated that part of their motivation to learn was due to their lack of prior knowledge. For example, Betty did not have prior knowledge with the content area or prior experience with online learning, which made her pay attention and spend effort in the online course. As she stated in the first interview, "[m]aybe just the traveling not being in a school for a long time. Anyway, I looked online and can get a feel of what is expected. I keep my eyes and ears open. I did make some networking contact."

Similarly, Rose realized that she was lacking knowledge of the content and experience with online learning. To assist with the class, Rose bought and read the textbook prior to the beginning of the class, which increased her confidence with the class. As she said, "[t]he most important thing to me was knowing the textbook, so that I could get that and be able to review a little bit, which gives me a little confidence of the course."

Rose also spent time familiarizing herself with the technology that was used for delivering the online course. As she stated in the first interview, "I have never used WebCT before. What I did was, might be the evening before the first chat. My 14-year daughter and I sat down and she showed me how to use the chat and the bulletin board. Just so I could at least envision what I could be doing." Both Betty and Rose were motivated to spend time and effort

preparing for the course because they knew they were novices to both the content and the online learning format.

Resources

The resources learners used in this online course were classified into two categories: information resources and human resources. Each is described in the following sections.

Information resources. Information resources included the course website, bulletin board discussions and chats. The course website contained a link to the course syllabus where learners could find information about assignments descriptions, course calendar, and other general course information. All participants (n=6) indicated in the interviews that they used bulletin board discussions and chats (including the archives of live chats) as resources to monitor their learning progress, to seek answers to their questions, and to interact with each other.

One particular resource that was unique in the online course was an "advanced organizer." This resource, developed by the course instructor, organized the course activities in a weekly manner as opposed to the course calendar that was organized session-by-session.[11] All participants (n=6) reported that the advanced organizer was helpful because they could easily see what activities they were supposed to be working on each week and what activities were coming.

Human resources. The human resources participants identified in the online class included the instructor, peer students, and personal connections. All participants (n=6) indicated they would seek the advice of the instructor for help in clarifying and completing assignments. They would also seek other students in the class for learning support.

[11] See Appendix K for the advanced organizer.

All participants reported that they relied on the instructor to develop a clear understanding of the course expectations and assignments. They would ask the instructor questions when they had uncertainty in those regards. For example, Ann said in an interview,

> Like if it is something that can wait until class, I would wait and ask her then in a chat. But if it is something urgent like something is due, I would freak out. First thing I would email her and then I post to the bb. I know she checks our bb for our comments regularly. She would respond there as well. She always gets back to us quickly.

Similarly, Dawn expressed that she would usually wait until the chat to ask the instructor questions if she did not necessarily need immediate answers, “I knew that she would be able to answer these questions. The ones I had were not immediate questions. So I figure I would wait for the first chat.” Both Ann and Dawn reported use of instructor as a human resource to help clarify course expectations.

The data from the interviews, bulletin board discussions, as well as the chats, all supported the use of "peers as resources" in the online course. Participants reported during the interviews that they would rely on peers to “bounce ideas off each other.” They also indicated they could get help from peer students in obtaining helpful learning resources. For example, Rose said in an interview,

> two students cited articles that I found especially helpful. They would give me those citations via email after the chat and both them did and I got the articles after that. Great. I just really respect my colleagues for being willing to share that information and following up what they said they would do.

"Peers as resources" was also evidenced in online bulletin board discussions and chat transcripts. All participants seem to be more willing to take part in bulletin board discussions

with peers, thus being able to make use of peers' knowledge and experience, only when they feel comfortable in the class. For example, Betty was not very confident with her learning in the beginning of the semester because, as she indicated in an interview, she did not get a high grade in her first two assignments. After getting feedback from the instructor on her first two assignments, Betty was able to figure out the instructor's expectations and received full credit for her third assignment, which increased her confidence. As Betty said in the second interview, "in fact, I started off the chat. Because I was very excited. I wanted them to know it is a success story. I don't talk all the time, but I am doing better." Once Betty felt confident about herself due to her good grades on her assignments, she started feeling good about what she was doing. Therefore, she was willing to share her success story related to her class project (i.e., interviews with teachers) in the chat. As she said, she actually started the chat, which she did not feel comfortable enough to do earlier in the term.

Because the nature of the course required learners to collaborate with teachers in schools, personal connections were also identified as a helpful resource. For example, Ann turned to her mom, who was a schoolteacher, to connect her to other schoolteachers to collaborate for her course projects, as she said in an interview, "My mom is a teacher. So I will contact people. She is like, this lady is very helpful. If she cannot help, she will know somebody who can." Rose also said she had to go to her school colleagues to help her with the coursework. As she said in the third interview:

> another strategy was realizing that I absolutely have to depend on my relationship with the teachers and administrators of my school to do my coursework. So I had to call in my favors and indebt myself in order to get the information I need to do my coursework. I go back a long way. Some of them, I go back a couple of years and some I go back a

> very long time. It turned out there is an elementary teacher who manages the computer lab in her school. I am her daughter's Girl Scout leader. So these are the ties you need. She has been a help to me. I have gone back to find people.

In completing the course requirements, participants used various resources ranging from information resources available on the course website, course discussion forums, to human resources such as peers, family members and other personal connections.

Learning Strategies

The majority of participants identified two learning strategies: strategic planning and mini steps. Each is described below.

Strategic planning. Being strategic was perceived to be important by all six participants. In this study, strategic planning took several forms, ranging from planning at the beginning of the semester to connecting different courses taken at the same time together to make them complementary to each other. For example, both Ann and Dawn were able to connect the assignments of the online class with projects in a different course, which not only saved them time, but also enabled them to use the other course as a learning resource for this online course, as Ann said in an interview, "I am also taking the 6400, which is the theory class. So 6400 and 6320 were both talking about constructivism and project-based learning, which were wonderful because I felt like everything was blending." Similarly, Dawn expressed in the interview,

> I am taking 6400 the same time. So a lot of that overlaps. Having those chapters we haven't got yet, but they were in the ebook and I went ahead read those for Dr. Brown's assignment. Through the chat and the ebook, I think I got a much better understanding of concepts than what I would have just got through the ebook. I thought they worked very well for me.

Ann and Dawn were able to use the other class (6400) as a learning resource for this online course as both these classes talked about similar subjects, such as constructivist learning. Both of them found the overlapping of the subject across different courses helped build their understanding of the topic.

Strategic planning may also mean pacing the learning process as well. Betty provided a good example of the need for pacing. Due to her other life responsibilities, Betty found working ahead was really helpful: "I tried to stay 2 weeks ahead. The pacing. Because I can tell at the beginning, with other obligations, I knew it was going to be critical to me with my family situation that my son and my mother are sick. I tried to pace myself stay ahead. There is no last minute pulling things together."

"Mini steps." The data indicate that course projects or requirements appeared overwhelming to some students. Four out of six participants (66.7%) found breaking the big project into small steps was helpful (i.e., "mini steps"). For example, Ann found that breaking the project into mini steps helped her feel less anxious and better able to manage the project, as she said in an interview, "at first it seems like this huge giant to tackle, but it really wasn't. Once you have group members breaking done into mini steps. It was a lot easier to do." Dawn reported her use of similar strategy in an interview, "I tend to summarize her assignments into bullet points to be my to do list so that I can break into small pieces so that I can check it out as I go."

Tina stated that she realized that it could be overwhelming especially if "you have got these two classes coming on the same time." Her strategy to overcome this challenge was to break the projects into pieces, as she said, "you have got to work. You just got to break them into pieces." Specifically, Tina stated: "I labeled this is due this and this is due this. So I kind of

looked at a map when I have to be where. I am very good at logistics. So when I am looking ahead, I can see I have got to have this done by this time. I think for a class like this, it is important."

The course projects may appear challenging to some students in an online class. Yet, if approached strategically, they may not be as big as they appear to be. Strategic planning and "mini steps" are among the effective strategies that participants found helpful in online learning.

Motivation

When asked about their motivation to participate in course activities in the online class, participants identified five motivating factors: 1) seeking course-related information; 2) desire for knowledge; 3) monitoring learning progress; 4) course requirement; and 5) social interaction. Each is described in the following sections.

Seeking course-related information. All participants identified that seeking course-related information was a motivation factor. They would go to the bulletin board forums and the chat sessions to get the instructor's and peers' perspectives on topics, and look for answers to course-related questions.

Participants reported that they had respect for the instructor's perspective as well as their peers' comments. They were motivated to go to the bulletin board and chats to learn different perspectives that they felt helped them to understand the subject matter. Dawn was a stay-at-home mom coming back to school for a career change. She stated in an interview,

> I have received so much information from those people who already in the field giving me new insights of things from new perspectives that I have not yet been able to come around that way. It is a lot of a-ha's. Oh, that is how they... that is another way to look at it. That is another way to handle it. I feel real good about it.

Dawn went to the chats because she could benefit from the perspectives of those peer students who were working in the field, and who had new insights and perspectives that she respected.

Another type of course-related information participants reported seeking in chats and bulletin boards were answers to questions they might have regarding the course content and assignments. In fact, some participants saw the chat room simply as a place for questions and answers. As Mia stated in an interview, "[t]he chat room is really set up so that we can ask any questions we had. I think that is like the number one thing and all the other things add to it. So certainly people ask any questions about the assignments before they are due and Dr. Green responded to it and other people in the class respond to it."

In this online course, the primary sources for students to gather course-related information were the bulletin board forums and chat sessions. Participants indicated that they were motivated to participate in the online activities, regardless of it being required or not, to understand the topic in multiple perspectives as well as to get answers to their questions.

Desire for knowledge. Pure desire for knowledge can be a motivating factor. Five out of six participants reported that part of their motivation to learn and participate in course activities came from their desire for knowledge. The desire for knowledge sometimes comes from the desire for career development. As Rose said in one of her interviews, "I am motivated by my end desire to work in the field for the remaining years of my life." Dawn also indicated that what she had been learning was beneficial to her in her future career as a school media specialist, as she said, "I have been very amazed with all the projects I have worked on, I don't think there has been one that I don't think would apply to what I would do as a media specialist. I find it very hands-on. What I have learned, I can apply elsewhere."

Betty was the only participant who did not state specifically that her motivation to learn came from her desire for knowledge. Rather, she was motivated to learn because she did not want to stay behind, as she said in an interview that she participated in the bulletin board discussion and chats because she wanted to know "where they [other students] were in the process? Was I lagging behind?"

Monitoring learning progress. Another motivation factor that participants identified was that they used it as a resource to monitor their learning progress. Five out of six participants indicated this as a motivating factor in their learning in the online course. For example, Ann said in an interview, "I got there (bulletin board) to stay up to date what other people are doing. It kind of gives me a checkpoint. This is where other people are and this is a point where I need to be." Similarly, when talking about her motivation to read the archives, Mia said, "I think part of reading archives is that because I got bits of information during the chat, but not all of it. I didn't want to miss anything." Ann went to the bulletin board to use other people's progress as checkpoint to monitor her own progress. Though not required, Mia read archives of chats, besides taking part in the live chats, in order to make sure she was not missing anything in the conversations.

The participant who did not state that monitoring learning process was her motivation to participate in online learning activities was Tina. Tina was a very self-disciplined person and had taken several independent study courses that require self-discipline and self-management of learning to succeed and complete those courses on time. She did not find it a problem or a challenge to monitor her own learning progress; therefore, she did not report referring to others' activities on bulletin board as a checkpoint for her own learning progress.

Course requirements. All six participants indicated that course requirements were a motivating factor for them to participate in online class activities, such as the bulletin board discussions and live chats. For example, when talking about her participation in the live chats, Ann stated, "I always go to the one I am supposed to go to. And if I have additional questions, I would go to the other one." Mia went to the live chats because she saw the chats as "class time" that required attendance, as she said in an interview, "I kind of feel like that's our class time. Even though it is not required in a sense you will be necessarily penalized on, … I wouldn't want to cancel for our office hours, but I kind of try to be around because I would feel that's our class time you would go to like any other classes." The analysis of the bulletin board discussion transcripts also indicated that all participants posted their assignments on the bulletin board and commented or responded to group members' postings, as required or recommended by the course.

Social interaction. One other reason that learners participated in online activities was social interaction. Social interaction included building self-presence, getting to know other people, and having conversation with others. Five out of six participants indicated that they went to the chats in order to make a good presence of themselves to others as well as getting to know other people so that they would be able to establish a good working relationship among each other, because they knew their program of study required collaboration with each other in almost every class they needed to take. For example, Ann stated in an interview, "it is also good to know. I mean I don't' know who I am going to work with the next semester. So making sure I see other people's names. … making sure…they know I am a hard worker. So if we have to work together, we have that trust built already." Rose reported that her participation in the live chats was partly because she wanted "to be able to interact. If someone had to say something, I

don't want to go back to read the archives and read something someone had said. I have got a lot of questions that is in my mind and now it is too late to ask it. Nobody can comment on it. That's why."

The primary communication among students in the online class was via bulletin board and chat room discussions. Participants saw the need to build a good presence of self to peers in order to establish a good working relationship with them, which made them an active participant in those online discussions. Also, the synchronous discussion in the chat room provided opportunity for the participants to get in-time response to their questions or comments, thus motivating them to participate in the chats.

Mia was the participant who did not state social interaction as a motivation for her to participate in online activities. Rather, her participation in bulletin board discussions and chats was goal-oriented and centered on course related information. In fact, she expressed during an interview of her concerns over conversations that were not related to course work, "I don't think it is too helpful. I mean sometimes we spent time on something that is important, but people talking about their life, their school, what's happening in their media center."

Discussions

The results of the study provided evidence that further supported some of the existing knowledge regarding to self-regulation in general. Yet, at the same time, the study presented some specific insights into the understanding of self-regulation in an online learning context. In the following section, we discuss the findings in relation to the research questions we investigated: prior knowledge, resource use, strategy use, and motivation (see Table 2.5 for a summary).

Table 2.5

Prior Knowledge: How does learners' prior knowledge and experience impact their online learning experience?

Prior experience with online learning or similar learning experiences may help learners become easily oriented to the online course. The results of the study indicated that prior knowledge and experience with online learning helped make the learning experience less anxious. Participants who had prior experience with similar online learning did not express having anxiety. Yet, those who did not have prior experience or knowledge reported being anxious in the beginning of the online course due to their lack of knowledge with what online learning was like. This specific finding provided further proof to Ausubel's (1968) statement that prior knowledge is a very important factor impacting learning. It was also consistent with findings from other research studies in that the results indicated great prior knowledge helps bring smoother learning experience (e.g., Sun, 2003).

It is important to note that the lack of prior knowledge does not necessarily imply a negative outcome. The results of the study indicated that learner's recognition of their lack of prior knowledge or experience actually strengthened their motivation to learn. Therefore, if provided appropriate support, such as technological orientation, those learners with little of no prior knowledge with online learning may easily catch up and thus becoming successful in online learning even though it is their first online course. Yet, the motivation effect does not result solely from lack of prior knowledge. Participants' statements in the interviews seem to indicate that learners' awareness of lack of prior knowledge, together with other elements such as their determination to learn well, can help motivate learners to learn.

Resource Use: What kinds of resources do learners utilize to accomplish their learning goals?

Resources are important in learning (Beswick, 1990). The results of the study suggested that learners in an online learning context utilized a variety of resources in their learning. Those resources included information resources and human resources. While some information resources are commonly available in most online courses, such as course syllabus and course calendar, there was one specific information resource designed and developed by the instructor of the online course that participants found especially helpful in their learning. This specific resource was called "advanced organizer," which structured the course activities week-by-week. The fact that all participants found it helpful seems to suggest that there exist opportunities to design and develop online instructional support that can help facilitate learners' learning online.

Another important resource that participants reported as helpful was the course instructor. It is generally believed as many research studies have indicated that learners' access to human resources such as the instructor and peers, is limited when compared to face-to-face classroom learning environment (Hara & Kling, 1999; Song, Singleton, Hill, & Koh, 2004). Yet, the results of the study seemed to suggest that instructor is an important learning resource, without which successful learning cannot be accomplished. Similarly, as the results of the study also suggested, peers played an important role in each other's learning as well.

Strategy Use: What strategies do learners employ in their online learning experience?

In a given learning environment, other than prior knowledge, the learning resources available to learners are rather the same to each learner. However, the learning achievement of each learner often differs. The results of the study concluded two strategies that most participants reported using in their learning strategies: strategic planning and mini steps. While prior knowledge may play a role in the different levels of achievement as discussed earlier, the way a

learner utilizes those resources may also impact on their level of achievement (Tripp & Roby, 1994; Simons, Dewitte & Lens, 2004). However, the way participants utilized those strategies showed some variations.

