Assessment of Self-Directed Learning in an Online Context in the Community College Setting

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in

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by

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2010
DEDICATION

To Mom and Dad

Me ke aloha pumehana.
# TABLE OF CONTENTS

SIGNATURE PAGE ........................................................................................................ iii

DEDICATION .................................................................................................................. iv

TABLE OF CONTENTS ................................................................................................. v

LIST OF FIGURES ....................................................................................................... viii

LIST OF TABLES ......................................................................................................... ix

VITA .............................................................................................................................. x

ABSTRACT OF THE DISSERTATION ........................................................................ xi

Chapter 1: Introduction ............................................................................................... 1
  Context of Problem ................................................................................................ 2
  Purpose of Study and Rationale ........................................................................... 4

Chapter 2: Literature Review ..................................................................................... 8
  Adult Learning Principles ....................................................................................... 8
  Self-Directed Learning ......................................................................................... 11
  Self-Motivation ..................................................................................................... 14
  Instructional Design ............................................................................................. 16
  Interactivity .......................................................................................................... 21
  Instructor Facilitation ......................................................................................... 23

Chapter 3: Methodology ............................................................................................ 26
Purpose of the Study and Research Questions .......................................................... 26
General Design and Rationale .................................................................................... 28
Site Description .......................................................................................................... 29
Sample Participants .................................................................................................... 30
Instrumentation ........................................................................................................... 32
Data Collection ............................................................................................................ 40
Data Analysis ............................................................................................................... 41
Chapter 4: Findings .................................................................................................... 46
Description of Course Content and Success Rates ..................................................... 47
Phase One: Quantitative Analysis Findings ............................................................... 49
Summary of Findings in Phase One .......................................................................... 72
Phase Two: Qualitative Analysis Findings ............................................................... 74
Summary of Findings in Phase Two .......................................................................... 83
Chapter 5: Summary and Conclusion .................................................................... 85
Summary of the Study ................................................................................................. 85
Overview of the Problem ......................................................................................... 85
Conclusion .................................................................................................................. 90
Limitations ................................................................................................................. 91
Implications for Theory ............................................................................................. 92
Implication for Educational Practice ................................................................. 93

Recommendations for Future Research ........................................................... 93

Appendix A: Online Adult Learning Inventory .................................................. 96

Appendix B: Modified Adult Learning Inventory (five-point Likert scale) .......... 101

Appendix C: Student Interview Questions ......................................................... 108

References ........................................................................................................... 109
LIST OF FIGURES

Figure 2.1: The components of Technological Pedagogical Content Knowledge       20
LIST OF TABLES

Table 4.1: Success Rates of History and Sociology Students ........................................... 49
Table 4.2: Adult Learning Principle 1 .............................................................................. 52
Table 4.3: Adult Learning Principle 2 .............................................................................. 53
Table 4.4: Adult Learning Principle 3 .............................................................................. 55
Table 4.5: Adult Learning Principle 4 .............................................................................. 57
Table 4.6: Adult Learning Principle 5 .............................................................................. 58
Table 4.7: Adult Learning Principle 6 .............................................................................. 59
Table 4.8: Adult Learning Principle 7 .............................................................................. 61
Table 4.9: Adult Learning Principle 1 .............................................................................. 63
Table 4.10: Adult Learning Principle 2 ........................................................................... 64
Table 4.11: Adult Learning Principle 3 ........................................................................... 67
Table 4.12: Adult Learning Principle 4 ........................................................................... 68
Table 4.13: Adult Learning Principle 5 ........................................................................... 69
Table 4.14: Adult Learning Principle 6 ........................................................................... 70
Table 4.15: Adult Learning Principle 7 ........................................................................... 72
Table 4.16: Frequency of Coded Postings ...................................................................... 76
Table 4.17: Average Postings by Age Group ................................................................. 77
Table 4.18: Responses to Interview Question #1 ......................................................... 78
Table 4.19: Responses to Interview Question #2 ......................................................... 80
Table 4.20: Responses to Interview Question #3 ......................................................... 82
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ABSTRACT OF THE DISSERTATION

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Online learning in higher education has increased substantially over the past five years with community colleges in the forefront of most of this growth. The California Community Colleges System, the nation’s largest higher education system, has increased its online offerings among its 110 colleges. But student success rates for online learning have not matched up to that of the traditional face-to-face class. This study was conducted at a southern California community college with a student population of about 18,000. This study is based on the theoretical framework of adult learning principles. The application of two assumptions of adult learning principles—self-directedness and intrinsic motivation—to online courses is studied in two social science courses. Using the
Adult Learning Inventory developed by Colton (2002), instructional methods based on adult learning principles have been investigated to understand the intrinsic motivation and self-directedness of online learners in the community college setting. This is a multiple-case study design with embedded units of analysis. The study intends to inform online course developers of components toward an online pedagogical construct that addresses adult learners in the community college context.
Chapter 1: Introduction

Since 2001, the growth of online learning accelerated across the nation. According to Allen and Seaman (2007), in their nationwide study of 2,500 colleges and universities, enrollments in online courses have been growing substantially faster than overall higher education enrollments with 3.5 million students taking at least one online course during the fall 2006 term. This shows a 10% increase over the previous year. There was a 9.7% growth for online enrollments which far exceeded the overall 1.5% growth in the higher education student population. In the fall 2006, nearly 20% of all students (17.6 million) in U.S. higher education institutions took at least one online course.

The study also showed that the highest growth rates were in community colleges, accounting for 54% of all online enrollments. This expansion is largely due to available technologies and community college administrators’ desire to increase their student population by increasing access. In the two-year associate’s institutions, academic leaders believe that online education increases access for students and attracts students from outside the traditional service areas (Allen & Seaman, 2007). About 70% of the academic leaders participating in this nationwide survey agreed that the demand for online courses and programs is growing. The continued growth of online education is made evident by academic leaders who have made online education a critical part of their institutions’ long-term strategy (Allen & Seaman).
Context of Problem

In the California Community Colleges System (CCCS), the average (1995-2006) annual growth rate for online offerings in California community colleges is 23% (California Community Colleges System Office, 2007). The California Community Colleges System, the largest system of higher education in the nation, is “comprised of 72 districts and 110 colleges with more than 2.6 million students per year” (California Community Colleges System Office, 2008). Distance education courses are offered by all 110 community colleges in the system. The most recent report from the chancellor’s office shows that distance education courses made up 5.64% (32,417) of the total course offerings of 574,823 system-wide. Between 1995 and 2006, the success rates (completion with a C or better) for online students slowly increased to 57 percent (California Community Colleges System Office Distance Education Report, 2007). That percentage rate has now stabilized at about 54 percent compared to a 65 percent success rate for traditional courses (California Community Colleges Chancellor’s Office Data Mart, 2009). The variance between the two modes, although seemingly insignificant, is important since the success rate for traditional classes has not changed for the past decade or more in California community colleges (California State Chancellor’s Office Data Mart, 2008). In other words, if California community colleges, representing the largest system in the nation, are increasing their online offerings, and, if the popularity of online courses continues to increase, it is important that the success rate be at least that of traditional classes. Otherwise, online courses will not share the same prestige (Barbera, 2004; Chua & Lam, 2007), which is critical for transfer credit to four-year institutions. Hence, this variance becomes considerably wide and an important focus of research.
Community colleges are highly adaptable and change can occur quite rapidly as evidenced by the growth of online offerings (Allen & Seaman, 2008). Community colleges are also positioned to address social justice issues in higher education because of their open door policies. All students have the same opportunity for learning in the California Community Colleges System (CCCS). Students are admitted as long as they meet the age requirement and/or have graduated from high school. The CCCS provides affordable opportunities to all students regardless of previous high school GPA, test scores, etc. The open-door policy attracts a large portion of under-prepared students, low-income students, and English-as-a-second language students. The California community colleges provide a low-cost educational alternative to students seeking two-year degrees and to those who plan on transferring to a four-year institution (California State Chancellor’s Office, 2008). The population of students in community colleges also includes a large proportion of non-traditional students (24 years and older), making up about 43% of the overall population (Bower & Hardy, 2004; Chaves, 2006). Non-traditional students typically have family obligations, work 35 hours or more per week and are financially independent (U.S. Department of Education, National Center Education Statistics, 2002). Online education, particularly for non-traditional students, offers a convenient mode of delivery that accommodates their work schedules and family or personal obligations. Online courses provided by CCCS extend the accessibility of education to these students (California State Chancellor’s Office, 2008). The low success rates reflect the challenges the CCCS faces with the increase in the demand of online offerings.
Purpose of Study and Rationale

This study focused on exploring the mode of delivery used by two professors in their online courses at one community college in California. As the sustained low student success rate indicates, online teaching is not just another mode of delivery but a delivery mode where an investigation into pedagogical constructs is necessary in order to determine why students may not be as successful (Brown, 2002; Muse, 2003). Also of interest is how the online mode of instruction may affect traditional and non-traditional students.

The early pioneers of web-based online instruction found that the new mode of delivery was not for every student. They found that students were not as successful in the online environment as they were in the traditional classroom (Phipps & Merisotis, 1999). Unlike the traditional classroom, there is a lack of social conventions and a separation of time and space in the virtual classroom. The “inherent disembeddedness” of the virtual classroom and the lack of the physical presence of the instructor leave students to individualize their own learning and to create their own social space (Anagnostopoulos, Basmadjian, & Mccrory, 2005). Without the social conventions and physical presence of the instructor in the virtual classroom, students must become self-directing. The successful online student, as identified by the early pioneers, must, therefore, be self-motivated, have good time management skills, and be an independent learner in order to succeed (Phipps & Merisotis). The attributes of a successful online student corresponds to the adult learner identified by Malcolm Knowles (1975).
Knowles’s definition of self-directed learning has been applied to the online learning context and quantitative methods have been employed to measure the positive relationship between self-directed learning and academic success in the online environment (Guglielmino, Guglielmino, & Long, 1987; Hsu & Shiue, 2005; Chou & Chen, 2008). The concept of self-motivation and the independent learner is essentially rooted in Malcolm Knowles’s adult learning theory. Malcolm Knowles (1975), a pioneer in adult education, identified the adult learner as self-directing, intrinsically motivated, an independent learner, and one who brings life experiences and knowledge to the learning environment. Knowles proposed that since adult learners are self-directed, instruction should focus on a different approach that addresses how adults learn. Knowles (1975, p. 18) defines 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.

Based on the concept of the independent adult learner, studies to determine the best teaching method in the online context have been numerous (Colton & Hatcher, 2004; Jaffee, 1997; Ko & Rossen, 2004; Swan, et al., 2000). Collectively, research has shown that well-designed online instruction must provide opportunities for the learner to engage, interact, communicate, and socialize in a virtual setting. Without proper course design that provides for ease of navigation, interactive activities, and instructor facilitation, students may find it difficult to successfully complete the course (Oliver & Herrington, 2003; Koszalka & Ganesan, 2004; Ko & Rossen). Few studies, however, have examined,
in depth, online learners in the community college setting and how they may become self-directed in the online environment (Chou & Chen, 2008; Song & Hill, 2007).

In this study, I investigated the instructional methods that enhance self-directed learning in the online context. I first used a survey instrument to assess whether adult learning principles were applied in two highly successful online courses in the community college setting. Secondly, I used qualitative data to investigate the research questions:

1) How does instructional design (content presentation) and instructional methods based on adult learning principles contribute to student motivation to learn?

2) How is the instructional method of using discussion boards useful in adult learning?

3) What are the key indicators of self-directed learning in adult learners in the community college setting?

To address these questions, an explanatory mixed-method design was used (Creswell, 2005). First, quantitative data were collected using the survey instrument. The quantitative data were analyzed and then qualitative data were collected using discussion board postings and interview responses to help explain the quantitative results. The survey instrument was used to collect data on the application of instructional methods based on adult learning principles contained within the courses studied. Discourse analysis of discussion board postings and responses to interview questions were used to refine the results of the quantitative data gathered from the survey. The study focused on two selected courses at a community college in a large urban city in southern California.
The significance of this study is to further the understanding of the characteristics of self-directed learners and the cognitive strategies they employ to become successful online learners in the community college setting.
Chapter 2: Literature Review

The literature abounds with numerous studies on various aspects of online learning including overarching “best practices” (California State University-Chico, 2003; Chickering & Ehrmann, 1996; Dahl, 2005; Ko & Rossen, 2004). However, this review of the literature will focus on the theoretical framework of adult learning principles and the studies that have been conducted to discover the relationship and application of those principles in the online context. Specifically, the review focuses on studies on self-directed learning and intrinsic motivation in adult learners and how researchers have informed the field of adult learning principles applied to instructional design, interactivity, and instructor facilitation in the online context.

Adult Learning Principles

The growing trend of the popularity of online learning has brought attention to the concept of self-directed learning and adult learning theories and how they might be applied in the online context (Chou & Chen, 2008). Research on adult learning theories and principles reached their primacy in the 1980s as colleges and universities began to see a growing number of non-traditional students (Rachal, 2002). The most notable theorist on adult learning theories and the most widely debated is Malcolm Knowles (Davenport & Davenport, 1985; Merriam, 2001; Pratt, 1988; Rachal). Malcolm Knowles was a professor of adult education whose widely debated theory of andragogy has permeated studies over the last 40 years (Rachal). Knowles’s theory distinguished the adult learner as separate from the child or adolescent learner. The adolescent learner’s role is one of dependency and it is the teacher’s responsibility to determine what is to be
learned, when it is to be learned, how it is to be learned, and if it has been learned (Knowles, 1980). He defined the term *andragogy* as being the “art and science of adult learning” and contrasted it with pedagogy, which, in its basic translation, means the “teaching of children” (Knowles, 1975). Knowles stated that the way a teacher may teach, whether pedagogically or andragogically, would be based on the assumptions about the learner. Where learning is teacher-directed, the assumption is made that the teacher is responsible for how the learner should be taught (pedagogical method). In using the andragogical method, the assumption is that the learner takes on the responsibility for her learning and is self-directed. Knowles (1984, p. 9-10) developed a set of five assumptions about the adult learner:

1) Adults have an independent self-concept of being responsible for one’s own life and are self-directing;

2) Adult learners bring a quality of experience to the educational setting gained from their roles as full-time workers, spouses, parent, and voting citizens;

3) Adults enter educational settings ready to learn when they experience a need to know or do something in order to perform more effectively in some aspect of their lives;

4) Adults enter into an educational activity with a life-centered, task-centered, or problem-centered orientation to learning; and,

5) Adults are best motivated by internal factors such as self-esteem, recognition, better quality of life, greater self-confidence, and self-actualization.
The concept of the adult learner as being separate from the adolescent learner brought to debate the philosophical premise of how learning occurs. Critics espoused that learning is a continuum from childhood to adulthood and that suggesting a dichotomous relationship of each to learning is unfounded (Davenport & Davenport, 1985). In response to the criticism and finding that his concepts were being applied in elementary and secondary schools with a degree of success, Knowles stated that andragogy was simply another model of assumptions about learners that may be used alongside with the pedagogical model. Rather than a dichotomous relationship, Knowles saw pedagogy and andragogy as two ends of a spectrum of learning. He cautioned, however, that once the learner moves away from dependency and is able to be self-directing, the teacher has a responsibility to encourage and nurture that movement toward self-directedness (Knowles, 1980). Merriam (2001), in her research, supported Knowles’s concept of the adult learner and asserted that the five assumptions make the adult learner unique from the child or adolescent learner by virtue of life experiences and the maturity of the learner.

Knowles’s concept and assumptions of the adult learner has garnered more journal citations in the six years since 1996 than most of the field’s other experts on adult learning (Rachel, 2002). Merriam (2001) argued that all theories on adult education stem from the concepts of andragogy and self-directed learning. Education researchers have attempted to develop principles and theories of adult education based on Knowles’ concepts but with no definitive success in the acceptance of one dominant model of how adults learn (Holmes & Abington-Cooper, 2000; Knowles, 1975; Merriam, 2001; Moore,
Rachal concluded that there are many variations and interpretations of andragogy and through his study showed that research measuring its efficacy is elusive at best. Rachal stated that unless there is a consensus of Knowles’s definition of the adult learner, research testing Knowles’ theory would remain fragmented. Of Knowles’s five assumptions about the adult learner, two have been most widely researched: the self-directed learner and intrinsic or internal motivation. These two assumptions have also been most widely applied to online learning (Bye, Pushkar, & Conway, 2007).

Self-Directed Learning

The increased interest in adult learning theories within the past several years may be due to the influx of non-traditional students and to the growth of online learning (Bower & Hardy, 2004; O’Lawrence, 2006). In the mid-1990s, colleges and universities turned to online learning as a viable method of instruction. By 2002, nearly 78% of adult students had taken some format of a distance education course (Allen & Seaman, 2007). The asynchronous nature of online learning lends itself to the assumption of the adult learner as self-directed. In the traditional classroom, learning is focused on the teacher. Merriam (2001), in her editorial in *The New Update on Adult Learning Theory*, credits Tough, building on Houle’s, work for comprehensibly describing self-directed learning in his study. The pioneering work of Houle, Tough, and Knowles gave widespread documentation of self-directed learning in adults (Merriam). According to Knowles (1975), it is the role of the teacher as “content transmitter” to decide on the form of content transmission (i.e., lecture, assigned readings, and/or audio-visual presentations).
as part of the pedagogical process. In self-directed learning, however, the student is involved in his/her learning through participatory decision-making in diagnosing his/her needs, setting goals, designing a learning plan and learning activities, and self-assessment. The instructor becomes a facilitator, who, through this process, designs and facilitates the acquisition of content (as opposed to transmission of content). Students engage in group discussions about the content to derive common meanings and understandings while the instructor facilitates their discussion when necessary (Knowles).

In the online environment, Knowles’s model works well because students and instructors are separated by time and space, which requires a student to be independent and self-directed in the physical absence of the instructor (Jaffee, 1997). Song and Hill (2007) investigated motivation and self-directed learning (SDL) to develop a conceptual model that may be applied to the online environment. They chose and described three comprehensive models developed by Candy, Brockett and Hiemstra, and Garrison. The perspectives outlined in their models include:

1) Personal Attributes: personal autonomy, self-management, goal orientation, and motivation.

2) Process: learner control, process orientation, and self-motivating;

3) Context: self-direction is context-bound and social context and the role of institutions and policies (cost, procedures, deadlines, and scheduling).

Song and Hill explained that these models were developed for face-to-face instruction and there is a need to investigate the impact of SDL in an online learning context. Using
these models as a foundation for online learning, Song and Hill developed a “Conceptual Model for Understanding Self-Directed Learning.” Their model shows the interaction between personal attributes and processes in self-directed learning and the context of the learning environment. Personal attribute refers to the learner’s motivation, responsibility, resource use, and cognitive strategies. Process refers to the learner’s autonomy and control in planning, monitoring and evaluating, while context focuses on the environment and its impact on self-direction. The learning context may be in any mode of delivery (on-campus or online). Song and Hill’s model reflects how the learner’s prior knowledge contributes to personal attributes in the processes toward self-directed learning. Learners bring these attributes to the learning context and to the structure of the learning context, resources, and the nature of tasks along with instructor feedback and peer collaboration that results in appropriate outcomes. The online learning environment or traditional classroom environment influences the amount of control of the learner and it impacts the level of the learner’s self-direction. Using this model, Song and Hill concluded that understanding how adult learners adapt to the level of control placed upon them in the online environment can assist the instructor in the development of course activities.

In the online environment, students have a higher level of control over their planning, monitoring, and evaluating their learning processes. In the absence of a physical classroom and instructor, students take their own initiative to enter the virtual classroom and do the assigned tasks but the level of motivation or locus of control to engage in in-depth cognitive thinking is a key indicator for success (Song & Hill, 2007). Parker (2003) tested the theory that “locus of control, or the level of self-motivation, is
significantly correlated with academic persistence” (p. 53). Parker’s research investigated the level of the locus of control that students achieved while taking online courses. Her results showed that online students became more internal or self-motivated than those in traditional face-to-face courses. A well-designed online course that allows students to be self-directed will give students the locus of control necessary for academic success. She concluded that, although her results cannot be generalized to all online courses, the results of her investigation did show a correlation between locus of control and academic persistence. Levy (2007) investigated Parker’s conclusions by using a larger sample size. His study focused on student satisfaction and academic locus of control. Using the same instrument as Parker, Rotter’s Academic Locus of Control, Levy found that the academic locus of control in his study was not a major indicator of the students’ decision to drop from an e-learning class. He found, instead, that students’ satisfaction with the e-learning environment played a major role in the students’ decision to complete the course (Levy). Levy also found that the level of academic status also contributed to the non-completer rates. Students in lower academic status tend to drop e-learning courses more frequently than those who are more experienced and have attained a higher academic status. The limitations of his study, where there was a large range of subjects and student majors, may have contributed to the distortion of his findings of the locus of control playing a less significant role in students’ persistence (Levy).