Take strategic planning for example, all participants reported that they utilized strategic planning in their learning. However, the specific plans and the resources participants reported using were not all the same. Some strategically planned their learning in this online course in connection with other courses they were taking, thus being able to use the other course as a kind of learning resource for this online course, and vice versa. Others developed a timeline plan so that they could stay ahead of the course to avoid being left behind.

While the way participants used those strategies and the resources they utilized in carrying out those strategies might differ for different participants, they all reported that those strategies helped them accomplish learning success in the online course. This finding further supported the importance of learning strategies in online learning (Hannafin, Hill, Oliver, Glazer & Sharma, 2003).

Motivation: What motivates learners to participate in online learning activities?

Motivation comes in different forms. The results of the study showed five major motivating factors in participants' online learning experience. Some of the motivation factors are common in different types of learning contexts, and others are closely related to the online learning context. For example, course requirement and desire for knowledge may be motivation factors for some learners whether they are in a face-to-face classroom or in an online course. However, motivation factors such as seeking course-related information, monitoring learning progress, and social interaction are especially evident in an online learning context.

In a face-to-face class, physical attendance in lecture classes help expose students to course materials and course progress more frequently (Elvers, Polzella, Graetz, 2003). However, in an online course, due to the limited synchronous interaction, learners need to take primary responsibility in understanding course requirement, and monitoring their learning progress (Song & Hill, 2005). Similarly, learners' interaction with each other is not as readily and easily available as it is in a face-to-face classroom. Therefore, as the results of the study indicated, part of learners' motivation to participate in online activities such as bulletin board and live chats comes from their desire or perceived need to interact with peers.

Implications

The results of the study help build an understanding of adult learners' SRL in online environments. The study indicated similar findings related to SRL in traditional classroom context as well as ones that are specific to an online situation. Consistent with the findings in traditional classroom environment, prior knowledge (Chi, 1985; Glaser, 1984; Thompson & Zamboanga, 2004), resource use (Garcia & Pintrich, 1994; Pintrich, 2000; Pintrich, 1995), strategy use (Wolters, 2003; Zimmerman & Pons, 1988), and motivation (Ames & Archer, 1988; Wolters & Pintrich, 1998) played positively important roles in learners' SRL experience in the online course. Yet, the qualitative study concluded some findings in the above-mentioned areas of SRL that are uniquely related to online learning context, which imply significance in future research and practice in the following areas:

- providing technological assistance for first timers,
- building a collegial online learning community that fosters social interaction,
- designing resource-based online learning, and
- becoming a strategic online learner.

Providing Technological Assistance for First Timers

Online learning is technology-oriented and it may not be appropriate for everybody (Kearsley, 2002). Research has shown that first timers in online learning environments often experience anxiety and frustration due to the technology challenge, which can negatively impact their online learning experience (Hara & Kling, 1999; Song, Singleton, Hill, & Koh, 2004). The reported study showed similar results in that Mia, Rose, and Betty, who took the online course experienced anxiety due to technology challenge in the beginning of the course.

The results of the study also indicated that prior experience with online technologies might help reduce the level of anxiety. Prior experience with technology has been found to reduce anxiety in previous research in the literature (e.g., Mason & Weller, 2000). Ann and Dawn confirmed this during this study. They both had prior experience with similar online learning, thus they did not experience the high level anxiety, as did others. These results seem to suggest the significance of implementing online technology orientation program in online instructional practice for students who take the online course for the first time.

Building a Collegial Online Learning Community that Fosters Social Interaction

Online learning, in comparison to a face-to-face classroom learning environment, requires high levels of interdependence among students (Palloff & Pratt, 2001). It is important to support social interaction among students in an online learning environment (Rovai, 2003), as research has indicated that social interaction can help motivate students to commit to learning (Gabriel, 2004).

Consistent with those perspectives and research findings, participants in the study indicated that part of their motivation to participate in online activities came from their desire for social interaction. All six participants considered peers as a primary learning resource for each

other in an online course. They indicated a need to interact with each other to check their learning progress in the class and to classify course expectations. They also found each other a valuable long-term colleague that they can call on for help (i.e. networking) as they did in this cohort program where they were studying to become school media specialists. Thus, it is critical to have a collegial learning community in an online course.

Some research has investigated the opportunities as well as challenges in building an online learning community (e.g. Hill, Raven, & Han, 2002), suggesting strategies for developing collaborative online environment such as by using authentic tasks (Herrington, Oliver, & Reeves, 2003). However, as Reeves, Herrington, and Oliver (2004) pointed out, "the vision of online collaborative learning is compelling, (p.53)" but the reality is "disappointing (p. 54)." More research is needed to explore ways to build online learning communities that foster the development of collegial relationships among learners.

Designing Resource-Based Online Learning

Resource use is an important aspect of SRL (Pintrich, 1995). In an online environment, the resources not only take different forms, but also require different ways to utilize it. The results of the study identified two forms of resources as helpful resources for learning in the online course: information and human resources. The information resources that participants found helpful in monitoring their learning progress included the advanced organizer that the instructor made available to the students, and the archives. Human resources that participants found helpful in their learning included the instructor as well as peer students.

Participants' use of different resources suggests the importance of resource-based learning (Beswick, 1990; Hill & Hannafin, 2001). It appears that there is some value in moving toward a resource-based learning environment, particularly online where the resources are so

readily available. Yet, simply making resources available may not be adequate (Tripp & Roby, 1994).

The results of this study suggested an important relationship among resources, motivation, and learning strategies. The availability of resources was the same to all students in the class. Yet, differences were found regarding why the resources were used among participants in the study. For example, Ann and Mia read the archives to make sure they were not missing anything. Rose used the archives to understand more of the conversation as it was sometimes difficult to follow the conversation during the live chats. Dawn went to the archives in order to learn different perspectives from different people. Further, the strategies to use those available resources may be different, too. For example, in order to be able to better use peers as resources, Ann believed it was important to make a good presence to peers. Her strategy to build a good presence to peers was to actively participate in the chats and bulletin board discussion so that peers would think she was a hard worker.

In light of the findings from the reported research study, together with the theoretical perspectives related to resource-based learning (Hill & Hannafin, 2001), we suggest developing resource-based online learning that integrates resources, motivation, and strategy. We further suggest using a development research approach as it has been demonstrated to be effective in providing guidelines for design principles (van den Akker, 1999). Research adopting this type of methodology is needed to design effective resource-based online learning environment that can not only provide helpful resources, but also provide better ways for learners to be motivated to and effectively use those resources.

Becoming a Strategic Online Learner

Online learning is different from other types of learning in that the communication and resources take different forms from traditional classroom learning. In an online class, communication with instructor and peers mostly takes the written format. This written communication can be a challenge at times. It can be difficult to keep up with the flow of conversation in a live chat (Song, Singleton, Hill, & Koh, 2004). It can also easily cause misinterpretation of each other's postings (Petrides, 2002).

For learners to be successful in online learning, they need to become strategic in using online communication and resources. The strategies identified in the study related to unique online written communication include effective time management (frequently yet shortly each time) and clear wording to avoid misinterpretation. Online learning requires more time for the instructors (Palloff & Pratt, 1999), and can be rather time-demanding for students as well. Consistent with the findings in Petrides' (2002) study, participants in the study reported that written communication on bulletin board discussions might be misinterpreted. Similarly, participants expressed the importance of strategically managing their learning and using different kinds of resources in their online learning experience. Comparative studies of expert and novice online learners may be helpful in identifying how they differ in strategy use in online learning as well as understanding the characteristics of expert online learners.

Conclusion

Online learning continues to grow rapidly. The results of the study indicated that SRL skills can help learners overcome some challenges, such as resource use and motivation, in an online learning environment. At the same time, online learning requires more self-regulation skills from the learners, such as written communication strategies, motivation to participate in

online activities while they are not monitored, and effective use of learning resources despite the lack of face-to-face access to the instructor and peers. The need for understanding learners' SRL in online environments still exists. Research is needed to understand learners' SRL in online environments, to explore ways to improve learners' online self-regulated skills, and design online courses in a way that can facilitate learners' SRL.

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Table 2.1.Components of Self-Regulated Learning

	Component descriptions	Bandura (1986) & Zimmerman (1989)	Pintrich & De Groot (1990)	Pintrich (1995)	Zimmerman (2000)
Prior knowledge	The impact of prior knowledge on students' self-regulation				Self-generated feelings
Resource use	Students' efforts in identifying and using resources			Control of resources	
Strategy use	Students' effort in using strategies as well as the specific strategies that they use in their learning		Metacognitive and cognitive strategies	Control of various strategies	Self-generated thoughts
Motivation	The process that students engage in motivating themselves to take learning actions/ behaviors	Self-observation Self-judgment; Self-reaction;	Management and control of efforts	Control of motivational beliefs	Self-generated feelings and behaviors

Table 2.2. Sample Code List

Code	Description	Example
Prior experience	Prior experience with content or online learning	I had 6360 with her (the instructor), so I was familiar with WebCT format.
Questions	Seeking answers to questions	usually I would ask questions in class like in WebCT. Like if it is something that can wait until class, I would wait and ask her then in a chat. But if it is something urgent like something is due, I would freak out. First thing I would email her and then I post to the bb.
Bulletin Board Activities	Participants' perceptions of bulletin board discussion	I like discussion board because it helps me see hey, I am not the only person in this virtual world who has all these problems.
Motivation	Decide to take action in learning activities	I got there to stay up to date what other people are doing.
Resources	Anything learners used in learning	I have also contacted my old high school teachers that I liked and they liked me.

Table 2.3. Themes for Self-Regulation

Categories	Preliminary Themes
C1: Prior Knowledge	T1.1: Reduce level of anxiety T1.2: Become strategic learner T1.3: Become motivated due to lack of prior knowledge
C2: Resources	T2.1: Information resources T2.2: Human resources
C3: Learning Strategies	T3.1: Strategic planning T3.2: Mini Steps
C4: Motivation	T4.1: Seeking course-related information T4.2: Desire for knowledge T4.3: Monitoring self learning progress T4.4: Course requirement T4.5: Social interaction

Table 2.4. Self-Regulation Themes Triangulation

Participants	T1.1	T1.2	T1.3	T2.1	T2.2	T3.1	T3.2	T4.1	T4.2	T4.3	T4.4	T4.5
Ann	X	X		X	X	X	X	X	X	X	X	X
Mia	X			X	X	X		X	X	X	X	
Betty	X		X	X	X	X		X		X	X	X
Dawn	X	X		X	X	X	X	X	X	X	X	X
Rose	X		X	X	X	X	X	X	X	X		X
Tina	X	X		X	X	X	X	X	X		X	X

Table 2.5 Summary of Answers to SRL Research Questions

Question	Answer
How do learners' prior knowledge and experience influence their online learning experience?	• Reduce level of anxiety • Become strategic learner • Become motivated due to lack of prior knowledge
What kinds of resources do learners utilize to accomplish their learning goals and how do they use those resources?	• Information resources • Human resources
What strategies do learners employ in their online learning experience?	• Strategic planning • Mini Steps
What motivates learners to participate in online learning activities?	• Seeking course-related information • Desire for knowledge • Monitoring self learning progress • Course requirement • Social interaction

Figure 2.1. Abbreviated Interview Guide

Interview Protocol

Name: _____

Pseudonym: _____

Time: _____

Course: _____

Online Technology: _____

1. Think about your overall experience in this online course and tell me about how you managed your learning in the online environments…
2. What made you go to the bulletin board and chats?
3. How did you go about doing your assignments?
4. What are some of the challenges you experienced if there were any?
5. If you were to receive some support in your online learning, what would you like to have?

Figure 2.2. Data Analysis Procedure

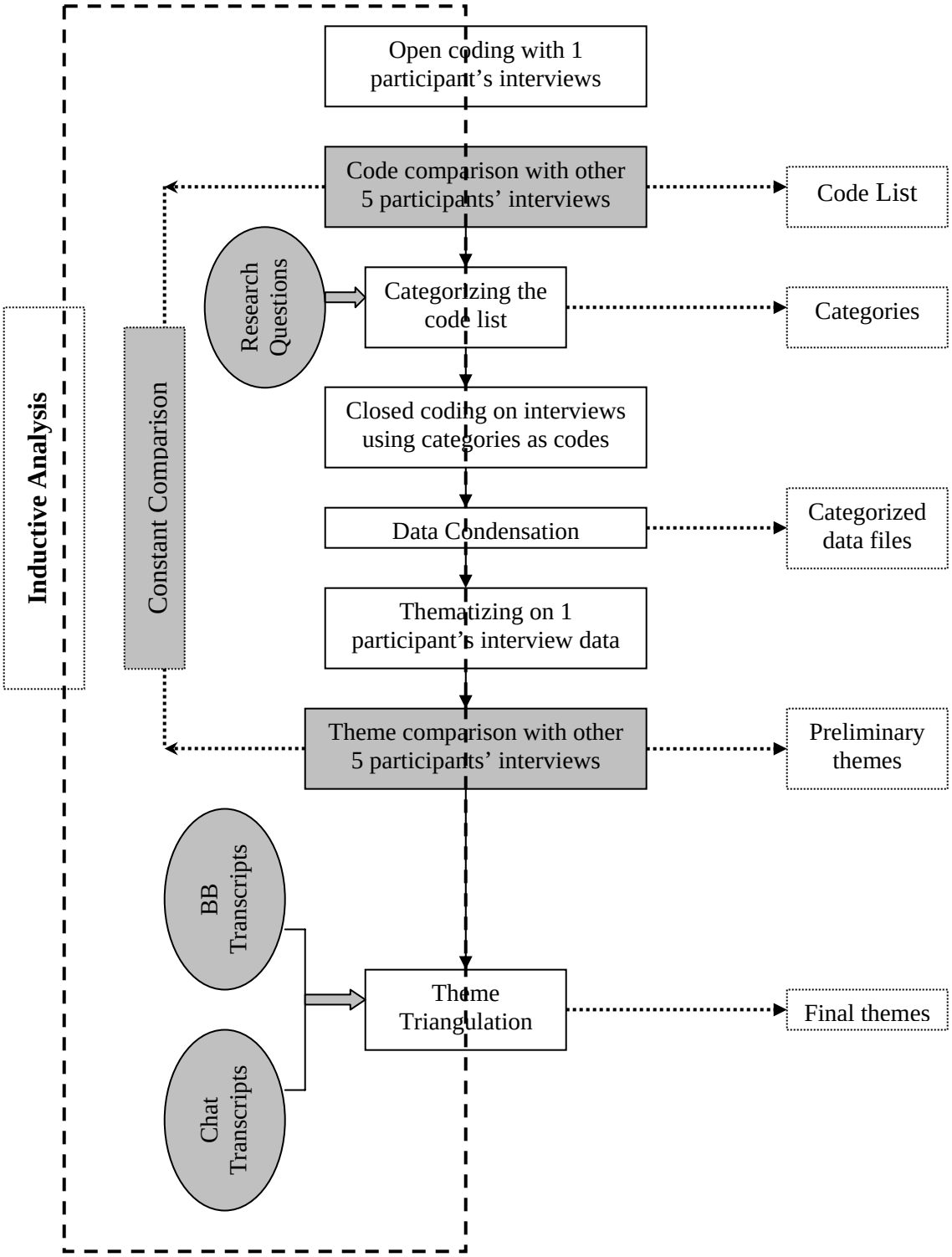

Figure 2.3. Sample Categorized Data

Motivation (Rose transcript 1):

- Practical: "I apply myself if I could. So that's why I participated all of them and have every intention to participate all of them."
- Helpful/information: "everyone is asking questions and giving input. Dr. Brown directs attention to the major issues and speaks those things and gives her viewpoints on those main issues. When the conversation is over and is archived and I can go back and study what it is that she means. It was as though in lecture instead of taking notes, there is verbatim for me to review. She has responded specifically to the issues that have come up of people's minds as they have read the materials. It is very often stuff I need to ask and stuff I didn't even know I needed to ask. So having a lot of people from different background asking different questions, I think that is beneficial. Then having Dr. Brown explain precisely of her point of view."
- Interaction: "Also I want to be able to interact. If someone had to say something, I don't want to go back to read the archives and read something someone had said. I have got a questions that is in my mind and now it is too late to ask it. Nobody can comment on it. That's why."
- Seeking answers: "Because I do have questions I need to ask."
- Not miss anything: "well I suppose in a sense that I don't feel obliged to look at all those, but I feel like I need to look at all the bb because I don't want to miss anything that could help me. You know, we have got some wonderful students in this class. People with really important things to say."

Motivation (Rose transcript 2):

- Different perspectives: "most definitely (the reason to go to the chats)."
- Instant feedback from instructor: "it is real time conversation with my professor. I get to ask a question and get an answer right away. So I can, depending on what she says and I can recouch what I say, you know in a real time aspect vs. email that it may take days to reply to. I like that aspect of it."
- Fun: "it is fun. It is a little room in the chat format. We are joking."
- Written communication makes more focused: "Having to type rather than speak does make you a little bit more focused. It costs you more. It is harder to type them than to speak them. So I think maybe we stay more focused for that reason."
- Professional goal: "I am motivated by my end desire to work in the field for the remaining years of my life."

CHAPTER 3

UNDERSTANDING LEARNER AUTONOMY IN ONLINE ENVIRONMENTS: A QUALITATIVE INVESTIGATION[1]

[1] Song, L. & Hill, J. R. To be submitted to *Journal of Computing in Higher Education*

Abstract

Learner autonomy is a critical component in learners' self-directed learning. How well a learner embraces learner autonomy is mirrored in their planning, monitoring, and evaluating processes. While learners may do well with learner autonomy processes in one learning context, they may find it challenging in a different context. The purpose of the paper is to report a qualitative case study investigating how learners engaged in processes related to learner autonomy in a graduate course that was delivered completely online via WebCT®. The results of the study indicated that adult learners were generally capable of managing their learning. Yet, peers and the instructor played important roles, particularly in the monitoring and evaluating processes. The results of the study indicate the importance of examining online self-directed learning experiences, designing collaborative online learning, and developing effective instructional support in an online course.

Introduction

Online learning provides opportunities to engage in formal and informal educational experiences. Research in the area of online learning continues to expand, exploring a variety of concepts and contexts (Hill, Wiley, Nelson, & Han, 2003). Topics that have received considerable attention include characteristics of online learning (e.g., Hara & Kling, 1999; Hill, Raven, & Han, 2002; Petrides, 2002; Vonderwell, 2003), effectiveness of online learning as compared to traditional classroom learning (e.g., Cifuentes & Hughey, 2003; Jonassen & Kwon, 2001; Koory, 2003; Neuhauser, 2002), and best practices from the learners' perspectives (Hiltz, Coppola, Rotter, Turoff, & Benbunan-Fich, 2000; Rovai, 2001; Song, Singleton, Hill & Koh, 2004; Tu & McIssac, 2002).

The studies to date have helped to increase our overall understanding of the context. What appears to be missing in the literature is a robust research base related to specific characteristics that enable success in online learning contexts. For example, in many online learning environments learners report liking the flexibility and convenience of online learning (Petrides, 2002; Song, Singleton, Hill, & Koh, 2004). However, research has also indicated a need for learners to take more responsibility to pace and shape their own learning in these flexible contexts (Chizmar & Walbert, 1999). How well a learner manages her/his learning in online environments has become an important area of research as more and more courses are being offered in higher education institutions (Hofmann, 2002).

The purpose of this paper is to report findings from a qualitative research study on how adult learners' engage in processes associated with learner autonomy in an online course. Learning autonomy in this paper is defined as learner taking responsibility for planning, monitoring, and evaluating their learning in a formal education setting. Learner autonomy, thus

defined, together with learner's self-regulation, is a major component of self-directed learning (Song & Hill, 2005). Planning includes the autonomous learning process of diagnosing learning goals (Knowles, 1975) and identifying learning needs (Moore, 1980). Monitoring learning process includes how a learner monitors cognitive and metacognitive learning processes (Garrison, 1997). Evaluating involves in how a learner evaluates learning outcomes (Knowles, 1975) and learning success (Moore, 1980).

We begin with a review of the literature related to learner autonomy and a review of the online learning literature. Next, we provide an overview of the study, followed by a presentation of findings. Specifically, the findings of the study are reported in three major areas: 1) how adult learners plan their learning in an online course; 2) how adult learners monitor their learning in an online course; and 3) how adult learners evaluate their learning in an online course. We end with a discussion of findings, as well as implications and suggestions for future research.

Perspectives on Learner Autonomy

Learner autonomy can mean different things to different people. When defined as the learner taking control of learning processes, learner autonomy is often identified as a major component of self-directed learning in the field of adult education (Moore, 1972/1986; Song & Hill, 2005). In the field of adult education, some scholars used a different phrase, "learner control," to refer to a similar construct (e.g., Cottingham, 1977; Moore, 1972). Some scholars have used these two constructs interchangeably. For example, Moore (1972) described the learner taking control in the planning, monitoring, and evaluating learning processes as "learner control" although the title of the article defining "learner control" used the phrase "learner autonomy." In a later publication about self-directed learning and distance education, Moore

(1986) used the phrase, "learner autonomy" to refer to learner taking control in the learning experience.

To further add to the complexity of the use of these two constructs, scholars in the field of instructional technology and/or computer-based instruction (CBI) also used the term “learner control” to refer to the learner making decisions on the path, flow, or events of instruction while engaged in a computer-based instruction experience (Williams, 1996). A plethora of research related to learner control was conducted in the late 1980s into the 1990s. Scholars working in this area were interested in exploring various issues related to learner control ranging from locus of control (Hannafin, 1984) to learner control research and definitions of learner control (Reeves, 1993) to learner control in general (Williams, 1996). For purposes of this paper, the phrase "learner autonomy" will be used to encompass the processes of planning, monitoring and evaluation to help reduce any confusion regarding terminology.

The following section presents a review of different perspectives on how learners take control of or making decisions on the learning process in two fields: Adult Education and Instructional Technology. Specifically, we reviewed three perspectives from the field of adult education and three perspectives from the field of instructional technology in relation to computer-based instruction.

Learner Autonomy in Adult Education

In the field of adult education, learner autonomy and learner control are often used interchangeably. Whether it is called learner autonomy or learner control, in general, it is considered as an important component in self-directed learning (Brockett, 1983b, Knowles, 1975, Song & Hill, 2005). The following section describes three perspectives (Moore, 1972; Cottingham, 1977; Garrison, 1992) on how learners take control in the learning process (see

Table 3.1). Detailed descriptions and explanations of each perspective are provided in the following sections.

Table 3.1

Moore's learner control perspective. Moore (1972) was a frontier scholar attempting to describe learner control in learning and instruction. In 1972, Moore proposed that learner control was manifested in three sets of events: establishment, executive, and evaluative events. Moore posed the following as areas of study: whether the learning is self-initiated and self-motivated; who determines the pace, the sequence and the methods of information gathering; and how the usefulness and quality of learning is judged. According to Moore, *establishment* is related to the learner's control in planning the pace, sequence, and method of learning. The *executive* event refers to a learner taking control in monitoring the enactment and implementation of their learning plans. The *evaluative* process involves learners evaluating the usefulness and quality of their learning outcomes. Moore also included learner control over the learning goals in his model, which is often evidenced in informal learning situations. Moore provided a general view on learner control in the planning, monitoring, and evaluating learning processes. Yet, the interaction between learner control and the specific learning context is not clear.

Cottingham's comprehensive model. Cottingham (1977) proposed a rather comprehensive model of learner control that has six parts: 1) learner-control of the instructional event; 2) learner-control of evaluation of achievement and progress; 3) learner clarification of goals in specifying behaviors and developing standards of performance; 4) learner-control of diagnosis of performance levels and problems; 5) learner-control of instructional design decisions; and 6) learner-control of motivation. According to Cottingham's model, the planning process includes learners specifying learning behaviors and diagnosing performance problems.

Monitoring involves learners taking control over their motivation and checking their learning progress. Evaluating is primarily concerned with making judgments on the learning outcome. Finally, goal setting refers to learners having control over the instructional design decisions as well as the specific learning events to be included in the instruction. Cottingham's model described the specific events that are involved in planning, monitoring, and evaluating processes, which help to provide a clear picture of what learner control is like. Yet, like Moore (1972), Cottingham did not provide a description of how a specific learning context may impact those learner control processes.

Garrison's Collaborative Control Perspective. Garrison (1992) defined learner control as a state when learners have both opportunity and ability to make decisions regarding the goal and management of this learning. Garrison believed that learner control consists of internal and external processes, and they are equally important in one's self-directed learning experience. Internal process refers to how a learner assumes responsibility for meaning construction in learning activities. External process refers to a learner sharing control of learning activities via communication with others in the learning environment. Garrison also stated that in terms of control of learning management in self-directed learning experience, learners are expected to be able to plan, monitor, and manage their learning. This is similar to many of the other learner control models and perspectives discussed in the adult learning literature.

Garrison's (1992) perspective on learner control added two ideas to the literature. First, he made a distinction in terms of where control resides, indicating that external control may be shared between the learner and the instructor, but internal control of meaning construction may be solely the purview of the learner. Second, Garrison highlighted an important aspect of learner control: collaborative control. Collaborative control indicates that the instructor and the learner

have a certain degree of control over the learning process. This perspective holds special value in formal educational settings where the instructor and learner are both actively involved in the learning process.

Summary. The three perspectives presented above, although using different constructs in their definitions, shared some common understandings in regard to the learner's autonomy in making decisions in regard to learning processes. As Table 3.1 illustrates, those learning processes can be categorized into three areas: planning, monitoring, and evaluating.[2] The three models provide a robust understanding of learner control from an adult education perspective.

Learner Control in Computer-Based Instruction

Learner control is an important construct in the field of instructional technology. In this context, learner control has been widely researched in connection with computer-based instruction (Reeves, 1993). Three perspectives on learner control in computer-based instruction are presented (Hannafin, 1984; Reeves, 1993; Williams, 1996). Detailed descriptions and explanations of each perspective are provided in the following sections.

Hannafin's (1984) locus of control perspective. In analyzing locus of control instructionally, Hannafin (1984) concluded that locus of control can be considered as "a continuum ranging from fully externally controlled to completely internally controlled" (p. 6). Hannafin further defined external locus of control as instruction where learners follow a predetermined path as established by the instructional designer. As for internal locus of control, it is often evidenced in lessons where learners have designer-designed options to make decisions on the path and pace of the lessons. In further analysis, Hannafin distinguished these two types

[2] A fourth area, goal setting, was also a part of the models. Given our interest in formal learning contexts, where the goal is often established for the learner, this area was not covered in the models.

of control into lesson control (external locus of control) and learner control (internal locus of control).

Reeves' (1993) complex learner control perspective. In critically reviewing and analyzing learner control studies with computer-based instruction, Reeves (1993) pointed out that one problem in this field was related to the definitions of learner control. It might seem to "mean something very clear and important, but it is so loosely defined in practice as to mean very little" (p. 40). According to Reeves, learner control is a very complex construct. One challenge in defining this construct pointed out by Reeves is "what the learner is controlling" (p. 40). Reeves further explained that, in some cases, the "what" could be the rate or order of screen presentations, but in other cases, it might be learners authoring their own CBI.

Williams' (1996) learner control of instruction perspective. In a more recent publication, Williams (1996) updated the literature base on learner control. Williams used learner control to refer to the control that learners have over instruction. In synthesizing the literature, Williams concluded that learner-controlled instruction referred to "those instructional designs where learners make their own decisions regarding some aspect of the 'path,' 'flow,' or 'event' of instruction" (p. 957). According to Williams, most instructional designs consisted of a combination of learner-controlled and instructor-designed events.

Summary. The three perspectives on learner control in computer-based instruction shared some similarities. They all defined learner control in relation to computer-based instruction. The primary focus of each perspective is learner control over instructional events, and the instructional designer or developer often programs those events in the CBI. The perspectives also have unique features. Hannafin (1984) distinguished learner control from lesson control, and considered these two types of control as two extremes of the continuum of locus of control in

CBI. Reeves (1993) viewed learner control as a complex concept where details regarding "what" is to be controlled by the learner are an important issue. Finally, Williams (1996) viewed learner control in a rather general perspective where he defined it as learners' choices on the path, flow, or events of instruction.

Learner Autonomy vs. Learner Control: Selecting a Construct

CBI, whether the locus of control resides externally or internally, seems to be a rather closed learning environment. Unlike in open-ended learning environments that can support learner autonomy in choosing what to learn as well as how to learn (Hannafin, Hall, Land, & Hill, 1994; Land & Hannafin, 1996), the instructional events in CBI that learners experience are often pre-programmed. The "how to learn" is often programmed as options rather than decided autonomously by learners.

Learner control, from Reeves' (1993) perspective (i.e., based on "what" is to be controlled), can be a rather broad concept, such as including learner's control over the planning, monitoring, and evaluating processes. However, given that the learner control construct has been rooted in the literature of computer-based instruction in the instructional technology field, we decided to use an alternative construct: learner autonomy.

According to *Webster's Third New International Dictionary* (Gove, 1986), "autonomy" means "the quality or state of being independent, free and self-directing" (p. 148). This definition is aligned with our understanding of learner's involvement in the learning processes where learners take initiative in planning, monitoring, and evaluating their learning. It is also aligned with Moore's (1986) definition of learner autonomy. Therefore, we decided to use the construct "learner autonomy" for purposes of this study.

With online learning contexts, learners are often provided with the convenience of when and where to study (Poole, 2000), the flexibility to pace their own study (Chizmar & Walbert, 1999; Felix, 2001), and the ability to make decisions on the resources and strategies they want to utilize to accomplish their learning. The following section reviews the literature on online learning with a special focus on the online learning characteristics that are related to learner autonomy in planning, monitoring, and evaluating their learning experience.

Learner Autonomy in Online Environments

Online learning in general, with its unique characteristics, requires learners to take more control over their learning (Garrison, 2003). For example, in synchronous online learning, learners decide where they participate in online activities. In asynchronous online environments, learners decide when and where to participate in course activities (Palloff & Pratt, 2001). The following section reviews the unique characteristics of online learning, synchronous and asynchronous. For purposes of this paper, we focused on those characteristics that are most relevant to learner autonomy: online communication and interaction, and online social presence. The following sections provide detailed information on how these characteristics impact the level of learner autonomy that learners need to have in an online learning environment.

Online Communication and Interaction

Interaction is central to both teachers and students' expectations in education (Berge, 2002). Online interaction is multi-dimensional, consisting of learner-content interaction, learner-interface interaction, learner-learner interaction, and learner-instructor interaction (Hillman & Gunawardena, 1994). Some research has indicated that online interaction has an impact on students' learning in online courses (Hill, Raven, & Han, 2002). Yet, challenges remain in forming effective online communication and interaction. For example, due to the anytime and

anywhere characteristic of asynchronous online learning, students have a perception of being isolated, reporting a lack of immediate feedback and response from the instructor and peer students as key contributors to the isolation (Hara & Kling, 1999). This perception of isolation may hinder the development of effective interaction between the learner and the instructor, and among peers.

Students' communication and interactions in an online class are different from that experienced in a traditional face-to-face classroom. Online communication often requires students to be more active, taking more control and responsibilities in keeping connected with the instructor as well as fellow students (Elvers, Polzella, & Graetz, 2003). In contrast, in a face-to-face classroom, the physical presence of everybody in the class is available for anybody to interact with anybody else. Usually, when you talk to a person face-to-face, you will get a response. Further, when you pose a question in a class, it is unlikely that your question will go by without a response while in an online environment, learners often do not feel as obligated to respond to questions posed in online postings (Vonderwell, 2003).

In an online context, especially in asynchronous online learning, getting a timely response from others may be rather challenging due to the unique time-independent characteristic of asynchronous communication (Hara & Kling, 1999; Vonderwell, 2003). Even in synchronous online learning where learners do have access to the instructor in a live chat, getting an immediate response may be challenging as the flow of conversation in a live chat is multi-directional, and by the time you get a response, your thoughts could be onto something else (Song, Singleton, Hill, & Koh, 2004). Therefore, to have effective interactions with the instructor and peers in an online course, learners need to strategically plan their question-and-

response process so that they can get timely feedback. They also need to take initiative in following up if a response is not received so as to get the information s/he needs or desires.

Online Social Presence

Social presence refers to "the degree of awareness of another person in an interaction and the consequent appreciation of the interpersonal relationship" (Tu & McIsaac, 2002). The two dimensions related to social presence are intimacy and immediacy (Gunawardena & Zittle, 1997). Intimacy refers to the physical distance that includes non-verbal factors such as body language and smiling (Gunawardena & Zittle, 1997). Immediacy refers to the psychological difference that is associated with both verbal and non-verbal cues such as gestures, humor and personal examples (Hackman & Walker, 1990).

Online social presence is a critical component in online learning environments (Tu & McIsaac, 2002). However, creating social presence online is rather challenging, and it requires learners to take initiative. Unlike in a face-to-face classroom where everybody's presence is made available by design, in an online class, especially in the ones that are completely online, learners need to take responsibility for creating a social presence.

Research has indicated a few ways for instructors to assist with building an online social presence. For example, Aragon (2003) summarized the following strategies to help online instructors with creating online social presence: develop welcome messages; incorporate audio; contribute to discussion board; promptly answer email; provide frequent feedback; share personal stories and experiences; use humor and emoticons; and address students by name. While some of the strategies may apply to learners, such as sharing personal experience and contribute to discussions, little research has been conducted in regard to how learners take control in building their social presence online.