**Self-Motivation**

To facilitate self-directed learning, online instructors need to reinforce students to become continual learners. Through problem-solving and cognitive strategies students are
encouraged to persist in learning activities (Ponton, Derrick, & Carr, 2005; Schrire, 2006). Ponton et al., suggested that autonomous learning is a subset of the attributes associated with self-directed learning and that there is a causal relationship between individual resourcefulness subscales and persistence. Autonomous learning is a characteristic of the learner who exhibits actions in learning activities and includes personal initiative, resourcefulness, and persistence. While adults exhibit persistent behaviors in learning activities, they may not “actually choose learning activities over non-learning activities” (p. 126). Instructors need to increase students’ awareness of the implications of activity choices and the expected learning outcomes. As a facilitator, the instructor must find ways in which to engage the adult learner and reinforce cognitive strategies for students to persist in learning (Ponton et al.).

When intrinsically motivated to learn, adults want to continue to learn (Wlodkowski, 1985). The adult learner is motivated by internal factors rather than external (Knowles, 1984). Intrinsic or internal factors for motivation in adult learners promote psychological well-being through personal accomplishments and self-esteem (Bye, Pushkar, & Conway, 2007). Bye et al. used the Motivated Strategies Learning Questionnaire developed by Pintrich, Smith, Garcia and McKeachie to examine the intrinsic and extrinsic motivation levels of traditional (21 and younger) and non-traditional students (28 and older). Their findings showed that both age and interest of the adult learner were significant indicators of intrinsic motivation. Extrinsically motivated learners seek approval and external signs of worth, while intrinsically motivated learners seek personal fulfillment. Non-traditional students showed a higher level of intrinsic
motivation to learn than traditional students. The non-traditional or intrinsically motivated learner persists when academic tasks are autonomous, challenging, interesting, and promotes mastery of the subject while fulfilling their need for personal accomplishment. The study showed the positive effect of the interaction of age and intrinsic motivation to learn (Bye et al.).

**Instructional Design**

The success of the online learner, while largely dependent on self-motivation and the ability to self-direct learning, is also dependent on a well-structured course. The presentation format and design-based activities of online courses play a significant role in student learning (Ko & Rossen, 2004; Levy, 2007; Parker, 2003).

Student satisfaction with the online learning environment as shown by Levy (2007) is one of the key indicators of persistence and success. A well-designed course includes content presented in an uncluttered, logical flow and the ease of navigation through the content. Most institutions of higher education have adopted web-based course management systems to assist in the development of online courses. Course management systems (CMS), such as Blackboard, Moodle, and WebCT, and Internet courses comprise about 95% of the delivery mode for distance education (U.S. Department of Education, National Center for Educational Statistics, 2003). CMSs provide secure access to course materials, assignments, and grades. They also provide a variety of tools and templates that may be used easily and quickly to present online instructional materials. CMSs with built-in tools such as discussion boards and email, and standard formats of design provide
an automated ease in which instructors may develop a course but attention to pedagogical methods and learning styles have not been the focus (Koszalka & Ganesan, 2004).

The separation or “disembeddedness” of the instructor and student poses challenges for the online instructor (Anagnostopoulos et al., 2005). Merely translating a face-to-face (F2F) course, where lectures and assignments are posted on the Web or within a CMS, takes the form of a narrative where students are led through a learning sequence similar to that of the lecture in the classroom. The result of such a design is that learning opportunities afforded by the new technologies are not taken advantage of and materials presented in this way appear to be electronic forms of didactic lectures that leave the students to make meaning of the text (Oliver & Herrington, 2003).

Course management systems have features such as threaded discussions and postings that may be used effectively to produce a learning environment that promotes student success (Brinkerhoff & Koroghlanian, 2007; Malikowski, Thompson, & Theis, 2007; Schwartzman, 2006). But without a solid framework based on some defining principles, the construction of the course will be haphazard at best. Hara and Kling (1999) found in their case study that students were frustrated with course designs that impeded their learning experience. Lack of prompt feedback from the instructor, ambiguous instructions, and technical problems were main sources of frustration. Oliver and Herrington (2003) suggest that online activities be designed using the constructivist approach to learning. Their three-stage design process includes: 1) tasks to engage and direct the learner in the process of knowledge acquisition and development; 2) support for the learner to scaffold the learning and to provide meaningful forms of feedback; and,
3) learning resources needed to successfully complete the set tasks and to facilitate the scaffolding and guidance. Using these strategies, knowledge may be constructed through exposure of various resources that students choose from while being guided and reinforced by the instructor.

While designing a course using the constructivist approach to learning is desirable, cognitive load must be “systematically determined on the basis of mental-effort and performance measures” (Paas & Van Merrienboer, 1994, p. 369). Paas and Van Merrienboer (1994) concluded in their study that an interrelationship exists between instruction and cognitive load. When instructors are aware of cognitive load and its impact on learning, instructional strategies then may adapt to performance efficiency. Students become frustrated when they are unable to access course materials or do not understand how the course is designed. In addition to learning the subject material, poor navigation within an online course may pose a cognitive overload. In other words, online course design should be transparent so that students’ attention is not misdirected to navigation of the course materials, but instead, directed toward content learning. A consistent, simple, and transparent structure is conducive to learning (Paas & Van Merrienboer).

The interface or the design and platform/browser that students interact with in order to make meaning of the course has to be transparent. Course materials must be well-structured, consistent, and clear in order for learners to learn without having to negotiate meaning (Swan, 2004). Koehler and Mishra (2005) proposed a framework that assists teacher’s understanding of the complexity of the interplay between technology,
content, and pedagogy as a *knowledge system* which they termed Technological Pedagogical Content Knowledge (TPCK). In their model as illustrated in Figure 2.1, considering P and C together will produce pedagogical content knowledge and similarly, considering T and C together will produce technological content knowledge. These types of considerations are typical of the approaches used by online instructors. For instance, an instructor in a traditional classroom may know pedagogy and content but may not know how to integrate them using technology within a CMS. The researchers argued that all three elements must be considered within the knowledge system in order for true technology integration to occur in online learning. The conceptualization of the integration of technology within a knowledge system is significant as technology creates a shifting of the paradigm of accepted pedagogical methods for traditional courses when applied to online environments. Accordingly, before instructors begin developing their online courses, they must first fully understand the relationship of the technology to pedagogy and content. Koehler and Mishra advocate that using a “learning by design” approach will help instructors understand the complexity of the interplay among the three components. Learning by design takes into consideration the nature of the student interaction with course content and how technology may be used to accomplish course goals. A well-designed course is user-friendly and the use of technology must fit with the course content and pedagogy.
Figure 2.1: The components of Technological Pedagogical Content Knowledge\textsuperscript{1}

\textsuperscript{1} From http://tpack.org
**Interactivity**

In addition to understanding the framework of TPCK as outlined by Koehler and Mishra, online course developers, as they design their courses, must consider learning activities that are meaningful and relevant (Ko & Rsssen, 2004). In their study, Anagnostopoulos et al. (2005) observed an online course led by Anagnostopoulos and Basmadjian where Web postings and WebTalk texts were analyzed. The authors hypothesized that the two types of forums (asynchronous and synchronous, respectively) would provide for different opportunities for students and instructors to construct social space in the virtual classroom. Questions were posted to encourage participation and responses were analyzed. They used the proposition as their unit of analysis where proposition is defined as a statement about one idea, opinion, or emotion that included a claim that could then be elaborated upon or supported. The researchers analyzed texts from discussion postings and WebTalk (online synchronous chat). Their conclusions identify the discursive processes by which students may marginalize or decentralize the teacher indicating a student-centered learning environment. They concluded that meaningful discourse amongst their peers gave students greater satisfaction in learning while the instructor played a less significant role in student learning.

Meaningful online discourse, as defined by Jones (2006) is “discourse that has meaning, function and/or purpose and engages others in verbal expression (speech or writing) and is open to inquiry and multiple perspectives” (p. 4). In a study of online instructors, Jones found that instructors could not define “meaningful” discourse beyond responding to email and mediated online communication. Jones’s study showed that of
the 57 instructor participants, 60% could not define “meaningful” discourse and overall, participants did not understand the importance of meaningful online discourse. Without meaningful discourse, online instructors as well as students will become frustrated thus impeding the learning process. Jones concluded that instructors need a clearer definition of “meaningful” online discourse as meaningful discourse drives students’ learning.

Jaffee (2003) asserted that interactivity through active participation in online discourse is critical to the virtual classroom. Schwartzman (2006) suggested that a viable interactivity in the online environment was to use threaded discussions in group-work to problem-solve. In his study, he observed his class over a four-year period and concluded that applying sequential problem-solving steps within the threaded discussion showed a higher student outcome. Brinkerhoff and KoroGHlanian (2007) did a study on the most desirable features of an online course using a course management system. Their study showed that participants confirmed Schwartzman’s assertion that threaded discussions were, indeed, an effective means to learn.

Doo (2005) hypothesized in his study that presentation format is important for the processing of information and interactivity. Doo stated that the level of difficulty and the interactivity among elements in the materials may require the learner to acquire several elements concurrently, thus creating a high cognitive load. Instructional design that gives the learners appropriate amounts of information and takes into consideration visual and auditory information presented in the online environment makes for a well-designed course. Although his study did not show a significant difference in learning outcomes using one form or another (video, text, audio, and pictures plus audio), he did conclude
that more research is needed in this area to examine the “effects of three possible moderating variables of the relationship between model presentation formats and learning outcomes: learning contents, situations, and prior knowledge” (p. 232).

**Instructor Facilitation**

The instructor’s role as facilitator encourages “learners to discover principles of knowledge on their own and then help translate information into content that learners can understand, thus enabling them to acquire additional knowledge” (Blondy, 2007, p. 117). When applied in the online context, the instructor’s role as facilitator does not necessarily mean that the instructor becomes a “silent” participant only to make his/her presence known when necessary. In order for meaningful experiences that contribute to student learning and retention to occur, there must be learner-instructor interaction (Yoon, 2003). Weisskirch and Milburn’s (2003) study confirmed that instructor-student interactions in discussion board activities had an impact on higher grades. In their study of 3,125 postings by students in 15 classes, they found that the frequency of messages that were directed to faculty “significantly predicted overall course grades, while the frequency of general, non-directed messages and of peer-to-peer messages did not” (p. 223).