Summary

Learner autonomy is evidenced in learner's planning, monitoring, and evaluating processes in a specific learning context (Song & Hill, 2005). The amount of learner autonomy varies in different learning contexts. Research has indicated that an online learning context requires the learners to become more autonomous in their learning processes (Chizmar & Walbert, 1999; Felix, 2001). Online learners need to actively and strategically establish a collegial relationship with peers as well with the instructor primarily by way of written communication due to the lack of face-to-face component.

Some research has examined ways to improve online communication, to establish social presence, and to build online learning community. Yet, we find little research investigating how the unique characteristics of online learning impacts the way learners become autonomous in their learning. Further, different types of online learning may present different opportunities and challenges for learners to plan, monitor, and evaluate their learning.

Research Methodology

The purpose of the study was to examine the learner autonomy phenomenon in an online learning context. The reported study adopted qualitative methodologies in order to obtain a rich and holistic account of participants' experience (Merriam, 1998). Specifically, we investigated adult learners' reaction to learner autonomy as it is embodied in the planning, monitoring, and evaluating experience in an online course (Denzin, 1989). We examined the experience of several participants to develop a general view on the phenomenon of learner autonomy in online environment (Merriam, 1998).

Research Questions

One primary research question was posed for the study: How do adult learners engage in processes related to learner autonomy in an online course? Three sub-questions were generated: 1) How do adult learners plan their learning in an online course? 2) How do adult learners monitor their learning in an online course? And 3) how do adult learners evaluate their learning in an online course?

Research Context

The research context was situated in a graduate school library media program in a large university in the south. The program admits about 25 students as a cohort each year that will complete the coursework on primarily the same order and schedule. The specific course, where the research took place, was a required course, *Information Technology*, taken in the first or second semester of study by school library media program students. The course was delivered using the course management system, WebCT®. The specific context was selected for the research based on the following criteria: 1) It is an online course offered to adult learners (college level and/or above); 2) Learners are expected to take a certain amount of control in planning, monitoring, and evaluating their learning experience; and 3) Communication occurs primarily online.

The purpose of the course was to help students understand the theory and skills that are related to preparing a technology plan that can enhance teaching and learning in community and schools.[3] Students in the course were expected to demonstrate the ability to assess community and school information needs and apply information technology in a way that can meet teaching

[3] The full syllabus is available in Appendix A

and learning needs[4]. The WebCT® course management system was employed for the students and instructor to communicate with each other via bulletin board discussion and live chats.

In this online course, the primary communication between students and the instructor or amongst students occurred via bulletin board and live chats. The instructor stated clearly in the online course syllabus that she strongly encouraged the students to participate in bulletin board discussions though they were not necessarily required. One main requirement of the course was that students posted their assignments to the bulletin board, which was accessible to everybody in the course. As for the chats, there were two live chats each week. Students were required to go to one of those chats, but had the option to go to both of them if they so desired. The live chat transcripts were made available on the course WebCT site.

Participants

The participants in the study were eight female Caucasians ranging in age from early 20s to mid 50s. The sample provides a representation of the majority of the students in the class. The occupations and careers of the participants varied, ranging from stay-at-home moms to continuing students recently completing undergraduate study and to K-12 schoolteachers seeking a career change. Among the six participants who were purposefully selected for final in-depth analysis (Patton, 1990), Dawn and Rose were stay-at-home moms, Ann and Mia were recent college graduates, and Betty and Tina were school teachers. Ann and Dawn had taken a similar online course before, and the other four participants were first-timers in online learning.

Data Collection

A variety of data collection methods were employed in the study. Eight participants were interviewed three times each. A total of twenty-four interviews served as the primary data for the

[4] See Appendix B for course requirements and Appendix C for course calendar

study. Other types of data include transcripts of online bulletin board discussions and live chat room discussions. The data collection took place throughout the Fall semester, 2004.[5]

Interviews. Three interviews were conducted face-to-face with each participant. The interviews took place throughout the semester: one in the beginning of the semester, one during the mid-semester, and the other one at the end of the semester. The interviews were semi-structured. Research questions were used as guides for the interviews, yet additional questions were explored during the interviewing process to capture participants' overall learning experience in the online course (see Figure 3.1 for a sample of the interview guide).[6]

Figure 3.1

Two researchers conducted the interviews for the research study. The first author of the paper conducted all the first and second rounds of the interviews. In the third round interviews that took place after the course was completed, the first author conducted five interviews and a second researcher conducted the other three interviews. The second researcher has considerable experience doing interviews and has a certificate in Qualitative Research Methods. The authors of this paper considered her expertise sufficient to conduct the interviews in a reliable and effective manner. Among the twenty-four interviews included in the final in-depth data analysis, the first author conducted eighteen.

Bulletin Board Discussions and Chats. Transcripts of bulletin board discussions and the live chats were collected as supplementary data for the research study. The instructor of the online course assigned the students in the class into groups based on their last name in an alphabetical order. Each group had four to five students. Students were only required to participate in bulletin board discussions within their group. Several other forums were set up

[5] See Appendix D for the timeline.
[6] The full interview protocol is located in Appendix E.

that pertained to the whole class, such as “main” and “help.” Transcripts of within group discussions as well as whole class discussions were collected. Nineteen live chats took place in the semester and the transcripts of all chat sessions were collected. The main purpose of the transcript data was to triangulate the data from the interviews as well as findings resulting from the interview data analysis (Silverman, 2001). The transcripts were used to validate as well as to question the results of the study.

Data Analysis

Data analysis took place as data became available. Six participants were selected for in-depth analysis using a purposeful sampling method (Patton, 1990). In this study, the richness of the data from the interviews was of primary importance. The interview data from two participants did not provide rich data related to their experience; rather, these two participants often provided simple “yes”, “no”, or “that’s it” types of answers during the interview sessions. Therefore, these two participants were dropped in the final in-depth data analysis process.

Inductive analysis and constant comparison analysis methods were utilized in the data analysis process. We closely examined the interview data inductively to generate a code list (Coffey & Atkinson, 1996), which finally led to a conceptual understanding of participants’ lived experience (Charmaz, 2002). We used constant comparison analysis to analyze different perspectives on central issues (Patton, 1990).

Detailed data analysis took place in the following phases: open coding, code comparison, categorizing, closed coding, data condensation, thematizing, theme comparison, and theme triangulation. Table 3.2 summarizes the data analysis process. Detailed descriptions of each phase are provided in the following sections.

Table 3.2

Open coding. Open coding was conducted on one participant's three interview transcripts[7], as no prior assumptions on what might be uncovered were made in the research design (Glaser & Strauss, 1967). The codes identified in the open coding process were kept in a list with a code name, definition, and representative quotes, serving as preliminary codes.

Code Comparison. The next step following open coding was code comparison using the constant comparison method (Patton, 1990). This involved comparing the preliminary codes on the other five participant's interview transcripts to identify reoccurring codes and new codes (Goetz & LeCompte, 1981). As a result, a code list was generated (see Figure 3.2 for a sample code list).[8]

Categorizing. Once the code list was formed, the next step was categorizing. Due to the qualitative nature of the interview data, the data related to a specific research question were distributed as opposed to be bundled together. We used the research questions to organize the data into categories (Coffey & Atkinson, 1996). Specifically, we used planning, monitoring, and evaluating as categories to organize the code list[9].

Closed coding and data condensation. To help organize the data into a format that can facilitate the theme generating process, we applied the categories back to all the interview data. We call this process "closed coding" in contrast to open coding because we have pre-decided codes in this round of coding, which were the categories developed in the previous phase. Upon completion of closed coding, we extracted data related to each category out of the interview

[7] See Appendix L for a sample coded interview
[8] See Appendix J for a complete code list.
[9] See Appendix M for categories

transcripts and saved them as separate files[10]. In so doing, the data were condensed (Coffey & Atkinson, 1996).

Thematizing. Once data were condensed and organized, we began generating themes from the interview data. We looked for both regularities in patterns and themes and contrasts and irregularities (Delamont, 1992). First, we examined one participant's interview data and generated initial themes. Next, we used constant comparison method (Patton, 1990) to compare the initial themes to the other five participant's interview data. As a result, preliminary themes were identified amongst all the participants' interview data. Finally, we applied the preliminary themes from the interview data to the bulletin board transcripts and chat transcripts to validate the themes. The criterion for a final theme in the study was its occurrence in at least half of the participants in the study across interviews, bulletin board transcripts and chat transcripts). (see Table 3.3 for overall themes and Table 3.4 for theme triangulation).

Table 3.3

Table 3.4

Triangulation. We employed triangulation techniques to strengthen the reliability and validity of the themes generated from the interview data. Silverman (2001) described triangulation as "the attempt to get a 'true' fix on a situation by combining different ways of looking at it or different findings" (p.177). We accomplished triangulation by using multiple cases, different types of data, and the same type of data at different time periods. We used six cases in the study to help enhance the external validity of the findings (Merriam, 1998). To achieve internal validity, we used different data sources from the same participants: interview data, chat room data, and bulletin board data. To strengthen the reliability of the data, we

[10] See Appendix N for sample categorized data

collected interview data at different time periods during the semester when the research was being conducted.

Findings

The findings of the study were organized around the three research questions: 1) how did learners plan their online learning? 2) how did learners monitor their online learning? and 3) how did learners evaluate their online learning? Findings related to learner autonomy, in general, were also generated. Patterns and themes as well as supporting data are presented in the following sections. Finally, findings related to participants' perception of learner autonomy in general are presented with supporting data.

How Did Learners Plan Their Online Learning?

Participants generally perceived it challenging to plan in an online course due to the lack of face-to-face monitoring from the instructor and the fact that there was no required physical presence in an online "classroom" (i.e., bulletin board discussions and chats). To plan for their online learning, participants used a variety of resources and strategies. The strategies included self-initiative, self-discipline, and instructional support from the instructor (see Table 3.5).

Table 3.5

Self-initiative. Self-initiative refers to the learner being proactive in finding resources related to the online course. This includes talking to the instructor prior to taking the class, understanding course expectations by self-exploring course websites, course syllabus, talking to other students about the course, and regularly checking the WebCT discussions for updates. All participants (n=6) reported use of self-initiative in planning their learning in the online course. For example, Dawn described her self-initiative in finding resources: "I set up bookmarks to different websites they recommended and to the different assignments. I do a lot of prep work so

I can walk in organized." Mia said that she checked the bulletin board discussion everyday because "there could be easily 20 posted each day." Tina said in the interviews that she actually met with the instructor prior to class and asked her about the course requirements and expectations. She even bought and read the textbook before the semester started. Similarly, Ann borrowed the textbook and read it before the class started. Betty, realizing that it was "new experience" for her to go back to school after many years, was "very active in looking online to see what other classes did" so that she could "get a feel."

Bulletin board discussion transcripts indicated similar findings in regard to self-initiative. Participants showed their self-initiative in seeking answers on the bulletin board. For example, Rose posted a question about curriculum mapping, "Does anyone know of a school that DOES use curriculum mapping, in the way we are talking about (actual teaching)?"

Self-initiative appeared to be an important element for successful learning in the online course, as the resources for learning were distributed and it required learners to explore and extract them primarily on their own. Participants in the study showed their ability to proactively plan their learning in the online course by actively seeking help from or using various resources, such as the instructor, peers, and resources from others.

Self-discipline. Self-discipline is the ability to control one's behaviors without the help of others. Self-discipline was perceived to be challenging but important in planning online learning. Three participants (Betty, Mia, and Rose) reported use of self-discipline in planning their online learning and enacting their plans in the online course. As stated by Mia,

> you don't feel the same as in the f2f class. .. like the Monday class from 5-7:45 and I go every Monday night. There is never a question as whether or not I am going. … I think it is harder when there is less structure than there is. You don't feel like, oh, I don't have to

> be here at certain time. … it doesn't mean that I am not getting up go to eat go to the bathroom whatever. … it is harder to treat equally to your other responsibilities.

Another way to control one's behaviors without others' help is intrinsic motivation. Betty was able to plan out the whole semester's activities and implement the plans because she was intrinsically motivated. As Betty said in one of the interviews, "when it comes to learning, I am very motivated and very self-motivated." Rose was aware of her weakness in the class, such as technology incompetence; therefore, she disciplined herself to apply in the course. As she said in an interview,

> I have been aware from the beginning that I would really have to apply myself in order to have any chance of success because I have so much to work. I am so technology incompetent and I really have to work to compensate that. Doing what I could do. So if I could be there, it is very necessary that I show up. I apply myself if I could. So that's why I participated all of them and have every intention to participate all of them.

Tina and Dawn are very self-disciplined people to begin with; therefore, they did not state specifically it was a factor impacting their planning experience because it is part of their personality. As for Ann, unlike Mia who needed to make herself go to the online class, Ann seemed to enjoy the WebCT discussion, therefore, she did not specify self-discipline as a part of her planning efforts. For example, she said in an interview, "I enjoyed the discussion board on WebCT. See what other people are reading and also what's going on in their schools."

Planning online learning requires self-discipline. So does enacting the plans in actual learning in the online course. Participants in the study, as adult learners, were generally capable of self-discipline based on their self-knowledge of their weaknesses (e.g., Rose). Yet the level

of self-discipline may differ. For some people, self-discipline is a built-in characteristic of their personality, such as Dawn. Yet, for others, it requires extra effort to do so, such as Mia.

Instructional Resources. Instructional resources refer to the course materials and/or instructional strategies designed and developed by the instructor. In this online course, all participants (n=6) indicated the "advanced organizer" was a very helpful resource for planning their course time. The Advanced Organizer was a file the instructor linked to the course WebCT that mapped out by week when something was due. It provided a time frame for the students to pace their learning. For example, when describing the usefulness of the "advanced organizer," Mia stated, "[it says] from this time to this time, what we will be doing. I used that (advanced organizer) to organize my calendar so that when I look at my calendar I can see where things are." Betty used the "advanced organizer" to pace her study, too, as she stated, "[t]hat was very good to help me pace myself. And then kind of look ahead to see what is expected and kind of get going."

To plan their learning in the online course, participants, in general, relied mostly on themselves, such as obtaining and utilizing various learning resources. Some participants did indicate that they found the resources from the instructor helpful as well (e.g., the advanced organizer). Yet, to enact the plans required self-discipline as reported by some participants. While self-discipline may come easy for some people, it can be rather challenging to others.

How Did Learners Monitor Their Learning?

Participants monitored their learning progress to make sure they stayed on track with the class. To monitor if they were on the right track, participants indicated the use of the following resources/strategies: 1) self-monitoring; 2) peer-monitoring; and 3) instructor's support (see Table 3.6).

Table 3.6

Self-monitoring. As adult learners, participants generally showed their ability to monitor their learning progress so that they could stay on track with the class. All participants (n=6) indicated their awareness of the self-learning progress. For some, it appears that the self-monitoring was more implicit. As Betty stated, "I knew I was on the right track." Similarly, when asked about her perceptions on her work in the online class, Mia said, "I felt pretty good." Some participants showed their awareness of self knowledge and learning situation, which they used as an instrument in monitoring their learning. For example, Dawn said in an interview, "I think we have so much to read. Trying to read somebody else's assignments is not on the top of my to do list," which showed her awareness of both class situation (so much to read) and her own priorities (not to read everybody's assignments)." Later, Dawn added, "I am coming into from basically new and there is so much to learn because I haven't been there teaching. There is a lot of basis I don't have to pull from." Rose showed similar experience with Dawn where she was also aware of her situation, as she said in an interview, "because I have not by education a teacher. That was a gap, a blank spot in my information about teaching methodologies." Still other learners took external initiatives in checking their progress, Ann said, "I would read the archive. Just to make sure I am not missing anything, any big announcement or things like that."

Self-monitoring in an online course can be challenging. Tina provided insight into this stating: "the hard thing is to look ahead. Wow, I have got a paper due on Thursday. No one is there saying, hey, you have got a paper due Thursday. You need to pay attention and be self-disciplined. I have had a web class and independent studies, so I am kind of used to pacing myself. So that helped."

Peer-monitoring. While participants were able to monitor their online learning alone, they did refer to other students. Peers were used for checkpoints on their learning as well as what was going on in the class. Four participants stated in the interviews that they had referred to peers to check their learning progress. For example, Mia referred to peers' work as a checkpoint for whether she was on track with others on the coursework, as she said, "I want to see what other people have posted about. See, ok, that's what they do with the question. It helped me write mine." However, referring to other people's work does not necessarily mean to follow others' direction. For Mia, she looked at other people's work because she wanted to "make sure" she was "on track." She considered what she was doing, but not necessarily changed what she had done.

Ann also used peers as checkpoints for whether she was on track with others. Ann often achieved this peer monitoring by visiting bulletin board discussions, as she said in an interview, "I got there to stay up to date what other people are doing. It kind of gives me a checkpoint. This is where other people are and this is a point where I need to be." In an interview, Dawn indicated she considered peers as great resources to make sure she was getting multiple perspectives on certain topics,

> I have received so much information from those people who already in the field giving me new insights of things from new perspectives that I have not yet been able to come around that way. It is a lot of a-ha's. Oh, that is how they... that is another way to look at it. That is another way to handle it. I feel real good about it.

Betty was heavily dependent on the instructor's feedback on her learning. Therefore, as long as she felt that she was following the syllabus and the course requirement and getting good grades on her assignment, she would feel on track in the class. Therefore, peer-monitoring did

not seem to be a factor in her monitoring process. Tina was teaching critical thinking skills in her school and she was able to make judgment on her work by herself and was able to criticize her own work. She did refer to instructor's feedback and course syllabus as a reference in addition to her own judgment, but she did not state in the interviews that peers played a big role in her monitoring process.

Instructor's support. As for the instructor's support that participants used in monitoring their learning progress, it primarily referred to the "advanced organizer." The "advanced organizer" listed class activities as well as assignments in a timely manner so that students in the class, when referring to it, could see clearly what was due and when.

All the participants in the study indicated the use of the advanced organizer in checking their learning progress in the class. For example, when describing how she used the "advanced organizer" to monitor her learning progress, Tina stated, "knowing about the directives (advanced organizer), which is kind of pacing by itself. It is broken down by weeks." Mia found that advanced organizers helped her monitor her progress in doing the curriculum mapping assignment. She stated in an interview,

> I used that (advanced organizer) to organize my calendar so that when I look at my calendar I can see where things are. As far as the curriculum map, we have four weeks to do it, but I started to think like I need to have my interviews this week and I need to have that this week. I kind of break things down to do it.

Betty described how the advanced organizer helped her to see a whole picture of the class in an interview,

> it is a section on the WebCT. That is what it is called, advance organizer. You click on that. She kind of fleshed out the week when something is due. She would have a time

frame. Even from the agenda and the syllabus, I couldn't see the whole picture. The advance organizer helped a lot.

While different participants used the advanced organizer in different ways, they all found it helpful in monitoring their learning progress in the online class.

How Did Learners Evaluate Their Learning?

When evaluating their own learning in the online course, participants mainly used the following resources: self, peers, and the instructor. Participants showed their capability of self-evaluating their learning, and indicated the use of others, peers and the instructor, in evaluating their work and learning progress in the online course (see Table 3.7).

Table 3.7

Self-evaluating. As adult learners, participants were often aware of how well they were doing and whether they were making progress. All participants(n=6) reported that they took part in evaluating their work (assignments and learning) in the online course. For example, when comparing her first trimester of the online course in her second interview, which was conducted in the mid-semester, Betty happily said that she was doing better and shared her successful learning experience with others in the chats. Tina indicated that she had her own opinion about her work, as she said, "I take pride in my writing and I try to be analytical." Moreover, Tina showed her ability to evaluate the resources she identified, as she stated in an interview, "You get to see. I look at the source of the publication. If it is with educational leadership. You kind of look and see if it is biased. Use your critical thinking skills. I like Galileo a lot better than the Internet because I am more familiar with the resources. That's something I teach my kids. Just because it is something from Internet, doesn't mean it is correct."

Not only did participants show their ability to self-evaluate their learning, but also their confidence in doing this increased as the semester progressed. For example, in the beginning of the semester (during the first interview), Rose was rather uncomfortable evaluating her own learning, as she said,

> as far as self-assessing, I feel like I am in the dark at this point. Because I am not an educator. Once she (instructor) said in-depth. I thought, well how much does this mean if I were in school. Is this going to be superficial? I feel like I am not a good judge of the quality of my work.

However, in the second interview (around mid-term of the semester), Rose expressed that she was rather opinionated and knew what she was doing, as she said, "there is a correct answer because constructivism is certain kind of thing. But our opinions are also requested. So we are asked to higher order thinking things. Ask us to apply to what we experience in a school, which brings our subjectivity. Yes, I feel opinionated." Rose's perception change indicated her growth in the ability to self-evaluate her learning.

Peer-evaluating. The fact that the peers' assignments were posted on WebCT and were accessible to everybody provided an option for learners to compare their work with others' work. Participants were also aware of the existence of expertise/experience among peer students, which many of them found to be a great resource for understanding the quality of their work. They respected people who had working experience in their field (school library media) and referred to them as experts. Five out of six participants reported use of peers to evaluate their work in the online course. As Betty said,

> We have got probably 3 people that are actually in the field now. They are actually media specialists. I think that kind of gave a different flavor. I think most of us look up

> to them because they are doing it right now, and I am not. I think that resource is very helpful. Very practical.

Other participants echoed Betty's view on expertise among peers, and they all indicated the use of peers' work and comments in evaluating their own work. For example, Rose reported that she "really needed the chat to understand the topic," and she went there and she was "gratified" when she got "responses from others because it is the voice of the experience." Rose respected the views and comments from others because she believed that "If I ask a question, people aren't going to try to answer questions if they don't know answers to. So the responses I get are people who give good answers."

Evidence from the bulletin board discussions also indicated that participants not only respected peers' comments, but responded to them as well. Here is a posting by Mia on the bulletin board, and it says,

> Thank you Dawn! It is so true that we remember facts and knowledge that actually pertain to our life experiences. If we know this as adults, it should be easy for us to realize that students need those personal connections in the classroom. Also, I had never really considered that a worksheet or assignment with specific directions and preconceived correct answers limits learning possibilities, but I now understand how it does.

The posting indicated that Mia not only agreed with Dawn's view on the subject, but also was also able to use Dawn's perspective to understand the topic.

The one participant who did not report use of peers in evaluating her work was Betty. Betty was heavily dependent on the instructor's feedback on her assignments. Therefore, her evaluation of her learning primarily depends on the instructor's feedback. Due to the positive

feedback she got from the instructor, she became confident about her work in the second half of the semester, thus being able to make some judgment on her own work. However, she did not state that she referred to peers' comments to evaluate her own work.

Instructor-evaluating. While most participants did show the ability to evaluate their learning to some extent and they could use peers' comments and work to help evaluate their learning, they primarily considered the instructor's feedback as the most authoritative, and something that mattered a great deal to them. All participants (n=6) indicated that they relied on the instructor to evaluate their work in the online course. As Ann said, "it is very important to me what professors think of my work because they have been through all those professional experiences and their knowledge on the subject is so great." Rose considered that the instructor had the final say of their work, as she said, "but she is always the last word. I do feel she is always the last word… regarding questions about assignments. She keeps her voice of authority, too, about things that are, not just assignments. But she is the voice of authority about the ideas also."

In Betty's case, the instructor's feedback was so authoritative to her that her confidence in her work was responsive to the grades she got on her assignments. Betty described her experience with the first three assignments in the second interview,

> The first one I made 8 out of 10. The second one I made 3 out of 5. See those are due the same time so I had no feedback to see what I did wrong. But after the feedback, then I got 10 out of 10. So I think I know what she wants.

After receiving the feedback from the instructor for her third assignment, Betty "felt much better" in the class and thought she had finally "figured out what the problem was." She also showed her feelings about this in one of her postings on the bulletin board when she responded

to another student, “Thanks for the positive feedback. I was discouraged with the first two assignments but I felt that I finally pulled it all together and got on track.”

The instructor’s feedback played an important role in how participants evaluated their work and learning progress in the online course. Participants saw the instructor as the subject matter expert and relied on her to judge the quality of their work.

Learner Autonomy in General

When asked about their perceptions on learner autonomy in the learning processes in general, participants seemed to appreciate it. For example, Ann talked about the freedom to choose resources, “I wanted to see different views as opposed to being given three articles by a professor, which maybe their take on it. It was nice to be able to see a lot of views and kind of pick what I thought personally fit in that view.” In fact, to some participants, online learning was very self-directed and learners had a great amount of learner control, as Mia said, “you teach basically yourself in online course.”

While learner autonomy was appreciated, participants expressed their need for support and structure from the instructor. Some participants indicated uncertainty of what they had learned and whether they had learned enough, and they thought some structure and support from the instructor would be helpful. For example, Mia said, “I feel like I have learned at least some, but I also feel that I haven’t got enough comments and instructions that make me feel I am really sure I have done right or wrong.” “I am not sure if we have taught ourselves how to do it right.” The hard thing for Mia was:

> to know how much you need to know. … how much researching you need to do to do the assignment. She (instructor) said you need to find enough to understand the concept.

But again, it is hard to know how much you need to know." "Am I reading enough to learn?

Some participants also reported that the autonomy for learning they had made them put more efforts in learning and actually helped them improve their understanding of the content. For example, Mia said, "I may take more from it because I have got to do the learning on my own." Similarly, Rose stated, "having to dig into it more, of course, then you appreciate the depth of the subject more." Mia and Rose's experiences indicated that learner autonomy helped motivate them to learn (put more efforts) and accomplish learning success (improve their understanding of the content).

Discussion

The results of the study provided insights for understanding how learners engaged in the processes associated with learner autonomy in an online course. Overall, participants indicated using a variety of strategies to assist with planning, monitoring and evaluating their learning. Table 3.8 provides a summary of the responses to the research questions.

Table 3.8

A pattern was identified across the three processes, indicating that participants primarily used three resources in planning their study, monitoring their learning progress, and evaluating their learning outcome. These three resources were: self, peers, and the instructor. The results of the study were consistent with the general understanding of adult learners who are capable of self-directing their learning (Knowles, 1975), which put the learner at the center of their learning experiences. Yet, the results of the study also indicated that learners do rely on others (peers and the instructor) to plan, monitor, and evaluate their learning. Each of the three areas is discussed in the following sections.

Self

Consistent with the general assumption about adult learners -- that they tend to be self-directed (Knowles, 1975) -- participants in the study demonstrated their ability to self-plan, self-monitor, and self-evaluate their learning in the course. They were proactive in exploring and utilizing various resources on their own to fulfill their learning in the course. Self-initiative was particularly obvious in the planning process, and in fact, they were the primary resources in their planning activity. Yet for monitoring and evaluating, the roles of peers and the instructor were just as important.

Planning. Planning took place mostly in the beginning of the online course. It involved in understanding the course expectations, mapping out course activities, and becoming aware of the course assignments due dates. Participants explored various resources such as course syllabus and course calendar to plan their study in the course. One participant (Tina) had bought the textbook and read it before the semester began. Two participants (Mia and Rose) even made the effort to talk to the instructor about the course expectations prior to taking the class. As the semester moved on, the planning was still being carried on, but mostly on completing the course assignments. Again, participants reported self-efforts in working on their assignments, which were indicated by their initiatives in finding resources relating to the assignments. The bulletin board and live chats provided the participants with the opportunity to get answers to their questions on understanding certain topics as well as requesting for resources.

Certain challenges were identified in participants' planning process, which were specifically related to online learning. One was due to the demanding bulletin board discussion activity. This has been indicated as a challenge in other research studies (e.g., Song, Singleton,

Hill, & Koh, 2004). If not carefully planned, the bulletin board postings can become overwhelming as Mia said, "there could be easily 20 postings each day."

Another challenge came from the lack of required physical presence in the "class." Without the required physical presence, it can be challenging for some learners to actively participate in course activities. Other researchers have also described this phenomena (Elvers, Polzella, Graetz, 2003). It requires self-discipline to not only attend the online sessions of the class, but to also be actively involved in the discussions. Take Mia for example, she never had problem going to her other face-to-face class on every Monday evening. Yet, she found it "harder to treat the online course equally with other responsibilities." Sometimes, though she was "present" meaning logged in, she could be doing other activities at the same time.

Monitoring. Participants in general showed their ability to monitor their learning on their own. They were able to take initiative in checking on their learning progress. Participants were not only aware of the progress of the semester and what was due when, but was also able to follow the timeline on their own. They were aware when their assignments were due. They knew whether they were "on the right track." (Betty) Though it may require them to be "self-disciplined" to stay on track as there was "no one there saying, hey, you have got a paper due Thursday" (Tina). Students' ability to monitor their learning on their own may be partly due to the impact of online learning context as reported in other research studies in that online learning actually enhanced learners' self-monitoring skills (e.g., Vonderwell & Turner, 2003).

Evaluating. In evaluating their work, participants in general reported that they had their own opinion about their work. Not only did participants show their ability to make judgment on the resources they found on their own, such as web resource, but also they also often had their own opinions about their course assignments. For some participants (Tina), the self-evaluating

ability came with their prior confidence with themselves, as she said, “I take pride in my writing and I try to be analytical.” Yet, for others, the confidence in self-evaluating their work came with their improved understanding of the course expectations (e.g., Betty and Rose).

Overall, self-direction in planning, monitoring, and evaluating was evidenced in all participants in multiple ways. Yet, the level of self-direction in taking learner control varies among different participants. This finding was consistent with Moore’s (1970) view on learner control:

> to assume responsibility for one's own learning is a very difficult step to take. For some students, it is too difficult a step, and they are never able to take it. On the other hand, there are those students who take to it with a spirit of liberation, as if it were what they had been searching for all their lives. In the middle, there is the great mass of students who can accept this responsibility only with varying degrees of difficulty (p.157, cited in Candy, 1991, p. 371).

Peers

Peers were great resources for participants in monitoring their learning progress and evaluating their learning outcome. Participants reported use of peers to check on whether they were on track with the whole class and their understanding of course-related topics, and to compare their work. While participants were able to monitor their own learning progress, they often got reassurance by checking with peers’ progress. Some reported use of others’ work, posted on the bulletin board as required by the course, as a checkpoint for whether they were on track with the class (e.g., Ann and Mia). Others used peers’ perspective to monitor their understanding of certain topics by exposing to multiple perspectives (e.g., Betty and Rose).

Similarly, participants compared their work with peers' to make sure their take on completing the assignments was not too far away from others'.

While collaborative learning is helpful for learners to monitor their learning progress as indicated by the results from the reported study, other studies suggested that it could be a challenge to build collaborative relationship with peers in an online context. For example, in Vonderwell and Turner's (2003) study, participants reported being uncomfortable interacting with peer students whom they did not know beforehand. Yet, online learning, lacking face-to-face component, makes it challenging to learners to know each other well, thus making it a difficult task to build collaboration among learners.

Instructor

Participants in the study reported that instructor played an important role in their planning, monitoring, and evaluating processes by providing helpful guides and feedback on their work. One guide, developed by the instructor, which participants found very helpful in the planning and monitoring was the advanced organizer. They used it to plan their whole semester's activities in a timely manner, and to check their learning progress. This finding echoed Long's (1990) view on self-directed learning in that he stated self-directed learning does not equal to learning by oneself. Though participants showed their capability of planning on their own, it does not mean that they do not need help from others. In fact, appropriate instructional support can help facilitate learners' learning.

In evaluating their work, though participants indicated that they were able to judge their work and they used peers' perspectives as checkpoints, they considered the instructor's feedback as the most authoritative. When the instructor assigned a high grade on their assignments, participants' confidence in their work increased (e.g. Betty). When students were having a

discussion on a topic either on the bulletin board or in the chat room, participants often waited for the instructor to have the final word on it (e.g., Rose).

Summary

We conclude, based on the results of the study, that it requires self-direction, collaboration with peers, and support from the instructor to successfully take control in one's learning in an online course. The findings of the study provide further support for Hartley and Bendixen's (2001) speculation that learner' self-direction ability plays an important role in online learning success. The study findings were also consistent with Garrison's (1992) view on learner control in that he believed that control was an inherently collaborative process in an educational setting. The study indicated that learners planned, monitored and evaluated their learning by a joint effort between self and others (including the instructor and peers). The results of the study also indicated the importance of instructor's support in students' online learning.

Implications

In light of the results of the study, we provide the followings as implications for future research and practice in regard to online learning and learner control. First, we imply the importance to study learners' self-directed experience in online environments. Secondly, the fact that learners had easy access to peers' expertise in permanent writing either on the bulletin board postings or in the archived transcripts of live chats, presents implications in exploring opportunities to build collaborative learning in an online learning environment. Finally, due to the significance of instructor's support in students' online learning, we believe it is important to design and develop effective online instructional support in both research and practice.

Examining Self-Directed Learning Online

Self-direction has been considered as an important aspect in adult learning (Brockett & Hiemstra, 1991; Candy, 1991; Garrison, 1992; Merriam & Cafferella, 1999). Yet, a learner's self-directed learning varies across different learning contexts (Candy, 1991).

With the fast development of World Wide Web and increasing interest in online learning (Hill, Wiley, Nelson, & Han, 2003), online learning has become increasingly popular in higher education (The Sloan Consortium, 2004). One aspect that is considered as important in successful online learning is learner's self-direction (Hartley & Bendixen, 2001). The results of the study provided empirical evidence to support this speculation. Yet, to generate a comprehensive understanding of learner's self-directed learning in an online environment, more research is needed. One limitation of the study is that all participants were female, which may impact the generalizability of the results to a more diverse population. Research on male and female participants may help provide understanding of gender differences in self-directed learning.