The asynchronous environment of online courses allows for students to read peer postings, reflect on them, and then to respond. The results of a study involving 1,406 respondents done by Swan et al. (2000) showed that students tend to feel a greater satisfaction with their online courses if a larger percentage of their grade was based on discussion board participation. And, where the larger percentage of the grade was based on collaborative or group-work, students felt they learned less from the course. Swan et
al. concluded that a social constructivist design applied to online course design in discussion board activities enhanced student satisfaction and learning. Through active discussion, “meanings are agreed upon, ideas negotiated, concepts evolved, knowledge constructed” (p. 380). They conclude that there are three factors which contribute significantly to a successful online course: transparency of the interface, instructor interactivity, and active discussions. Similarly, Jaffee (2003) and Oliver and Herrington (2003) concurred that constructivist learning may occur if the design of the course includes interactivity, tasks that engage and direct the learner, and mediation. Roblyer and Wiencke (2003), through their research, developed a rubric that assesses and encourages interactivity in online courses. The rubric applies theory to practice and is based on constructive learning. They concluded that interaction is achieved through a “complex interplay of social, instructional, and technological variables” (p. 85) and that student engagement increases when activities are structured around collaborative experiences.

The responsiveness of the teacher via online communication tools such as chat or email help to create a social presence in the online environment (Jaffee, 2003; Anagnostopoulos et al., 2005; Jones, 2006). Kitsantas and Chow (2005) compared students in the traditional classroom with those in online courses. They found that students in the online environment appeared, because they felt less threatened, to be more comfortable in responding to each other and to the instructor than in the traditional face-to-face classroom. Students who seek assistance are highly correlated with student achievement and are an important self-regulatory strategy (Kitsantas & Chow, 2005).
The study implicates that Web-enhanced and distance-learning environments facilitate help-seeking behaviors more than traditional classroom environments because of the reduced threat, higher quality of inquiry, anonymity, convenience, and easing of temporal demands inherent in online courses.

Adult learning principles and constructivist theories, when applied to content presentation and assignments, may signify a more appropriate approach to online pedagogy (Doo, 2005; Jaffee, 2003). The concept of the adult learner as self-directed and internally motivated has implications for the construct of online pedagogy. As the literature shows, the framework pieces for a new pedagogical construct includes: self-directed learning, constructivist learning, learner-centered tasks, interactivity, threaded discussions, and instructor facilitation through meaningful discourse.
Chapter 3: Methodology

California community colleges have increased their online offerings but its statewide student success rates in online classes have not reached the same level as traditional classes. Instructors have taken advantage of course management systems in the development of online courses and some have implemented rubrics and matrices that help guide the development of online courses (California State University-Chico, 2003; Colton & Hatcher, 2004; Ko & Rossen, 2004; Roblyer & Wiencke, 2003). There are no rubrics or matrices, however, which effectively address the application of adult learning principles in the online context. Colton’s (2002) Online Adult Learning Inventory instrument is the only one found through a thorough search that assesses adult learning principles applied in online courses.

Purpose of the Study and Research Questions

The purpose of this study was to investigate whether the Adult Learning Inventory was effective in measuring the application of instructional methods based on adult learning principles in the online context and whether the instructional method of using discussion boards was useful in enhancing self-directedness in the adult learner. Online learning gives control to the learner to create their own learning space, pace, and sequence. This flexibility, while giving more freedom to the student, also requires self-regulation (Song & Hill, 2007). Song and Hill examined the learner’s perspective in taking control of their learning environment, which resulted in six suggestions for further research:
1) What are some of the self-directed learning (SDL) attributes that are unique in online learning?
2) What are some of the online learning SDL attributes that are similar in other learning contexts?
3) How do learners motivate themselves in an online learning context?
4) How do learners use resources and cognitive strategies to enhance their online learning experience?
5) How does a learner become motivated in a SDL context that requires high level of learner autonomy?
6) How does a highly self-directed learner become motivated to learn in a structured learning context where she or he does not have a lot of power?

Building on Song and Hill’s recommendations, this study focused on the application of adult learning principles in instructional design, the use of discussion boards as an indicator of self-directed learning, and intrinsic motivation for completion of the online course. This study specifically addressed the following research questions:

1) How does instructional design (content presentation) and instructional methods based on adult learning principles contribute to student motivation to learn?
2) How is the instructional method of using discussion boards useful in adult learning?
3) What are the key indicators of self-directed learning in adult learners in the community college setting?

**General Design and Rationale**

“An explanatory mixed methods design consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results” (Creswell, 2005). In this study, both quantitative and qualitative methods were used. In the first phase of the study, a survey was conducted using the Adult Learning Inventory developed by Colton (2002), which measures the application of instructional methods based on adult learning principles. The results were analyzed and measured against the results of the discourse analysis of discussion postings and interview questions in the second phase of the study. In the explanatory mixed-methods approach, “quantitative results provide a general picture of the research problem and more analysis, specifically through qualitative data collection, is needed to refine, extend, or explain the general picture” (Creswell). A qualitative case study is defined by Yin (2003) as an “empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p. 13). A multiple-case study with embedded units of analysis was used. Four courses or cases were examined as well as the participants within the courses (embedded units). The multiple-case study is more robust and the underlying logic is to predict similar results among the cases.

This study is based on the theoretical framework of adult learning principles. The application of two assumptions of adult learning principles, self-directedness and
intrinsic motivation, to online courses was investigated. These two assumptions form the proposition that adult learners are intrinsically motivated and activities leading toward self-directedness will lead to student success. A course design that includes learner-centered tasks, relevant activities, and instructor facilitation is also presupposed as contributing to the success of student learning.

Site Description

The study was conducted at a community college (CCD used as a pseudonym) in Southern California. The student headcount is currently at 18,000. In spring 2008, there were 6,281 non-traditional students (24 years and older) enrolled, an increase from 5,905 in spring 2007 (California State Chancellor’s Office Data Mart, 2009). In spring 2009, the non-traditional enrollments increased to 6,770 as people sought re-training and to further their educational résumé largely due to the economic downturn in late 2007. The increase in enrollments in the community colleges reflects the state’s economic status (Chronicle of Higher Education Almanac, 2007). CCD’s demographic is similar to other large, urban community colleges with non-White students making up about 42% of the population and females about 58%. CCD is representative of community colleges across California. Like the state-wide average, CCD online courses have a 54% success rate (completion with a C or better passing grade) while traditional face-to-face courses are at 62-65%. And, as with other community colleges in the state, CCD has increased their online offerings tremendously (64%) over the past decade (California State Chancellor’s Office Data Mart, 2008).
Sample Participants

This study focused on successful online courses in order to assess student activity and course design. The top 10% of successful courses taught in the fall 2008 and subsequently scheduled to be taught in spring 2009 were identified. There were 29 subject areas offered online with 109 course levels taught in the fall 2008. Of these subject areas, courses were identified that met criteria using a purposeful sampling approach (Creswell, 2005). The criteria for selecting courses for this study were:

1) In the fall 2008 offering, 62% of the students completed the course with a C or better or Pass/No Pass (62% to match the average success rate of traditional classes);

2) Course content must be instructor-developed as opposed to textbooks developed by the publisher for online learning as the content would reflect the expertise of the instructor and his/her methodology of content presentation;

3) Courses identified from the fall 2008 offerings were offered in the spring 2009 semester;

4) Courses had an enrollment of at least 30 students.

5) The course had to meet the 2008-2009 California State University General Education requirements for transfer.

Fall 2008 offerings yielded 17 courses from subject disciplines including history, English, sociology, anthropology, child development, communication, and psychology. All courses satisfied the 2008-2009 California State University General Education requirements for transfer and met academic rigor. In order to gain the required sample
size of 30 or more enrollments, the English courses were eliminated. Two anthropology courses were eliminated as they were not offered in the spring. The child development and communication courses were eliminated since the content was not instructor developed. The psychology course met the criteria but the instructor declined to participate. The selection process resulted in two courses in two different subject areas: History 108 and Sociology 120.

There were three sociology sections taught by the same instructor and the same course content was used. The spring 2009 semester was the second semester the instructor taught online. The course, taught on Blackboard, was divided into modules, each addressing sociological topics that students explored through readings from a textbook and viewing video clips. The instructor gave an introduction and summary of the topics and instructions on completion of the assignment, readings, and viewing video clips. The students were assigned into four groups for each section for a total of 12 groups. Students were required to respond to the discussion questions and to post responses to three other members of their assigned group. Discussion postings counted 20% toward their final grade.

There was only one section for the history course and it was taught by an instructor with more than nine years online teaching experience. The instructor used WebCT as his course management system. The digital text was linked in WebCT to an outside website. The history instructor co-authored the digital book specifically for his online classes and divided the readings into eight sections. The text included many links to other resources available electronically as well as video clips. The digital textbook was
a culmination of his many years of teaching history and designed for the online
environment. Students were required to submit eight papers on selected topics,
accounting for 55% of their final grade. In addition, there were two Webquest
assignments (students searched the Internet for sites that addressed topic areas assigned)
and two exams. The instructor gave introductions to the topic and included instructions
for the completion of each one. The bulletin board was used mainly for the posting of
assignments by the instructor. Students submitted their assignments in the “drop-box”
and posted papers on the bulletin board when required. The discussion board was not
used for peer-to-peer exchanges. Communication was predominantly between individual
students and instructor via the bulletin board and email.

The difference in the use of technology by the two instructors presented a wider
range of feedback from the students who participated in the survey and interview
questions. Discourse analysis was done using discussion postings from the sociology
class only since the history teacher did not make full use of that feature in the course
management system.