Exploring Opportunities to Build Collaborative Online Learning Environment

The results of the study provided empirical evidence for the positive impact of collaboration with peers and the instructor on successful online learning, which supports scholars' perspective on valuable collaborative online learning (Herrington, Oliver, & Reeves, 2003; Herrington, Reeves, Oliver, & Woo, 2004; Reeves, Herrington, & Oliver, 2004). Some research has suggested ways to effectively build collaborative online learning, such as integrating authentic tasks in an online course (Herrington, Oliver, & Reeves, 2003). Yet, the current practice with online learning indicates lack of effective efforts in building effective

online learning that takes advantages of the affordances of online learning (Reeves, Herrington, & Oliver, 2004).

One advantage of online learning that was found helpful in the reported study in building collaboration with peers was the permanent availability of online discussions. Participants in the study reported that the fact that bulletin board discussion and live chats transcripts were permanently available to them in writing made the collaboration easier. They were able to digest peers' comments more deeply taking as much time as they need, as indicated by other research (Petrides, 2002; Meyer, 2003). They could always go back to the archived discussions to find exactly what somebody had said earlier. In so doing, they were able to understand each other better by reading their comments.

The success of the online course in building collaborative online learning reported in the study was partly due to the course design, which was found a helpful component in successful online learning (Song, Singleton, Hill, & Koh, 2004). More research is needed to explore design guidelines that can help develop collaborative online learning environment. An effective research approach to generate design guidelines for collaborative online learning is via development research (Reeves, Herrington, & Oliver, 2004).

Designing and Developing Effective Online Instructional Support

Self-directed learning does not mean learning by oneself (Long, 1990). Instructional support from the instructor has long been found helpful in students' learning (Vygotsky, 1978), whether it be online or in a face-to-face learning situation. Yet, the type of support that is available and feasible in an online environment may be different from those in a classroom setting. Further, learners' need for instructional support may differ in those two situations as well. The results of the study indicated participants perceived a timeline instructional support

that maps out the whole semester's course activities was a helpful support for planning and monitoring efforts.

Another instructional facilitation strategy that arose from the research study is effective written feedback. One interesting finding found with one participant about instructor's evaluation is that written communication sometimes can convey human emotions. Ann expressed her emotions when reading the instructor's feedback,

> [she] has been really good about it. The first thing when she responded to people. She said, you did a good job. Which let you immediately like, whew (relief). Then she gives the suggestions. Which I think is wonderful. If I get first immediately a bunch of suggestions about what I might need to change, I probably would fee deflated because I cannot see her face, cannot hear her voice of tone. So when you see you did a good job, that is a pat on the back.

This finding provides some insights that instructor's written feedback, if constructed carefully, can still effective convey emotions associated with the writing despite of the lack of facial expressions and voice of tone. Yet, the finding was only found with one participant and it is hard to generalize the finding to a wider population. More research is needed to explore how different learners react to same instructor's feedback, as well as other types of instructional support that can help facilitate students' online learning.

Conclusion

Online learning offers opportunities as well as challenges for learners to take control in their learning. Adult learners generally have the ability to plan their study, monitor their learning progress, and evaluate their learning outcome. Yet, collaboration with peers is an important aspect that impacts learners' success in an online course. The instructor also plays an important

role in successful online learning by providing effective instructional support that helps facilitate students' learning. Research is needed to examine self-directed learning experience in online environment, to design collaborative online learning, and develop effective instructional support in an online environment.

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Table 3.1 Perspectives on Learner Control

Components	Perspective on Learner Control		
	Moore (1972)	Cottingham (1977)	Garrison (1992)
Planning	Control over: • Pace • Sequence • Method	• Specifying behaviors • Diagnosing performance problems	• Responsibility in planning • Control in planning
Monitoring	Control over: • Execution • Implementation	• Checking progress • Controlling motivation	• Responsibility in monitoring • Control in monitoring
Evaluating	Control over: • Usefulness • Quality	• Evaluating achievement	• Responsibility in evaluating • Control in evaluating

Table 3.2. Learner Autonomy Data Analysis

Analysis Methods		Data Sources	Analysis Phases	Product
Inductive Analysis		1 participant's three interview transcripts	Open coding	Preliminary codes
	Constant Comparison	Other 5 participants' interview transcripts (15 in total)	Code comparison	Code list
		Research Questions	Categorizing the code list	Categories
		All interview transcripts (18 in total)	Closed coding on interviews using categories as codes	
		All interview transcripts (18 in total)	Data condensation	Categorized data
		1 participant's three interview transcripts	Thematizing	
	Constant Comparison	Other 5 participants' interview transcripts (15 in total)	Theme comparison	Preliminary themes
		Bulletin board transcripts and live chat transcripts	Theme triangulation	Final themes

Table 3.3. Overall Themes for Learner Autonomy

Categories	Preliminary Themes
C1: Planning	T1.1: Self-initiative T1.2: Self-discipline T1.3: Instructional resources
C2: Monitoring	T2.1: Self-monitoring T2.2: Peer-monitoring T2.3: Instructor's support
C3: Evaluating	T3.1: Self-evaluating T3.2: Peer-evaluating T3.3: Instructor-evaluating

Table 3.4. Theme Triangulation for Learner Autonomy

	T1.1	T1.2	T1.3	T2.1	T2.2	T2.3	T3.1	T3.2	T3.3
Ann	x		x	x	x	x	x	x	x
Betty	x	x	x	x		x	x		x
Dawn	x		x	x	x	x	x	x	x
Mia	x	x	x	x	x	x	x	x	x
Rose	x	x	x	x	x	x	x	x	x
Tina	x		x	x		x	x	x	x

Table 3.5 Themes for Planning

Resources	Definition	Sample quotes
Self-initiative	Self-initiative refers to the learner taking initiative finding resources related to the online course	"I looked online and kind get a feel of what is expected." "I set up bookmarks to different websites." "Does anyone know of a school that DOES use curriculum mapping, in the way we are talking about (actual teaching)?"
Self-discipline	Self-discipline refers to the ability to control one's behaviors without the help from others.	"The best thing to do is try to prioritize because otherwise they could easily slip to the crack." "When it comes to learning, I am very motivated and very self-motivated." "I have been aware from the beginning that I would really have to apply myself in order to have any chance of success because I have so much to work."
Instructional Resources	Instructional Resources refer to the course materials and/or instructional strategies designed and developed by the instructor.	"That was very good to help me pace myself. And then kind of look ahead to see what is expected and kind of get going." "It says from this time to this time, what we will be doing. I used that to organize my calendar so that when I look at my calendar I can see where things are."

Table 3.6 Themes for Monitoring

Themes	Definition	Sample Quotes
Self-monitoring	Ability to monitor one' learning independently	"I knew I was on the right track." "I would read the archive. Just to make sure I am not missing anything, any big announcement or things like that."
Peer-monitoring	Referring to peers as checkpoints to monitor one's learning	"I want to see what other people have posted about. See, ok, that's what they do with the question. It helped me write mine." "I got there to stay up to date what other people are doing. It kinds of gives me a checkpoint."
Instructor's support	Using instructional resources developed by the instructor to monitor one's learning	"Knowing about the directives, which is kind of pacing by itself. It is broken down by weeks." "it is a section on the WebCT. That is what it is called, advance organizer. You click on that. She kind of fleshed out the week when something is due. She would have a time frame. Even from the agenda and the syllabus, I couldn't see the whole picture. The advance organizer helped a lot.

Table 3.7 Themes for Evaluating

Themes	Definition	Sample Quotes
Self-evaluating	Awareness of how well they were doing and whether they were making progress, and ability to make judgments on their work.	"I take pride in my writing and I try to be analytical." "I feel much better." "There is a correct answer because constructivism is certain kind of thing. But our opinions are also requested. So we are asked to higher order thinking things. Ask us to apply to what we experience in school, which brings our subjectivity. Yes, I feel opinionated."
Peer-evaluating	Comparing self work with peers'	"We have got probably 3 people that are actually in the field now. They are actually media specialists. I think that kind of gave a different flavor. I think most of us look up to them because they are doing it right now, and I am not. I think that resource is very helpful. Very practical." "Really needed the chat to understand the topic." "I was gratified to get responses from others because it is voice of the experience."
Instructor's evaluation	Instructor's feedback is authoritative	"It is very important what my professor think of my work because they have been through all those professional experiences and their knowledge on the subject is great." "But she is always the last work. I do feel she is always the last word." "She is the voice of authority about the ideas."

Table 3.8 Summary of Answers to Learner Autonomy Research Questions

Question	Answer	Definition
How do adult learners plan their learning in an online course?	• Self-initiative • Self-discipline • Instructional resources	• Learner taking initiative finding resources related to the online course • Ability to control one's behaviors without the help from others • The course materials and/or instructional strategies designed and developed by the instructor
How do adult learners monitor their learning in an online course?	• Self-monitoring • Peer-monitoring • Instructor's support	• Ability to monitor one' learning independently • Referring to peers as checkpoints to monitor one's learning • Using instructional resources developed by the instructor to monitor one's learning
How do adult learners evaluate their learning in an online course?	• Self-evaluating • Peer-evaluating • Instructor's evaluation	• Awareness of how well they were doing and whether they were making progress, and ability to make judgments on their work • Referring to peers as checkpoints to monitor one's learning • Using instructional resources developed by the instructor to monitor one's learning

Figure 3.1 Sample Interview Guide

Interview Guide

Name: _____

Pseudonym: _____

Time: _____

Course: _____

Online Technology: _____

1. Think about your overall experience so far in this online course and tell me about how you managed your learning in the online environments…
2. What are some of the challenges you experienced if there were any?
3. Think about the strategies/plans you have used in this class, and tell me about it (what worked and what didn't).
4. How do you feel about your learning outcome in the online course?
5. Think about the structure of the course, tell me about what has helped you in your learning in this online class?

Figure 3.2 Sample Code List

Code list

1. Prior experience
2. Questions
3. Bulletin Board Activities
4. Resources
5. Challenges
6. Group
7. Evaluation
8. Online Communication
9. Learning Styles
10. Monitoring
11. Learning Autonomy
12. Online learning
13. Planning
14. Learning success
15. Adult learners
16. Social presence
17. Self-efficacy
18. Beliefs
19. Isolation

EPILOGUE

The purpose of the epilogue is to reflect on the results of the dissertation research. The study investigated adult learners' self-directed learning experience in an online learning context. In particular, the focus of the research was to understand learner's self-regulation and learner autonomy, two primary components of self-directed learning, in a graduate online course that was delivered completely online via WebCT®. A collection of articles is presented in the document as follows.

The first paper, *A conceptual model for understanding self-direction in online environments*, provides a theoretical foundation for self-directed learning, incorporating the concepts of self-regulation and learner autonomy. The paper emphasizes the importance of context for self-direction. The second paper, *Understanding adult learners' self-regulation in online environments: a qualitative study*, indicated the importance of prior knowledge, motivation, resource use, and strategy use in successful online learning. The third paper, *Understanding learner autonomy in online environments: a qualitative investigation*, suggested that online learning does seem to require more autonomy from the learners in planning, monitoring, and evaluating their learning.

Now my dissertation research is done. What have I learned about online self-directed learning? I believe self-directed learning skills are very important for adult learners, who often have to depend on themselves in their post-secondary educational experiences, informally or formally. Higher education has witnessed a shift, in many institutions, from an instructor-led learning approach to a more student-centered learning approach. In many instances, the role of

instructors is evolving from a “lecturer” or a “messenger" to that of a “facilitator.” This evolution is especially obvious in online learning situations where learners have limited or no access to the instructor physically. I see this evolution process both as a challenge and an opportunity.

The challenge is that the expertise of the instructors who are experts in the field of study, may not be adequately and effectively utilized in student-centered learning. Students, who have gone through traditional instructor-directed educational experiences in classrooms, are accustomed to be “given” the knowledge, but not to “acquire” or "construct" it. Yet, to succeed in an open learning environment, such as online learning, students need to become more proactive and engaged in the learning process. This is where I see an opportunity: better access to multiple forms of expertise: self, teacher, peers, etc.

Adult learners in higher education have accumulated much working experience related to the field of study in which they are involved. Therefore, they bring into the learning environment their experience as well as knowledge related to the subject matter. Online learning provides an opportunity to make peers’ expertise publicly accessible at any time and anywhere, in writing and in verbatim. While some research studies indicate that students may be suspicious of peers’ expertise and knowledge, others have shown that learners tend to write carefully in an online forum because they know their writing is going to be permanent and they do not want to embarrass themselves. Therefore, what is posted in online forums is usually the best thoughts from students, unless the posting is mandated, which often times does not produce deep-level thinking postings.

I see my next step in my future research, development, and practice is to design an online learning environment that enables students to take advantage of the expertise from the instructor

as well as the expertise from peers, and at the same time, helps develop students' self-directed learning skills

In closing , I would like to reflect on my research experience and writing experience during the process of my dissertation research. There are many challenges associated with conducting dissertation research, including access to a research site and participants as well as piloting the methods and instruments for the study. There are also challenges associated with developing the research skills and writing the dissertation. All of the challenges can be met with careful planning, skill development in courses, and support of colleagues, committee and the major advisor. Most of all, I believe it takes perseverance and determination to succeed -- which also coincide with the findings from my study. At the end of it all, self-direction seems to be a key.

APPENDICES

APPENDIX A

COURSE SYLLABUS[1]

[1] Converted into a word file from course website.

EDIT 6320 Information Technologies

Fall, 2004

Course Syllabus and Assignments

Due Date	Assignments
	Note: We will not be able to put together an actual technology plan. Instead, we will be working on the essential documents, up to the actual plan itself. I would recommend that you work in small groups of no more than 3 people or you may work individually. If you join a group, it is your decision what you do as a group and/or what you do individually, unless I specify in the assignment. If you choose a small group, please identify yourselves in an email to jtallman@coe.uga.edu. Note: some of these assignments ask you to post to the Bulletin Board linked to our course WebCT homepage. I will divide the Bulletin Board alphabetically into at least 4 forums so you will not have to read everyone's messages. When you enter the Bulletin Board, look for the messages in your forum and messages in Julie's Forum. I expect you to be active, responsive, and thoughtful in your messages. I also expect at least one substantive contribution each week. Lack of participation will hurt your overall performance and potentially your grade.
Due September 2nd	**Read** Baule, Steven M. *Technology planning for effective teaching and learning* (course text). Prepare a 1-2 page reflection around the following questions: 1) How do you envision that a technology plan centered on curriculum needs will impact your school? 2) How would a technology plan based on Baule's suggestions differ from the technology plan that your school currently has? 3)How would you change Baule's design to make it more useable for your school. 4) After checking out the State of Georgia's K-12 Technology Plan website at http://techservices.doe.k12.ga.us/edtech/TechPlan.htm, discuss why knowing how individual teachers use technology within their curriculum is vital to a school's technology plan. Discuss how Baule's suggestions compare with the State's planning ideas. Post your reflection on the WebCT bulletin board for 6320. **Value of assignment: 10 points out of 100** **Grading criteria:** Points awarded according evidence of considerable thinking and reflection, average evidence of thinking and reflection, superficial level of thinking and reflection
Due September 9th	**Individual Assignment:** **Search** the Internet and Galileo for articles on the process of curriculum mapping. Read the pdf file on curriculum mapping in the resources area of our WebCT course. Enter a dialogue on WebCT about your search and what you have found. Discuss how a curriculum map **would** impact what you know about your school's curriculum. Discuss how a curriculum map **could** influence either the role of the media specialist or the role of the technology coordinator. Discuss how a curriculum map **should** influence the technology plan and technology planning.

Post your dialogue to the WebCT bulletin board for 6320 within your forum. Most of you will not know anything about curriculum mapping before you start this course. That's ok. Please be patient in understanding the concept. It will become much clearer as the term proceeds. (Trust me, please). This is what the Bulletin Board is for--adding to our clarity about all sorts of concepts introduced in this course.

Value of assignment: 5 points out of 100

Grading criteria:

3 points discussion of how the map could influence either role of the media specialist or technology coordinator. (Good analysis, average analysis, not much evidence of analysis)

2 points discussion of how the map could influence technology plan and planning. (Good analysis, average analysis, not much evidence of analysis)

Due September 23

Locate and read a journal article or book chapter on each of the following subjects: 1) constructivist or instructivist teaching methods, 2) resource-based teaching or learning, and 3) project-based learning. Prepare a 2-3 page reflection on these articles combined that includes your opinion of the impact that each of these educational philosophies has or would have on your school's curriculum. Include the citations to your articles at the top of your pages. Use APA style for the citations.

Post your reflection to the Discussion List on WebCT within your forum.

Value of the assignment: 10 points out of 100

Grading criteria:

Points awarded according to evidence of considerable reflection on the differences among the philosophies and their impact on your school or a school; average evidence . . . ; superficial reflection . . .