Instrumentation

Extensive research into adult learning principles and self-directed learning by
Colton (2002) produced an Adult Learning Inventory that when used, assesses
instructional methods based on adult learning principles in online courses. Other
instruments found assessed the learner’s motivation and readiness to take an online
course (Guglielmino et al., 1987; Roblyer & Wiencke, 2003), whereas, Colton’s
instrument was the only one that measured the application of adult learning principles
within the design of the online course. The ALI instrument was developed to synthesize andragogical, instructional design, and adult learning principles. In a joint paper submitted by Colton and Hatcher (2004) (Hatcher was Colton’s dissertation director), the authors explained that the implementation of the ALI is to discover examples of “specific instructional methods and techniques that demonstrate the application of adult learning principles to fully-mediated World Wide Web-based distance education courses or training” (p. 1067). The instrument is divided into seven sections; each section addressing an adult learning principle developed by a Delphi panel of experts and grounded in Knowles’s (1975) adult learning principles. Each of the seven sections included a sub-scale of items relating to the instructional methods that are appropriate to apply to address the learning principle. The sub-scales were the measurement of the instructional method applied to address the adult learning principle (Appendix A). The seven sections and instructional methods included:

Section A: Adult Learning Principle 1 (Motivation):

Adults’ orientation to learning is problem-centered. Thus, they are motivated to learn and ready to learn to the extent that they perceive learning will help them perform tasks or deal with problems that can relate to their life situations.

Sub-scale:

- Assignments incorporate activities to which you can relate to real life situations or events;
- Content and theory are presented in practice-oriented context;
• Opportunities are included for solving problem in groups;

• Assignments reflect the maturity level of adult learners;

• Students are encouraged to apply their life and work experiences to learning;

Section B: Adult Learning Principle 2 (Motivation):

Adults need to know what learning will occur, how learning will be conducted, and why learning is important.

Sub-scale:

• An online syllabus identifies key course activities, assignments, and grading criteria;

• Clear expectations are set for the course;

• Clear expectations are set for each learning unit;

• Clear expectations are set for how projects or papers are to be completed;

• Models of “best practice” behavior are provided in order to let students know what they are doing compared to a known model;

• Information is provided about the course’s intended learning outcomes and benefits;
• Information is provided about the skill and technical requirements for the course;

• At the beginning of each lesson, learners are oriented to the objectives or central focus of that lesson;

• At the beginning of each lesson, a summary of the required activities is presented;

• Assignments reflect the maturity level of adult learners;

• Students are encouraged to apply their life and work experiences to learning.

Section C: Adult Learning Principle 3 (Self-Directed Learning):

Adults come into an educational setting with a wide range of experiences, which can serve as a basis for new learning.

Sub-scale:

• If students are not familiar with each other, the class is opened with introductions;

• Assignments encouraged students to share and reflect upon their prior experiences;

• Course assignments allow students to incorporate their prior knowledge into their learning;
Guidance is provided to help students incorporate their life and work experience into learning;

Section D: Adult Learning Principle 4 (Self-Directed Learning):

Because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in order to adopt alternate ways of thinking.

Sub-scale:

- Orientation activities are provided at the beginning of the course that allow learners to develop the skills necessary to complete the course (e.g., “introduce yourself to the discussion forum,” “send me email saying you were able to log on”);

- The instructor of the course encourages all students to post response to questions, read other comments, and reflect. (Threaded discussions allow students to see and reflect on each other’s responses in comparison to their own, which has an enormous benefit in assessing different attitudes);

- The course provides a conceptual framework that helps learners to develop new conceptual frameworks or mental models;

- The instructor uses common language characteristics between old and new models or concepts and introduces new jargon appropriately;
• Students are encouraged to share with other students their derivation of meaning and their progress through discussion postings, reflection papers that are posted, or email.

Section E: Adult Learning Principle 5 (Self-Directed Learning):

Adults have a self-concept of being responsible for their own decisions, for their own lives, and their own learning. They need to be provided the tools and opportunities for independent, self-directed learning.

Sub-scale:

• The course is designed to allow students to direct their own learning;

• The instructor provides organizers that allow students to manage study and homework with minimal questions;

• The instructor provides flexibility in assignments that allow for students to work ahead;

• The instructor encourages and reinforces self-sufficiency through timely feedback.

Section F: Adult Learning Principle 6 (Self-Directed Learning):

In any group of adults there will be a wider range of individual differences, thus the individualization of learning experiences is important in many situations.

Sub-scale:
• A variety of instructional methods and media are used to meet the differing needs and learning styles of the students;

• Students can move through the instruction at their own pace;

• Students can review previous learning whenever they want;

• The instructor is available to coach students or to suggest outside mentors;

• The instructor provides links to a wide variety of web resources;

• Students with different levels of computer skills and resources can succeed in this course; the course conforms to accessibility requirements;

• Ample time is allotted for students to master the content.

Section G: Adult Learning Principle 7 (Self-Directed Learning):

Situational differences, or the context of the learning environment, impact the learning process of adults.

Sub-scale:

• Support services are available in this course to meet student needs. (They may include the following services: textbook purchasing, library services, disability services, admissions, enrollment, and transfer of credit);

• The psychological climate of the course is conducive to learning. It suggests to the student that the learning activity is going to be rewarding and positive;
• The screen is easy to read;

• Directions are easy to follow;

• The learning resources in this course can be personalized;

• Students work in small groups;

• The instructor has a procedure for determining each student’s support structure in order to find ways to supplement that support structure, if asked;

• Back-up assistance is available to students outside the major communications media used for this course (800 number, help desk, etc.).

Colton (2002, p. 1) states, “The reliability statistics, the average measure intraclass correlation, gave a range from .8018 to .9360 from a field test, indicating moderate to high positive values for inter-rater reliability.” The field test consisted of 14 faculty members who used the draft instrument to evaluate a specified instructional website representative of a college Web-based course. The comments derived from the field test led to further revisions of the instrument and after revision, the instrument received consensus among the panel of Delphi experts. Colton used the checklist format instead of a Likert scale with the intention of using the instrument as an inventory of the application of adult-learning principles. According to Colton, a checklist records the presence or absence of the principle and would allow the user to use a deductive strategy in determining the construction of the content. In a pilot test of the instrument by the
researcher of this study using seven randomly selected online courses offered in the previous semester, it was found that a “yes” or “no” check off did not fully result in any comprehensive evaluation of the courses. For the purposes of this study, the ALI was modified to include responses on a five-point Likert scale: strongly disagree (1), disagree (2), agree (3), strongly agree (4), and don’t know (0), in order to compute scores and to use the instrument as a measure of effectiveness of the application of adult learning principles in the construction of the course content (Appendix B). The “don’t know” responses were scored as “0” and included in the calculation of the mean and standard deviation. Since the frequency of the “don’t know” response was low, the inclusion of those responses in the calculation of the mean and standard deviation made very little impact to the resulting outcomes.

Data Collection

Phase One--Quantitative data collection.

The modified ALI survey was administered to course instructors and students near the conclusion of the spring 2009 semester. The survey was administered using a Web-based survey on Survey Monkey. The link was emailed to each participating instructor and survey links for students were sent via the instructors within the course system. The survey was voluntary and participants remained anonymous unless they volunteered to participate in a follow-up interview. In order to take part in the interview, participants provided contact information (included in the survey) in order to schedule and conduct the interview by email. There were 146 possible respondents with six
declining to participate. Of the 140 possible participants, 64 returned the surveys. Both instructors also returned the surveys.

**Phase Two--Qualitative data collection.**

An email with interview questions was sent out to all 64 participants. There were 11 participants responding to the online interview (Appendix C) with at least two respondents from each course/section. The interview questions were intended to help clarify findings in the ALI survey that addressed the research questions. Discussion postings of 8 of the 11 participants were used in the discourse analysis; these eight participants were from the sociology course. The three remaining participants were from the history course where the discussion board was not used for discussions but instead used for assignment posting.

**Data Analysis**

**Phase One--Quantitative data analysis.**

The results of the survey were analyzed using SPSS 17.0. The ALI was used to evaluate the presence of instructional methods based on adult learning principles as perceived by the respondents and to address the first research question, “How does instructional design (content presentation) and instructional methods based on adult learning principles contribute to student motivation to learn?” A descriptive analysis was used for each of the sub-scales of instructional methods. The total number of students in the three sociology classes was 116 of which 47 responded to the survey or a 47.61 % response rate. The respondents from the history class numbered 17 out of 30 or 56.7%. Due to the low response rates, the Kruskal-Wallis (non-parametric statistics) test was run
to determine the significance between groups in the sociology classes. The test resulted in values greater than .05 indicating “no significant differences” between the groups. The sociology classes were then treated as one case rather than three separate cases and descriptive analysis included the combined courses. This study compares the findings of two cases: Sociology 120 and History 108.

Phase Two--Qualitative data analysis.

After the quantitative data were collected, interview questions were sent to the 64 participants from the survey. Relying on the responses from the interview questions provided a convenient purposeful sampling for the discourse analysis. There were eight students from the sociology class and three from the history class for a total of 11 students who returned the questions. The discussion postings of the eight sociology students were used for the discourse analysis. There were three respondents to the interview questions from the history class but since the discussion board was not used, discourse was not available for analysis. The discourse analysis was used to address the second research question, “How useful is the instructional method of using discussion boards in adult learning?” A coding schema was developed to analyze the discussions postings. Using a coding schema allows for the identification of words, phrases, or sentences and the significance of meaning (Miles & Huberman, 1994). The text was coded according to indicators of self-directed learning as identified by Knowles (1975) and Colton (2002). The discourse analysis was used to assess the way in which respondents participated in the discussion board that indicated self-directed learning. Text was coded according to the following schema:
1) Prior knowledge: Adult learners bring a quality of experience to the educational setting gained from their roles as full-time workers, spouses, parent, and voting citizens.

The text was coded for prior knowledge when the participant used his/her previous knowledge to contribute to the discussion. When a participant drew from his/her prior knowledge gained from employment, parenting, or societal roles, the text was coded as prior knowledge. For example, a retired law enforcement officer in response to a classmate’s comment that marijuana users should be rehabilitated and not sent to jail, used her prior knowledge to add to the discussion, “Marijuana is a misdemeanor, and unless you’re under the influence or selling it, you don’t have a sentence for it.” The student drew from her prior experience and the knowledge gained from that experience to dispel pre-conceived notions that the other students had with regard to jail sentencing for possession of marijuana in small amounts.

2) Prior experience: Adults come into an educational setting with a wide-range of experiences which can serve as a basis for new learning.