Due November 4th

Group or Individual Assignment (I would recommend group). Work ahead on this assignment if possible but please don't start until you thoroughly understand what a curriculum map is and does.

Note: Curriculum maps, when well-done, tell the story of how the curriculum is actually being taught, not how it should be taught. Each teacher contributes his/her substantial and/or thematic units to the map so that, for example, the school faculty knows that Mr. Jones teaches the solar system in October to his fourth graders. The technology specialist and the media specialist also read from the map that Mr. Jones wants his students to prepare a PowerPoint presentation on individual planets. He wants them to learn how to ask questions about their planets that will guide their investigations. The two specialists can see from the curriculum map that Mr. Jones has a student-centered classroom, and likes his students actively exploring print, av, and Internet-based resources. They see from the unit write-up that he relies on non-textbook resources for most of the unit. In addition, they can view his curriculum learning QCC objectives and his student learning expectations. From this information, the two specialists make an appointment with Mr. Jones to plan together to further develop his unit to include the kinds of resources he wants, the technology he wants, and the technology and literacy skills the specialists need to teach the students in order for the students to be successful learners.

The curriculum map consists of this kind of information for each major unit of each teacher in the building. The information could be organized in chart form with a looseleaf notebook available with more detailed planning information on each unit as the media specialist and technology specialist work with the teachers. It could also be organized in a database so that the two specialists (or anyone else in the school) could pull up each month's units for more effective resource planning. It could be laid out in a table form for the technology committee to use to decide on the next year's technology requests in order to help those teachers who need technology assistance for what they would like to accomplish. Their needs are set out in the units they teach. Each specialist uses these plans to discuss with the teachers the kinds of things that the teachers would like to be doing if they had more resources. The specialists then report back to the technology committee concerning teacher needs. These reports are tagged to the technology committee requests as justifications and rationale.

Assignment:

Develop a curriculum mapping worksheet to use when you interview teachers. This worksheet will contain categories of information that you need to collect. You will have a worksheet for each major unit. I will put some examples up on our WebCT homepage. You are free to copy but I would prefer you adapt one to your own school situation.

Those of you not in a school will need to join with a peer working and a school.

Working with one grade level in elementary or one discipline in middle school and high school (depending on size of school--you will create the map for the discipline for all the grades or one grade if you have 10 or more teachers for that grade level), use your curriculum worksheet to collect information on each teacher's major thematic (for example: not grammar units) for the first quarter of the school year. The information you collect will be about what has been actually taught, not what the curriculum guide specifies or what the State requires. Each teacher teaches the same subject matter a bit differently, even if the curriculum requires directed teaching (i.e. Saxon math). Thus, you will need to work with each teacher. Please do not give them the worksheet. Use it to prompt yourself when you talk with them about their units. Fill it out yourself so you can make valuable notes on the side. Invite them for coffee or take them a breakfast some morning if you can't find a time to talk with them any other way.

As you talk with your teachers, take the role of the media specialist in your head and think about how you might use the units for integration of information and technology literacy skills or what ideas you might have that you could offer the teacher. Eventually, your curriculum map will be the best collaboration instrument you will have. The worksheet will provide you with the tools for analyzing units, teaching style, technology integration, assignments, and resource requirements.

There is **No** one best way to organize your map. Rather, you need to spend some time thinking about what layout makes sense to your group and seems most useable to your school.

Your group's units are due in map form on October 28th. Post them as an attachment on the Bulletin Board and email them separately as a group to me, please, one per group sufficient.

Value of the assignment: 40 points out of 100

Grading criteria:

Points awarded according to demonstrated understanding of the role of a curriculum map, completeness of the map for the 9 units, effectiveness of the worksheet for current information and future planning

Due November 12th

Prepare two technology assessment instruments, one for students and staff. The purpose of these assessment instruments is to identify your staff and student technology skill levels and their perceived needs. These instruments will also tell you how technologically literate both groups are.

Use the Johnson book to help you prepare the instruments. Good questionnaires are difficult to create so spend some time thinking about how you will ask the questions and what the content of the questions should be to get at the essential information.

Please be certain to ask teachers to identify how they plan to use technology in the future within their curriculum.

Post your documents as links to your webpage, as attachments to the Bulletin Board and as email to me, one copy per group.

Value of the assignment: 15 points out of 100

Grading criteria:

Effectiveness of questions to obtain technology literacy levels; future technology needs; format for questionnaire that is easy to take

Due December 2nd

A technology plan should start with a Community Profile for your school. The profile information can come from information already prepared in the "boiler plate" or front description of a grant that your district or principal has submitted to an organization, public relations flyers prepared for public consumption, and State Department of Education websites for your school test score results. Its contents would also include a brief description of your community and its main employers, a description of the community population ethnic make-up, a description of the school district with size and different ethnic populations, and a description of your school and student body including test scores, and other identifying characteristics including ethnic and Title 1 data. The purpose of this document is to set the stage for any special concerns the technology plan should cover. Finally, it should include a brief history of the previous technology planning that the school has undertaken.

While you are working on your curriculum map assignment, collect this information and work it into a short 1-3 page essay to start your tech plan document. The profile sets the school environment for the plan.

Value of the assignment: 5 pts out of 100.

Grading criteria:

Contains description of community population ethnicities, school populations and

performance, teacher experience and degrees, general businesses and industries description, cultural advantages that schools can use (libraries, museums, etc.), economic strata, GA. Dept of Education data on the school. Written in a professional manner for an audience of educators and parents.

Due December 2nd

Put it all together. If we were actually preparing a technology plan for your school during this term, we would have written a community profile, we would now know the major units our teachers teach (curriculum map). We would know how computer literate our teachers are and also their students (technology assessment instruments). We can now use this information to prepare a technology plan for next year. Putting the above information into a document, we have the beginnings of a technology plan. What remains is for you, the technology specialist, media specialist, or technology committee member, to analyze the individual units for the kinds of technology not present that you think would enhance the teaching and learning for these units. From your analysis and interviews over worksheets with your teachers, evaluate what kinds of technology they need to enhance their teaching and student learning. Complete this analysis for 3 individual units (not courses). These ideas with their explanation and justification will serve as the foundation for technology budget requests and the plan for the next year.

Prepare a paper containing the analysis of the units. Demonstrate the process by which you would analyze the unit, the learning goals, the teaching style of the teacher, the types of student learners, the literacy needs, and the technology available that could improve and enhance all these goals. Explain how your suggested technology uses would improve the teaching and learning happening within the unit. Describe how you would then approach the teacher with your ideas and spark the teacher's enthusiasm.

This process paper will move you from the unit worksheet information through the map to discussion with the teachers about what they want to accomplish to your suggestions on how to help the teachers carry out their goals. It will demonstrate how you think about technology as a curriculum tool that enhances teaching and learning.

Post your document as a link to your webpage, as an attachment to a Bulletin Board message, and as an email to me, one assignment per group.

Value of the assignment: 15 points out of 100

Grading criteria:

Demonstration of thinking process going from curriculum map units to creating ideas for technology enhancement possibilities to approaching teacher for planning together ways to enhance learning and technology literacies.

This page updated August 16, 2004

APPENDIX B

COURSE REQUIREMENTS[2]

[2] Converted into a word file from course website.

EDIT 6320 Information Technologies

Fall '04 Course Requirements

General

EDIT 6320, an online course, is taught asynchronously - meaning you and the instructor can be anywhere, anytime.

"Asynchronous instruction does not require the simultaneous participation of all students and instructors. Students do not need to be gathered together in the same location at the same time." (Gilbert, 2001, p. 23.)

There are a number of methods we will use to communicate throughout the course. The primary method will be through the use of bulletin boards in WebCT. Any discussions during the course or questions asked that are for the good of the group should be posted on WebCT. You are registered to use WebCT as part of this course.

A second method of communication will be the use of the Chat Room in WebCT. I will have virtual office hours that will allow all students an opportunity to ask questions of me in real time. Specific times will be posted once the course begins. Copies of the logs from these sessions will be posted on an organizer page off the WebCT homepage for this course.

My expectations are that you participate in at least one office hour per week, that you keep in regular contact with me about the progress of your assignments, and that you contribute substantively to the discussion board and virtual office hour chats. In return, I will be available to help you with your needs. This course will go fast and will demand that you keep on top of the assignments. Because of the short time period, the due dates are firm. Missing the due date and/or failure to participate fully on the discussion board or in a weekly virtual office hour will subject you to grade penalties. Please check with me whenever you have problems. If you choose to go on vacation during this period, I don't mind but keep up with the class virtually. That's the benefit of asynchronous online learning.

Student Role

Your role as a student in an online course is very different from a traditional classroom course. Online students must take responsibility for their own learning. The course will give you direction and guidance, but it is up to you to research other resources and develop your own learning.

Instructor Role

he instructor's role in an online course is also very different from a traditional classroom course. It is important to understand that the instructor is more of a:

- Facilitator
- Delegator
- Resource person

Technology

Of course you will need full access to a personal computer with connection to the Internet. The faster connection speed you have the better your online experience.

Your browser can be either Internet Explorer or Netscape, whichever you are most comfortable with.

You may post your assignments to your cohort webpage that you establish in EDIT 6300 in addition to what the specific assignments ask you to do. Please email your website URL to me.

Online Activity Rate

Since this course is held asynchronously, class hours are 24/7! That doesn't mean you will be online all the time, but know that your classmates and instructor will be posting information on their own schedules, which could mean anytime of the day or night.

As a general rule of thumb, you should expect to check your email and the Bulletin Board postings in WebCT ***at least*** once a day. The more you check these information sources, the more you will gain from the course. Your participation will be evaluated on quality of critical thinking about the topics, not on the number of postings you make. As a general rule, you should probably plan to add to discussions a minimum of twice a week. We will be looking for ideas and opinions about the topics covered in this course. Yes, there will be room for personal notes that make the bulletin board more welcoming. I will be splitting you into forums by alphabet to make reading and participating less confusing.

Assignment Formats

To make certain that I can read your work, please post your email to me in one of the following formats:

- **Microsoft Office (all programs)**
- **HyperText Markup Language (.htm or .html)**
- **Adobe Acrobat (.pdf)**
- **Rich Text Format (.rtf)**

Page updated August 17, 2004

APPENDIX C

COURSE CALENDAR[3]

[3] Converted into a word file from course website.

EDIT 6320 Information Technologies

Fall '04 Calendar

August 20-28th	**Dr. Tallman in Buenos Aires, Argentina for International Federation of Library Associations Annual Conference. No office hours online but start working on September 2 and 9th assignments. Post on Bulletin Board any questions and problems.**
September 2nd	**Read** Baule, Steven M. *Technology planning for effective teaching and learning* (course text). Prepare a reflection around the following questions. . .
September 9th	**Search** the Internet and Galileo for articles on the process of curriculum mapping. . . .
September 23rd	**Locate** and read a journal article or book chapter on each of the following subjects: 1) constructivist or instructivist teaching methods, 2) resource-based teaching or learning, and 3) project-based learning. . . .
October 28th	**Fall break**
November 4th	**Curriculum map completed**
November 12th	**Technology assessment instruments due for staff and students.**
December 2nd	**Community profile due.**
December 2nd	**Final technology integration essay due.**

Page last updated August 17, 2004

APPENDIX D

RESEARCH TIMELINE

Interview Timeline

Time	Interviews
August 27, 2004	Introduce the research project to students and solicit for research participation. Distribute consent forms to participants. Collect participants' email addresses
September 6, 2004	First round interview (1 participant)
September 8, 2004	First round interview (1 participant)
September 11, 2004	First round interviews (6 participants)
October 2, 2004	Second round interviews (3 participants)
October 7, 2004	Second round interview (1 participant)
October 16, 2004	Second round interviews (4 participants)
December 4, 2004	Third round interviews (4 participants)
December 9, 2004	Third round interviews (1 participant)
December 11, 2004	Third round interviews (3 participants)

Bulletin Board Timeline

Time	Bulletin Board Within Group	Bulletin Board Whole Class
Sept. 2, 2004		Main2Sept.txt
Sept. 10, 2004	GroupA10Sept.txt; GroupG10Sept.txt; GroupM10Sept.txt; GroupR10Sept.txt;	Julie_10Sept.txt; Main10Sept.txt
Sept. 22, 2004	GroupA22Sept.txt; GroupG22Sept.txt; GroupM22Sept.txt; GroupR22Sept.txt;	Julie_22Sept.txt; main22Sept.txt
Nov. 01, 2004	GroupANov01.txt; GroupGNov01.txt; GroupMNov01.txt; GroupRNov01.txt;	JulieNov01.txt; mainNov01.txt
Dec. 07, 2004	GroupA07Dec.txt; GroupG07Dec.txt; GroupM07Dec.txt; GroupR07Dec.txt;	Julie_07Dec.txt; main07Dec.txt

Chat Timeline

#	Chats (file name)
1	aug-31.doc
2	sep-2.doc
3	sep-9.doc
4	sep-14.doc
5	sep-21.doc
6	Sept-28.doc
7	Sep-30.doc
8	05Oct.doc
9	07Oct.doc
10	12Oct.doc
11	19Oct.doc
12	21Oct.doc
13	02Nov.doc
14	04Nov.doc
15	Nov09.doc
16	Nov11.doc
17	Nov16.doc
18	Nov30.doc
19	Dec02.doc

APPENDIX E

INTERVIEW GUIDE

Interview Guide

Name: _____

Pseudonym: _____

Time: _____

Course: _____

Online Technology: _____

1. Think about your experience in this online course and tell me about how you managed your learning in the online environments…

2. What did you do to prepare for the course? What did you do to prepare for the assignments?

3. How did you monitor/regulate your learning? (How do you feel about your learning progress?)

4. What made you go to the bulletin board and the chats?

5. How did you evaluate your learning? (What do you feel about the quality of your work?)

6. What are some of the challenges you experienced if there were any?

7. What are some of the strategies that used in your learning?

8. What are your overall perceptions of your learning in the course?

9. If you were to receive some scaffolds in your online learning, what would you like to have?

APPENDIX F

SAMPLE INDIVIDUAL BULLETIN BOARD TRANSCRIPT DATA

Sample Individual Bulletin Board Transcript Data (Note: pseudonyms are used)

Posted by Rose on Friday, December 3, 2004 4:07pm

Subject Re: Unit Analysis

Dear Ba, Be and Me, I really enjoyed your
analysis. The page that meant the most to me was the
last; your ideas on how to successfully introduce
mapping were great. Thanks--Rose

Message no. 1834
Posted by Rose on Wednesday, September 8, 2004 8:09am

Subject Baule reflection

C, you write well! What you wrote read easily and
was interesting. I am piqued by your idea of a specific
person at school or county level, in each subject area,
to work on ideas for utilizing technology in their
fields. I will ask if we have such "informers"
(information liasons?) in my county, B county.
Where and what do you teach? Thanks--Rose

Message no. 2007[Branch from no. 1948]

Posted by Rose on Tuesday, September 14, 2004 1:25pm

Subject Re: Curriculum Mapping Assignment 2

A, what was the article or site where you learned
about Atlas? I want to read about it, too. Enjoyed your
information! --Rose

Message no. 2313[Branch from no. 2276]

Posted by Rose on Friday, November 19, 2004 3:58pm

Subject Re: Tech Surveys -

K and V, I thought your surveys were
excellent: easy to read, pretty painless but thorough
(and the humor in the teacher survey is a helpful touch ☺

APPENDIX G

SAMPLE INDIVIDUAL BULLETIN BOARD TRANSCRIPT TABLE

Sample Individual Bulletin Board Transcript Table (Dawn)

Message Number	Time	Day	Month	Theme	Required	Response	Initiated
1783	2:46pm	Fri.	Sept. 3	Sharing			x
1850	12;38pm	Wed.	Sept. 8	Response		x	
1888	9:54pm	Wed.	Sept. 8	Response		x	
1849	12:36pm	Wed.	Sept. 8	Assignment: Baule reflection	x		
1902	9:12am	Thurs.	Sept. 9	Assignment: Curriculum mapping	x		
1972	12:57pm	Thurs.	Sept. 9	Assignment: references added	x		
2061	8:48pm	Tues	Sept. 21	Assignment: teaching methods	x		
2088	9:26pm	Wed.	Sept. 22	Response		x	
2092	10:58pm	Wed.	Sept. 22	Comments; rhetorical question	X	x	x
2198	3:28pm	Wed.	Sept. 29	Comments	x	x	
2188	4:02pm	Tues.	Sept. 28	Comments	x	x	
2196	12:17pm	Wed.	Sept. 29	Comments	X	x	