When a participant brought up their past experiences, the text was coded as “prior experience”. One student who is a naturalized citizen commented on illegal immigrants and how unfair it is that they receive free medical services:

A legal immigrant who pays taxes, I had fewer rights than illegal immigrants who I had to support. For example, I got pregnant, did not have health insurance, our income was at the medium level, so we had to pay a full amount for medical services provided.
Here, the student is relating to an experience she had that illustrates how an illegal immigrant has benefits that exceeds hers as a naturalized citizen.

3) Problem solving: Adults enter into an educational activity with a life-centered, task-centered, or problem-centered orientation to learning.

Text was coded as problem solving when the participant offered some solution to the topics raised in the discussion. The solution to the topics included generalized statements based on their knowledge and experience. The response from one participant to the problem of poverty in this country was to educate and provide healthcare for the poor stated, “To start the war of fighting poverty, the development of people’s skills via education, and, in the case of the destitute poor, improving people’s health is essential.” The generalized statements indicate the thought processes of the student in understanding the problem by offering problem-solving strategies.

4) Reflective observations: Adults enter educational settings ready to learn when they experience a need to know or do something in order to perform more effectively in some aspect of their lives.

Reflective observations were coded when participants responded self-reflectively as in the comment on factory farms that use hormones for growth and antibiotics because animals live in such closed quarters that disease spreads among them, the student responded, “That’s what scares me the most—I love meat, but at what cost will the hormones, etc., affect me and my family in the future?” When a participant responded
inwardly and related the topic to their lives, the text was coded as reflective observation which indicated a deeper consideration of the newly acquired knowledge.

Discourse representing answers to the discussion questions were coded as propositions as the posted text fulfilled the requirement of the assignment. The propositions were summaries of the readings/video clips and expressed the students’ understanding of the topic and not used for analysis. In order to deepen the understanding of the application of adult learning principles, only discourse exchanges between students were coded and used for analysis. The peer to peer exchanges served to discover how students brought in their prior knowledge, prior experience, problem-solving, and reflective observations to their learning as indicators of motivation and self-directed learning. Responses from the 11 participants in the email interview combined with the discourse analysis were used to address the third research question, “What are the key indicators of self-directed learning in adult learners in the community college setting?” The responses were also used to help clarify and triangulate the analysis of the survey and the discourse analysis addressing the second research question.
Chapter 4: Findings

The purpose of this study was to investigate instructional methods based on adult learning principles and how they might contribute to the success of adult online learners in the community college setting. This study also focused on indicators of self-directed learning in traditional and non-traditional student performance. Two courses were surveyed: History 108 and Sociology 120. Both courses met the California State University transfer requirement and have a high student success rate. The two courses in this study also met the criteria for selection as stated in Chapter 3. Since the average success rate of online students in the California Community Colleges System is 54% compared to traditional classes at 65%, this study purposefully focused on successful courses to discover components of a successful online course. Both courses were highly successful with a combined average success rate of 67% (student passing with C or better) in the previous semester and proved to be more successful in the semester of this study.

In this discussion of the findings, I have first provided a more detailed description of each of the courses studied and student success rates for each. Secondly, I discuss results from each phase of the two-phase design used in this study. This study was a two-phase design using both quantitative and qualitative methods. In Phase One, a survey instrument, the Adult Learning Inventory (Colton, 2002), was used for quantitative analysis in response to the first research question, “How does instructional design (content presentation) and instructional methods based on adult learning principles contribute to student motivation to learn?” In Phase Two, qualitative data and discourse
analysis were used to answer the second and third research questions: “How useful is the instructional method of using discussion boards in adult learning?” and, “What are the key indicators of self-directed learning in adult learners in the community college setting?”

Description of Course Content and Success Rates

Instructional methods based on adult learning principles include activities that are well-organized, have relevance to the topic at hand, and allow the adult learner to plan their activities. Both courses were well-organized and explicit instructions for student success were given within the syllabus and throughout the introductions of the content materials.

The history instructor listed due dates of readings and assignments, text and electronic reader information, grading, and institutional policies in his syllabus. He used the “announcement” feature in WebCT to give students instructions and background for each reading assignment. He also used the same feature to encourage students to read critically and to consider different aspects of the topic while completing the assignments. Students were expected to post 800-to-1000-word responses to 8 topic questions, which made up 55% of their overall grade. The lectures were posted online as well as the reading materials and video clips. Students were required to post their responses to the topic questions on the discussion board but only the instructor was expected to critique it. Communication was predominantly between individual students and instructor via the bulletin board and email.
The content of the sociology course was arranged into 10 modules using Blackboard (all three sections of the course contained the same materials and assignments). The online syllabus provided details of login instructions, course description, student learning outcomes, class format, required readings, supplementary sources, course objectives, grading and institutional policies. Students were expected to read posted materials, including lectures, video clips, and readings, and respond to discussion questions. Discussion postings were 20% of their overall grade for the class. Students were assigned groups and expected to answer the questions and reply to at least three of the members in the group. The responses to the discussion questions required at least 100 words and students were given deadlines in which to respond to both the discussion questions and their peers. The intent of the postings by group members was to develop a dialogue about the topic. The instructor was thorough in his expectations and instructions. He used the “announcement” feature in Blackboard to introduce the students to the reading topics and to pose ideas to think about while the students completed the assignments. The instructor communicated with his students via email and did not contribute to the discussion board postings.

In both of the courses, students worked independently and no “group problem-solving” work was expected. Each instructor had clear instructions and expectations posted along with timelines. The following table shows the success rate of the courses studied. The success rates fall within the criteria for selecting the courses to be studied with a student success rate of greater than >62%. The list does not show the beginning enrollments for the classes but rather the ending enrollment figures.
Table 4.1: Success Rates of History and Sociology Students

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<thead>
<tr>
<th>Course</th>
<th>Number in Classes</th>
<th>Number completing the course</th>
<th>Number Passing with C or better</th>
<th>Success %</th>
</tr>
</thead>
<tbody>
<tr>
<td>History</td>
<td>30</td>
<td>26</td>
<td>24</td>
<td>80%</td>
</tr>
<tr>
<td>Sociology (three sections combined)</td>
<td>116</td>
<td>94</td>
<td>84</td>
<td>72%</td>
</tr>
</tbody>
</table>

As shown in Table 4.1, the success rates for both courses were higher than the state average of 54%. The success rates also yielded a higher combined average of 76% than the previous semester of 67%.

Phase One: Quantitative Analysis Findings

As the literature presented, adults are intrinsically motivated and engage in learning activities that promote their psychological well-being through personal accomplishments and self-esteem (Bye et al., 2007). Adult learners are autonomous and are self-directing when the learning environment provides for them opportunities to take control of their learning processes. The instructional methods contained in the Adult Learning Inventory may be categorized into two major areas that define adult learning principles: motivation and self-directed learning. In the discussion below, I have indicated whether the adult learning principle is categorized as motivation or self-directed learning according to Colton (2002). Overall, the survey results indicate that the majority of the instructional methods based on adult learning principles were applied in both of the courses. These methods include assignments that incorporate activities which students can relate to real situations or events, organized content presentation, an online syllabus that outlines expectations and outcomes, instructor facilitation, and discussion board
assignments. There were a few discrepancies and I have addressed each occurrence accordingly when they have appeared in the sections under discussion. For the ease of comparison, I have presented the analysis for each course separately.

Findings for the history course.

Adult learning principles 1 and 2 (motivation) addresses instructional methods based on adults’ orientation to learning (Table 4.2) and the need to know what learning will occur (Table 4.3). In Table 4.2, the history students agreed that the assignments incorporate activities to which students can relate to real life situations or events ($M = 3.35, SD = 1.11$) and that students are encouraged to apply their life and work experiences to learning ($M = 3.35, SD = 0.86$). While the researcher agreed with the students’ assessment for these two instructional methods, the history instructor disagreed. The history instructor focused his activities on the history of early America and papers were assigned to critically analyze the events studied. For example, one assignment gave the students a choice of topics to discuss:

Describe the Anasazi culture (rise and fall of the Anasazi and their general culture and the theories for the demise of the Anasazi), or, describe the Hohokam culture (lifestyles, advanced culture, and the reasons for the disappearance of the Hohokam), and, tell me which Indian leader you were most impressed with from reading the text and lecture and why.

The assignments in the history course focused on the reading and did not encourage students to relate the topic to their life experiences. The students were encouraged, instead, to think critically about the topics and to give their opinion of the topics. The instructor asked for their interpretations of the Indian cultures and the most
impressive leader which may have resulted in the students’ positive responses. One student wrote:

Chief Joseph was not really considered a war chief as he staged a retreat, however, some do call him the “Red Napoleon.” Rather than fleeing into Montana to seek aid from Crow chiefs, Chief Joseph surrendered with this speech….His belief in standing up for his people and what they believed without taking an offensive position, but a defensive one shows bravery that I admire. I appreciate that he surrendered before letting too many of his people die and being willing to surrender…not letting his pride get in the way of what was really important. Chief Joseph may not have won his battle, but he won my respect and that of others.

The discrepancy between the instructor and his students may be explained by the instructor’s encouragement to the students to give their opinion of the people and events under discussion. In this way, students may have felt that the “assignments incorporate activities to which students can relate to real situations or events.”

As to the other instructional methods in this section (Table D1), the students, instructor, and researcher agreed that the content of the course was presented in a practice-oriented context ($M = 3.41, SD = .62$), and reflected the maturity level of adult learners ($M = 3.53, SD = .52$). The students, instructor, and the researcher also agreed that opportunities for group problem-solving were not present ($M = 2.82, SD = 1.19$). As previously stated, group problem-solving was not assigned in the History course.
Table 4.2: Adult Learning Principle 1

*Adults’ orientation to learning is problem-centered.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Hist 108</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments incorporate activities to which students can relate; to real situations or events.</td>
<td>17</td>
</tr>
<tr>
<td>Content and theory are presented in a practice-oriented context.</td>
<td>17</td>
</tr>
<tr>
<td>Opportunities are included for solving problems in groups.</td>
<td>17</td>
</tr>
<tr>
<td>Assignments reflect the maturity level of adult learners.</td>
<td>17</td>
</tr>
<tr>
<td>Students are encouraged to apply their life and work experiences to learning.</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>3.35</td>
</tr>
<tr>
<td></td>
<td>3.41</td>
</tr>
<tr>
<td></td>
<td>2.82</td>
</tr>
<tr>
<td></td>
<td>3.53</td>
</tr>
<tr>
<td></td>
<td>3.35</td>
</tr>
</tbody>
</table>

The adult learning principle 2 (motivation) (Table 4.3), “Adults also need to know how learning is to be conducted, what is to be learned and its benefits” is implemented through the syllabi. The students, instructors, and the researcher all agreed that the instructional methods described were present. The mean range is 3.29 to 3.88 with the standard deviation ranging from .33 to .85.
Table 4.3: Adult Learning Principle 2

*Adults need to know what learning will occur, how learning will be conducted, and why learning is important.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Hist 108</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  M</td>
</tr>
<tr>
<td>An online syllabus identifies key course activities, assignments, and grading criteria.</td>
<td>17  3.76  .44</td>
</tr>
<tr>
<td>Clear expectations are set for the course.</td>
<td>17  3.88  .33</td>
</tr>
<tr>
<td>Clear expectations are set for each learning unit.</td>
<td>17  3.71  .47</td>
</tr>
<tr>
<td>Clear expectations are set for how projects or papers are to be completed.</td>
<td>17  3.65  .49</td>
</tr>
<tr>
<td>Models of &quot;best practice&quot; behavior are provided in order to let students know what they are doing compared to a known model.</td>
<td>17  3.29  .85</td>
</tr>
<tr>
<td>Information is provided about the course's intended learning outcomes and benefits.</td>
<td>17  3.59  .51</td>
</tr>
<tr>
<td>Information is provided about the skill and technical requirements for the course.</td>
<td>17  3.53  .51</td>
</tr>
<tr>
<td>At the beginning of each lesson, learners are oriented to the objectives or central focus of that lesson.</td>
<td>17  3.76  .44</td>
</tr>
<tr>
<td>At the beginning of each lesson, a summary of the required activities is presented.</td>
<td>17  3.71  .47</td>
</tr>
<tr>
<td>Assignments reflect the maturity level of adult learners</td>
<td>47  3.38  .64</td>
</tr>
<tr>
<td>Students are encouraged to apply their life and work experiences to learning</td>
<td>47  3.30  .55</td>
</tr>
</tbody>
</table>
The instructor provided the students with clear expectations for the course and gave explicit instructions for the assignments. An excerpt from the instructor’s introduction is presented below:

Welcome to online Early American history. You are going to have a topical tour of American History during this term. And you are going to participate in an interactive history class with embedded videos in your digital text. You need to do the following before you begin the class….You can see from all the introductory material that you have eight answers to put on the bulletin board for 55% of your final grade and these answers average 800 words and more; you also have four key assignments.

Throughout the course, the instructor posted an introduction to the topics and included deadlines for the submission of assignments. The instructor also provided the students with a study guide and questions to reflect upon for each of the sections within the digital text:

1. How was the environment important in our early history?
2. How did the land influence early explorers and settlers?
3. Was the environment more influential in our early history than today?
4. Describe the evolution of the conservation and ecology movements.

Tables 4.4, 4.5, and 4.6 correspond to the Adult Learning Principles 3, 4, and 5 (self-directed learning). According to these three principles, adults bring their experiences into their learning. The instructional methods focused on adults’ learning styles, their self-directedness, and the need to relate their life experiences to their learning.

In Table 4.4, (Adult Learning Principle 3--Adults come into an educational setting with a wide range of experiences, which can serve as a basis for new learning) the
instructional methods include incorporating prior knowledge and experience to learning. Adult learners draw on their experiences in order to relate to what is being learned. They enter learning more purposefully and are motivated by the degree of control over that learning. They are independent learners and as they mature, they become more independent and self-directing (Knowles, 1980). The students, instructor and researcher all agreed that the instructional methods in this section were present.

Table 4.4: Adult Learning Principle 3

*Adults come into an educational setting with a wide range of experiences which can serve as a basis for new learning.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Hist 108</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>If students are not familiar with each other, the class is opened with introductions.</td>
<td>17</td>
<td>3.59</td>
<td>.62</td>
</tr>
<tr>
<td>Assignments encourage students to share and reflect upon their prior experiences.</td>
<td>17</td>
<td>3.65</td>
<td>.93</td>
</tr>
<tr>
<td>Course assignments allow students to incorporate their prior knowledge into their learning.</td>
<td>17</td>
<td>3.41</td>
<td>.71</td>
</tr>
<tr>
<td>Guidance is provided to help students incorporate their life and work experience into learning.</td>
<td>17</td>
<td>3.29</td>
<td>.99</td>
</tr>
<tr>
<td>Peer critiques or mentoring is encouraged and facilitated.</td>
<td>17</td>
<td>3.41</td>
<td>.94</td>
</tr>
</tbody>
</table>

In Table 4.5 (Adult Learning Principle 4--Because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in
order to adopt alternate ways of thinking), students, the instructor, and the researcher all agreed that the instructional methods were present.

As previously mentioned, the instructor used the discussion board and email as his communication tools. Students agreed that the orientation activities provided allowed them to develop the skills necessary to complete the course ($M = 3.65, SD = .49$). The instructor did not assign students to post threaded discussions but, rather, he used the discussion board for students to post their papers. The instructor then commented on the paper so other students could see his responses. In this way, the instructor created a “virtual” presence and facilitated learning. Posting comments to students’ submissions also gave other students an opportunity to gain a better understanding of the topic assigned. For example, one of his comments to a student’s submission was:

Well-written answer here. I teach Indian history and I find it strange that so many students so far picked Geronimo as the most impressive Indian. He was hardly the most successful Indian leader and his strategy was not the most successful. Anyway, this is a high quality answer here, well, done. Good job with the Hohokam culture and with Geronimo. Keep up the good work with the midterm assignments.

Using the discussion board in this fashion resulted in the favorable responses by the students that the instructor encourages all students to post response questions, read other comments and reflect ($M = 3.41, SD = .51$) and are encouraged to share with other students their derivation of meaning ($M = 3.41, SD = 1.00$). The instructor used common language ($M = 3.24, SD = 1.15$) and provided students with the conceptual framework to develop new mental models ($M = 3.59, SD = .87$).
Table 4.5: Adult Learning Principle 4

*Because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in order to adopt alternate ways of thinking.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Hist</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation activities are provided at the beginning of the course that allows learners to develop the skills necessary to complete the course (e.g., &quot;introduce yourself to the discussion forum,&quot; &quot;send me e-mail saying you were able to log on&quot;).</td>
<td>17</td>
<td>3.65</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td>The instructor of the course encourages all students to post response to questions, read other comments and reflect. ( Threaded discussions allow students to see and reflect on each other's response in comparison to their own, which has an enormous benefit in assessing different attitudes.)</td>
<td>17</td>
<td>3.41</td>
<td>.51</td>
<td></td>
</tr>
<tr>
<td>The course provides a conceptual framework that helps learners to develop new conceptual frameworks or mental models.</td>
<td>17</td>
<td>3.59</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>The instructor uses common language characteristics between old and new models or concepts and introduces new jargon appropriately.</td>
<td>17</td>
<td>3.24</td>
<td>1.15</td>
<td></td>
</tr>
<tr>
<td>Students are encouraged to share with other students their derivation of meaning and their progress through discussion postings, reflection papers that are posted, or e-mail.</td>
<td>17</td>
<td>3.41</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

In Table 4.6 (Adult Learning Principle 5--Adults have a self-concept of being responsible for their own decisions, for their own lives, and their own learning; they need to be provided the tools and opportunities for independent, self-directed learning), the student responses indicated that the course allowed the students to direct their own
learning ($M = 3.53, SD = .62$) and that the course was well-organized ($M = 3.65, SD = .49$). The students felt that the instructor provided flexibility in working ahead ($M = 3.35, SD = .70$) and that the instructor provided timely feedback ($M = 3.53, SD = .52$). The instructor used the discussion board for feedback as well as email for private student inquiries. Both the instructor and researcher agreed with the students’ responses.

Table 4.6: Adult Learning Principle 5

*Adults have a self-concept of being responsible for their own decisions, for their own lives, and their own learning. They need to be provided the tools and opportunities for independent, self-directed learning.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Hist 108</th>
</tr>
</thead>
<tbody>
<tr>
<td>The course is designed to allow students to direct their own learning.</td>
<td>17</td>
</tr>
<tr>
<td>The instructor provides organizers that allow students to manage study and homework with minimal questions.</td>
<td>17</td>
</tr>
<tr>
<td>The instructor provides flexibility in assignments that allow for students to work ahead.</td>
<td>17</td>
</tr>
<tr>
<td>The instructor encourages and reinforces self-sufficiency through timely feedback.</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>3.53</td>
<td>.62</td>
</tr>
<tr>
<td>17</td>
<td>3.65</td>
<td>.49</td>
</tr>
<tr>
<td>17</td>
<td>3.35</td>
<td>.70</td>
</tr>
<tr>
<td>17</td>
<td>3.53</td>
<td>.52</td>
</tr>
</tbody>
</table>

Adult Learning Principles 6 and 7 (Tables 4.7 and 4.8) focused on instructional methods that make the learning environment conducive to online learning.
In Table 4.7, students agreed that a variety of instructional methods and media was used to meet their learning style needs ($M = 3.41, SD = .62$). The students were able to move through the assignments at their own pace ($M = 3.47, SD = .62$) and could view Table 4.7: Adult Learning Principle 6

*In any group of adults there will be a wider range of individual differences, thus the individualization of learning experiences is important in many situations.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Hist 108 N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>A variety of instructional methods and media are used to meet the differing needs and learning styles of students.</td>
<td>17</td>
<td>3.41</td>
<td>.62</td>
</tr>
<tr>
<td>Students can move through the instruction at their own pace.</td>
<td>17</td>
<td>3.47</td>
<td>.62</td>
</tr>
<tr>
<td>Students can review previous learning whenever they want.</td>
<td>17</td>
<td>3.47</td>
<td>.72</td>
</tr>
<tr>
<td>The instructor is available to coach students or to suggest outside mentors.</td>
<td>17</td>
<td>3.65</td>
<td>.79</td>
</tr>
<tr>
<td>The instructor provides links to a wide variety of web resources.</td>
<td>17</td>
<td>3.76</td>
<td>.44</td>
</tr>
<tr>
<td>Students with different levels of computer skills and resources can succeed in this course; the course conforms to accessibility requirements.</td>
<td>17</td>
<td>3.82</td>
<td>.64</td>
</tr>
<tr>
<td>Ample time is allotted for students to master the content.</td>
<td>17</td>
<td>3.59</td>
<td>.51</td>
</tr>
</tbody>
</table>
previous chapters \((M = 3.47, SD = .72)\). The instructor provided the students with many Web resources \((M = 3.76, SD = .44)\) that supplemented their learning and that the instructor was available to coach students \((M = 3.65, SD = .79)\). Since the digital text was developed by the instructor, Web links went directly to pertinent sources without the students having to navigate through an outside Web site. This provided an ease of navigation so students did not need a high-level of computer skills to move through the course \((M = 3.82, SD = .64)\) and they also felt that ample time was allotted to master the content \((M = 3.59, SD = .51)\). (Note: As part of the curricular process for CCD, content is checked for Web accessibility according to the American Disabilities Act, Section 508).