APPENDIX H

BULLETIN BOARD WITHIN GROUP ACTIVITIES TABLE

Bulletin Board Within Group Activities Table

Participants	Number of postings in each month									
	August		September		October		November		December	
	Required	Interaction	Required	Interaction	Required	Interaction	Required	Interaction	Required	Interaction
Ann	0	0	11	8	0	0	0	0	0	0
Mia	0	0	4	2	0	0	0	4	0	0
Betty	0	0	4	4	0	0	0	0	0	0
Dawn	0	0	8	9	0	0	0	0	0	0
Rose	0	0	3	9	0	0	0	1	3	3
Tina	1	0	2	6	0	0	2	0	0	0
Total/People	1/1	0/0	29/5	38/5	0/0	0/0	2/1	5/2	3/1	3/1

APPENDIX I

BULLETIN BOARD WHOLE CLASS ACTIVITIES TABLE

Bulletin Board Whole Class Activities Table

Participants	Number of postings in each month									
	August		September		October		November		December	
	Required	Interaction	Required	Interaction	Required	Interaction	Required	Interaction	Required	Interaction
Ann	0	0	0	1	0	0	0	0	0	1
Mia	0	1	0	1	0	2	0	1	1	1
Betty	0	1	0	0	0	1	1	1	0	3
Dawn	0	0	0	5	1	0	1	0	1	2
Rose	0	1	1	3	0	4	3	2	0	1
Tina	0	0	0	1	0	2	3	3	1	1
Total/People	0/0	3/3	1/1	11/5	1/1	9/4	8/4	7/4	3/3	9/5

APPENDIX J

CODE LIST

Code	Description	Example
Prior experience	Prior experience with content or online learning	I had 6360 with her (the instructor), so I was familiar with WebCT format.
Questions	Seeking answers to questions	Usually I would ask questions in class like in WebCT. Like if it is something that can wait until class, I would wait and ask her then in a chat. But if it is something urgent like something is due, I would freak out. First thing I would email her and then I post to the bb.
Bulletin Board Activities	Participants' perceptions of bulletin board discussion	I like discussion board because it helps me see hey, I am not the only person in this virtual world who has all these problems.
Motivation	Decide to take action in learning activities	I got there to stay up to date what other people are doing.
Resources	Anything learners used in learning	I have also contacted my old high school teachers that I liked and they liked me.
Challenges	Difficulty learners experienced in the course	It is challenging to be because you can get it away from f2f classes impress your ideas because of your facial expressions, your emotions. It is more of a challenge to say it correctly in a way that is not offensive. It is challenge to express what you want in totally writing.
Group	Participants' perceptions of group work	For this program, I find myself surprising motivated to do group work. Usually I am an individual worker in my undergrad because I didn't want to rely on other people. I couldn't get that through my head. And in the program, maybe it is just the people I met, everybody, I think in graduate school, you are different because you want to be here and you are paying to be here, it is something you want to do and you chose to do this on your own. That helps you to know that they want to be here. They want to do and I want to do. So I have more trust of my group members that they are going to get things done. Now I like to do group work because I have other people to bounce ideas off and stuff like that.
SLM Program	Participants' perceptions of the SLM program in general	This program is very well designed. My advisor advised me to stay with the cohort and she was right. It would have been different had I not taken these two courses together.

Evaluation	How did participants make judgment on their own work as well as others' work	I make sure I read other people's reflections because the feedback from my peers really tells me where I have gone. they would tell me, oh, this point is really good. Or did you look at this way?
Online Communication	Participants' perceptions of email, bulletin board discussion, and live chats	When you speak, you take a lot for granted when you have so many cues to help you understand. On that flat screen, particularly with different messages coming in with different trends being discussed simultaneously, it is easy to get confused and to confuse people
Monitoring	Checking learning progress	It kind of gives me a check point. This is where other people are and this is a point where I need to be.
Learning strategies	How did participants accomplish learning?	By reading and by getting to know them. So at the start of the course, I was reading everybody's paper. By the middle of the course, I was maybe reading half a dozen people. So that is a strategy: narrowing down who in the cohort to look for. Another strategy was realizing that I absolutely have to depend on my relationship with the teachers and administrators of my school to do my coursework.
Online learning	Participants' perceptions of online learning	It is harder to learn on chat than it is in a classroom.
Planning	How did participants prepare for the course and prepare for course activities	I set up bookmarks to different websites they recommended and to the different assignments. I do a lot of prep work so I can walk in organized
Learning success	Participants' perceptions of learning success	I feel as though I have learned an awful lot in a short period of time.
Adult learners	Characteristics of participants that are specifically related to adult learners	At my age, I am much less afraid of going to my professor and tell her that I am in trouble. Not that I feel that I certainly should not be the first measure you are in trouble. When things happen and I want to get in a timeline, and I went to my professors. I probably would not have done that when I was 25 years old.
Social presence	Feeling of connection with other people in the class	In the chat room. People give out bits of information about them whether they are a teacher, where they are from, where they live. I intend to go back to the archive to create a cheat sheet of who people are. Something to

		keep track because it is very impersonal when you read the chat, you tend to see what they write rather than who they are. So I try to go back to create a list. Oh Donna is a stay at home mom with three kids. I find myself doing that and being drawn to certain people and just kind of forming naturally. You start talking back and forth in the chat and you end up working together
Self-efficacy	Confidence in self's work	I take pride in my writing.
Beliefs	Beliefs about how learning happens	So I get a lot of from other people's even though they did not look at it the same way. Being in the media specialist field, you are going to have to look at it from different perspectives
Isolation	Feeling disconnected with others in the online course	Chat is difficult because it is all on a flat screen.

APPENDIX K

ADVANCED ORGANIZER

Advance Organizer for EDIT 6320

August 17, 2004

The purpose of this organizer is to get you started productively. These are the most important tasks to accomplish quickly. Dr. Tallman will be in Buenos Aires, Argentina from August 20th-28th. Post problems and questions on the WebCT course Bulletin Board. If I can connect to the Internet, I will answer as many as I can. Purchase only the Baule text through the UGA Bookstore or directly from the publisher. Do not go through Amazon.com. The publisher is reprinting so ignore any out-of-print notifications. The UGA Bookstore will not allow you to telephone with a credit card order.

During weeks August 19th-September 2nd

1) Read Steven Baule's textbook on technology planning with the following questions in mind: A) How do you envision that a technology plan centered on curriculum needs will impact your school? B) How would a technology plan based on Baule's suggestions differ from the technology plan that your school currently has? C) How would you change Baule's design to make it more useable for your school? D) After checking out the State of Georgia's technology planning website (url on my syllabus page), note the technology levels listed for each level. Compare Baule's ideas with the State's recommendations. 5) Discuss why knowing how individual teachers use technology in a building is vital to technology planning.

2) This reflection (short though it is) should demonstrate reflection about technology integration in the classroom and the impact of technology planning on technology integration.

During weeks August 19th-September 2nd

1) Form groups of 2-3 with the object of completing the curriculum mapping assignment together. For the other assignments, you can stay in this group or work alone, your choice. Notify me your group members via mail message within WebCT

2) Read the syllabus thoroughly. Ask any questions you have during chat hour at 7:30pm Tuesday evening, August 31st, **WebCT chatroom 1**. All chats will be archived and posted linked to the course WebCT home page for later use as necessary.

During week September 3rd-September 9th

1) Find Internet or Galileo articles on the process of curriculum mapping. Hint: Heidi Hayes Jacobs is one of curriculum mapping's gurus. No, you don't need to buy her software.

2) Read for explanations of how mapping, if done correctly, might impact your school. Remember: mapping is the technique to map what is actually being taught which is not necessarily what has to be taught through the QCCs. The two are not the same thing. Nor are curriculum guides that the school might have the same as a curriculum map. Curriculum guides state what the teachers should be teaching. A curriculum map records what the teachers actually

teach, usually in retrospect, as the year goes along.

3) Discuss how the a curriculum map could impact and influences changes in your school's curriculum and changes in the technology specialist and media specialist jobs. How might the curriculum map clue you into the teaching styles of the building's teachers and their use of resources outside textbooks, along with their use of technology?

4) Post your opinions on the WebCT bulletin board in your forum, which will be alphabetically created, Postings should be substantial in reflective thought with responses to other's postings additionally reflective. I do expect responses that discuss ideas as well as give suggestions, not just "I agree with you".

During weeks September 10th-September 23rd

Search the Internet for one article on each of the following teaching philosophies: constructivism and/or instructivism; resource-based teaching or learning, and project-based learning. Prepare a 2-3 page reflection on these articles that includes your opinion of the impact that these philosophies have on your school's curriculum. If most of your teachers follow one particular philosophy, address that philosophy and its impact on teaching and learning, then speculate on how differently the teaching and learning would be under the other two philosophies. Grading will be done on depth of reflection.

During weeks September 23rd-November 4th

1) With your group, collect curriculum units as outlined in the syllabus.

2) Think about the information you should identify from the units and how best to display that information.

3) Create a worksheet that identifies the main ingredients a map should have and fill out a copy of the worksheet for each of your units

4) Interview your selected teachers using your worksheet as a guide for you to note the information for transfer to your map.

Grading based on demonstrating of understanding curriculum mapping and what it should contain and effectiveness of worksheet for future use.

During week of November 5th-November 12

Create two questionnaires, one for teachers and one for students, which will get at the level of their skills and also how they integrate technology into their curriculum.

Grading based on effectiveness of questions for obtaining technology literacy levels and technology use.

During weeks November 13th-December 2

Prepare a community profile on your school and community. Include the information as indicated on the syllabus. Analyze two of your curriculum units that you have on your group's map for use of technology and possible future use of technology. Describe your process by which you analyze the unit, the learning goals, the teaching style of the teacher, the types of student learners, the literacy needs, and the technology available that would improve the teaching and learning happening within the unit. Finally, describe how you would then approach the teacher with your ideas. Grading based on effectiveness of analysis and ideas for improving technology integration within the unit.

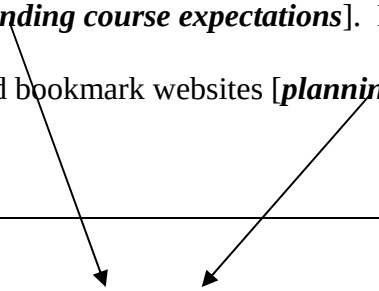
APPENDIX L

SAMPLE CODED INTERVIEW

Sample coded interview (codes are italicized bold texts).

S (researcher): What did you do to prepare for [***planning***] the class?

Dawn (participant): to prepare for [***planning***] this class, a lot of internet [***resource***] searching for the class site. Reading everything and download what I need [***planning; resource; strategy***]. I set up bookmarks [***planning; strategy***] to different websites [***resource***] they [***resource-human***] recommended [***collaboration***] and to the different assignments [***course related***] . I do a lot of prep work [***planning***] so I can walk in organized. I typically try to read ahead the syllabus [***planning***], the agenda, the assignment list [***resources***] and have a feel of what I am getting in for [***understanding course expectations***]. Like I said, I print the syllabus and put in notebook and bookmark websites [***planning; strategy***].



Bold, italicized words/phrases in brackets are inserted codes.

APPENDIX M

CATEGORIES

Categories

1. SLM Program
2. Adult Learners
    a. Learning styles
    b. Adult learners
    c. Self-efficacy
    d. Beliefs
3. Learner autonomy
    a. Planning
    b. Monitoring
    c. Evaluation
4. Self-Regulated Learning
    a. Prior experience
    b. Motivation
    c. Resources
    d. Learning Strategies
5. Online learning
    a. Challenges
        i. Questions
        ii. Challenges
        iii. Group
        iv. Evaluation
        v. Online communication
        vi. Social presence
        vii. Isolation
    b. Online Communication
        i. Bulletin Board Activities
        ii. Online Communication
    c. Group work

APPENDIX N

SAMPLE CATEGORIZED DATA

Self-Regulation Mia

Motivation (Mia Transcript 1):

- Learning: “I just like to know as much as possible.” [1]*
- Checkpoint: “I don’t want to miss anything.” [2]
- Course requirement: “I mostly go there (WebCT BB) because she told us to.” [3]
- Seeking answers: “if I do have specific question, I go there (WebCT BB).” [4]
- Compare work with peers: “I just want to see what people have posted and what their reflections are in comparison of mine just in general.” [2]

Motivation (Mia Transcript 2):

- Course requirement: “I went to both (chats) the first week and then I went to talk to Tammy and she said I only needed to go to one. … so I am going to once a week.” “I go because I am required to go.” “Previously, I went because I was scared that I would miss anything. Now I am participating more, I do it because we are supposed to do.” [3]
- Checkpoint not missing any information: “I think part of reading archives is that because I got bits of information during the chat, but not all of it. I didn’t want to miss anything.” [2]
- Know other people’s thoughts: “make sure hear everybody’s thought. We are only supposed to come once a week. If everybody is working under that, you are only getting half of the people’s perspectives. So I read the archives to see what other people are to say and make sure I don’t miss anything.” [1, 2]

Findings*

1. *Desire for knowledge*
2. *Monitoring self learning progress*
3. *Course requirement*
4. *Seeking course-related information*

APPENDIX O

BULLETIN BOARD INTERACTION TABLE

Bulletin Board Interaction Table

Participants	Number of interaction postings in each month									
	August		September		October		November		December	
	Within Group	Whole Class	Within Group	Whole Class	Within Group	Whole Class	Within Group	Whole Class	Within Group	Whole Class
Ann	0	0	8	1	0	0	0	0	0	1
Mia	0	1	2	1	0	2	4	1	0	1
Betty	0	1	4	0	0	1	0	1	0	3
Dawn	0	0	9	5	0	0	0	0	0	2
Rose	0	1	9	3	0	4	1	2	3	1
Tina	0	0	6	1	0	2	0	3	0	1
Total/People	0/0	3/3	38/5	11/5	0/0	9/4	5/2	7/4	3/1	9/5

APPENDIX P

SAMPLE CHAT ROOM DISCUSSION TRANSCRIPT

Sample Chat Room Transcript (Note: pseudonyms were used; non-participants' conversation was omitted)

Tina>>according to the research I read, it was much more prevalent and valued when the principle made it a focus. But mandating wasn't mentioned.

Tina>>It= collaboration

Betty>>No benefit was discussed but it was just added to the duties.

……..
Dawn>>that is a common problem these days - mandates without support

……

Betty>>She wanted to mandate meetings with her. I mentioned that we meet on Tuesday and Thursday to collaborate and she could join us but she didn't like the idea.

…….

Betty>>I think that she is worried about SACS review in the spring.

……

Tina>>But why can't she meet with you at your time? That makes sense!

Betty>>I offered to share the curriculum map that my pod is working on but she didn't respond.

APPENDIX Q

AUTHOR GUIDELINES FOR TARGETED JOURNALS

Adult Education Quarterly (excerpt from journal website http://www.coe.uga.edu/aeq/index.html)

Adult Education Quarterly is a refereed journal committed to the dissemination of research and theory in adult and continuing education. The editors seek manuscripts that report research, build theory, interpret and review literature, or critique articles previously published in AEQ. Manuscripts primarily concerned with the techniques of practice are generally not within the scope of this journal. AEQ publishes articles representing a broad range of methodological approaches, including:

a. empirical studies which use critical, action, participatory, experimental, quasi-experimental, correlational, descriptive, historical, philosophical, qualitative, or interpretive methods;
b. theory-building articles;
c. interpretive reviews of the literature (position statements of reasoned critiques of articles previously printed in *Adult Education Quarterly*);
d. essay reviews are commissioned by the editors; they examine several vital documents on concepts, theories, and practices in the filed of adult and continuing education; and
e. book reviews of recently published works.

The journal has a forum section, which is designed to publish reasoned critiques of previously articles previously published and shorter position papers related to the field. A forum is a position paper or advocacy using narrative and rhetorical devices to stimulate critical thought.

Journal of Computing in Higher Education (excerpt from the journal website: http://www.jchesite.org/index.html)

The *Journal of Computing in Higher Education* publishes peer-reviewed essays, reviews, reports, and research articles that contribute to our understanding of the issues, problems, and research associated with instructional technologies and educational environments.

Articles exploring innovative pedagogical techniques, experimenting with instructional technologies, or improving learner-centered assessment are encouraged. Articles are referenced in several national indexing/abstracting services.

Educational Technology Research and Development (excerpt from http://www.aect.org/Intranet/Publications/index.asp)

The only scholarly journal for the field focusing entirely on research and development in educational technology. Research Section features well documented articles on the practical aspects of research as well as applied theory in educational practice. A comprehensive source of current research information in instructional technology. Recent articles include, "Learner Preferences and Achievement Under Differing Amounts of Learner Practice," and "Emergent Patterns of Teaching/Learning in Electronic Classrooms." Development Section publishes articles concerned with the design and development of learning systems and educational technology applications. Recent articles include, "Do Superior Teachers Employ Systematic Instructional Planning Procedures?," and "The Cognitive Approach to Training Development: A Practitioner's Assessment." Each issue also includes book reviews, international reviews, and research abstracts.