Table 4.8, (Adult Learning Principle 7--Situational differences, or the context of the learning environment impacts the learning process of adults) shows that students felt that the learning environment was positive. They agreed that support services \((M = 4.00, SD = .79)\), supplemental support structures \((M = 3.88, SD = 1.05)\), and back-up assistance were made available \((M = 4.12, SD = .99)\). They also agreed that learning resources may be personalized \((M = 3.82, SD = 1.01)\), directions were easy to follow \((M = 3.31, SD = .60)\), and the screen was easy to read \((M = 3.53, SD = .62)\). Providing these instructional methods suggested to the students that the learning activity was going to be rewarding and positive \((M = 3.41, SD = .51)\). The instructor and researcher agreed with the students’ responses. The instructional method “students work in small groups” received a low ranking \((M = 2.65, SD = 1.46)\) and both the instructor and researcher agreed with the students’ responses. As previously stated, group problem-solving tasks were not assigned.
Table 4.8: Adult Learning Principle 7

*Situational differences, or the context of the learning environment, impact the learning process of adults.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Hist 108</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Support services are available in this course to meet student needs. (They may include the following services: textbook purchasing, library services, disability services, admissions, enrollment, and transfer of credit.)</td>
<td>17</td>
</tr>
<tr>
<td>The psychological climate of the course is conducive to learning. It suggests to the student that the learning activity is going to be rewarding and positive.</td>
<td>17</td>
</tr>
<tr>
<td>The screen easy to read.</td>
<td>17</td>
</tr>
<tr>
<td>Directions are easy to follow.</td>
<td>17</td>
</tr>
<tr>
<td>The learning resources in this course can be personalized.</td>
<td>17</td>
</tr>
<tr>
<td>Students work in small groups.</td>
<td>17</td>
</tr>
<tr>
<td>The instructor has a procedure for determining each student's support structure in order to find ways to supplement that support structure, if needed.</td>
<td>17</td>
</tr>
<tr>
<td>Back up assistance is available to students outside the major communications media used for this course (800 number, help desk, et cetera).</td>
<td>17</td>
</tr>
</tbody>
</table>

According to the responses from the ALI, the instructional methods based on adult learning principles were implemented in the history course except the few mentioned. The history instructor did not encourage small group work nor did he assign group problem-solving tasks. Although the students agreed that the assignments
incorporated activities to which students can relate to real situations or events, the instructor disagreed.

*Findings for the sociology course.*

Adult learning principles 1 and 2 (motivation) addresses instructional methods based on adults’ orientation to learning (Table 4.9) and the need to know what learning will occur (Table 4.10). In Table 4.9, the sociology students agreed that the assignments incorporate activities to which students can relate to real life situations or events ($M = 3.28$, $SD = .62$) and that students are encouraged to apply their life and work experiences to learning ($M = 3.30$, $SD = .55$). The sociology instructor and the researcher were also in agreement that these instructional methods were present. An example of an assignment that reflects the instructional methods asks the students to:

Construct a definition of the terms ‘white privilege’ and ‘white supremacy.’ Provide an example of each, if different. Do white privilege and/or white supremacy shape the lives of Americans today? How?

The instructor encouraged students to relate the subject to their experiences and to critically analyze ethnic and racial relations. The students also agreed that the content was presented in a practice-oriented context ($M = 3.24$, $SD = .70$) and reflected the maturity level of adult learners ($M = 3.38$, $SD = .64$). Students, although indicating a lower score, agreed that opportunities for group problem-solving were present ($M = 2.89$, $SD = .76$). As stated previously, group problem-solving was not encouraged. The responses from the instructor and researcher were in agreement with the students for all instructional methods in this section.
Table 4.9: Adult Learning Principle 1

Adults’ orientation to learning is problem-centered.

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Soc 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments incorporate activities to which students can relate; to real situations</td>
<td></td>
</tr>
<tr>
<td>or events.</td>
<td>N 47</td>
</tr>
<tr>
<td></td>
<td>M 3.28</td>
</tr>
<tr>
<td></td>
<td>SD .62</td>
</tr>
<tr>
<td>Content and theory are presented in a practice-oriented context.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N 47</td>
</tr>
<tr>
<td></td>
<td>M 3.24</td>
</tr>
<tr>
<td></td>
<td>SD .70</td>
</tr>
<tr>
<td>Opportunities are included for solving problems in groups.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N 47</td>
</tr>
<tr>
<td></td>
<td>M 2.89</td>
</tr>
<tr>
<td></td>
<td>SD .76</td>
</tr>
<tr>
<td>Assignments reflect the maturity level of adult learners.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N 47</td>
</tr>
<tr>
<td></td>
<td>M 3.38</td>
</tr>
<tr>
<td></td>
<td>SD .64</td>
</tr>
<tr>
<td>Students are encouraged to apply their life and work experiences to learning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N 47</td>
</tr>
<tr>
<td></td>
<td>M 3.30</td>
</tr>
<tr>
<td></td>
<td>SD .55</td>
</tr>
</tbody>
</table>

The adult learning principle 2 (motivation) (Table 4.10), “Adults also need to
know how learning is to be conducted, what is to be learned and its benefits” is
implemented through the syllabi. The students, instructors, and the researcher all agreed
that the instructional methods described were present.
Table 4.10: Adult Learning Principle 2

*Adults need to know what learning will occur, how learning will be conducted, and why learning is important.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Soc 120</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>An online syllabus identifies key course activities, assignments, and grading criteria.</td>
<td>47</td>
</tr>
<tr>
<td>Clear expectations are set for the course.</td>
<td>47</td>
</tr>
<tr>
<td>Clear Expectations are set for each learning unit.</td>
<td>47</td>
</tr>
<tr>
<td>Clear expectations are set for how projects or papers are to be completed.</td>
<td>47</td>
</tr>
<tr>
<td>Models of &quot;best practice&quot; behavior are provided in order to let students know what they are doing compared to a known model.</td>
<td>47</td>
</tr>
<tr>
<td>Information is provided about the course's intended learning outcomes and benefits.</td>
<td>47</td>
</tr>
<tr>
<td>Information is provided about the skill and technical requirements for the course.</td>
<td>47</td>
</tr>
<tr>
<td>At the beginning of each lesson, learners are oriented to the objectives or central focus of that lesson.</td>
<td>47</td>
</tr>
<tr>
<td>At the beginning of each lesson, a summary of the required activities is presented.</td>
<td>47</td>
</tr>
<tr>
<td>Assignments reflect the maturity level of adult learners</td>
<td>47</td>
</tr>
<tr>
<td>Students are encouraged to apply their life and work experiences to learning</td>
<td>47</td>
</tr>
</tbody>
</table>
The instructor provided the students with clear expectations for the course \( (M = 3.38, SD = .97) \) and gave explicit instructions for the assignments \( (M = 3.49, SD = .98) \). The instructor provided a syllabus that clearly outlined assignments, expectations, activities \( (M = 3.53, SD = 1.02) \), and objectives of each lesson \( (M = 3.11, SD = 1.36) \). The online syllabi combined with the posted announcements helped to reinforce the expected outcomes of each lesson \( (M=3.13, SD = .95) \). The instructor provided an orientation to each lesson \( (M = 3.23, SD = .96) \) and provided a summary of the required activities \( (M = 3.28, SD = .95) \). The students also agreed that the assignments reflected the maturity level of adult learners \( (M = 3.53, SD = .52) \). Students agreed that the instructor provided information about the skill and technical requirements for the course \( (M = 3.21, SD = 1.02) \). For example, the sociology syllabus, in addition to logon instructions, assignments, the course description, and grading system, listed the student learning outcomes:

Students will:

1. Apply the major theoretical perspectives in sociology to information and real experiences.

2. Identify, explain, and apply the principles of social scientific research methodology.

3. Appraise the range of cultural variability in human societies.

4. Explain sociologically inequalities of class, race, ethnicity, gender, and age in modern and pre-modern societies.
The instructor also provided study guides in addition to introductions to the reading topics within the course management system. Students also agreed that they were encouraged to apply their life and work experiences to learning \((M = 3.35, SD = .86)\). The students’ responses to the survey showed evidence that the instructional methods based on Adult Learning Principles 1 and 2 were applied (except for group problem-solving). The instructor’s responses were in agreement with the students and the researcher’s results.

In Tables 4.11, 4.12, and 4.13 the data respond to the Adult Learning Principles 3, 4, and 5 (self-directed learning). According to these three principles, adults bring their experiences into their learning. The instructional methods focused on adults’ learning styles, their self-directedness, and the need to relate their life experiences to their learning.

In Table 4.11, (Adult Learning Principle 3--Adults come into an educational setting with a wide range of experiences which can serve as a basis for new learning) the instructional methods include incorporating prior knowledge and experience to learning. Adult learners draw on their experiences in order to relate to what is being learned. They enter learning more purposefully and are motivated by the degree of control over that learning (Knowles, 1975). The students agreed that the class was opened with introductions \((M = 3.21, SD = 1.08)\) and that assignments encouraged students to share and reflect upon their prior experiences \((M = 3.44, SD = .86)\). Students also agreed that the course assignments allowed them to incorporate their prior knowledge \((M = 3.17, SD = .92)\) and that peer critiques were encouraged \((M = 3.17, SD = 1.17)\). Students agreed
that guidance was provided \((M = 2.94, \text{SD} = .99)\) and that peer critiques were encouraged \((M = 3.17, \text{SD} = 1.17)\).

Table 4.11: Adult Learning Principle 3

*Adults come into an educational setting with a wide range of experiences which can serve as a basis for new learning.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Soc</th>
<th>120</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>If students are not familiar with each other, the class is opened with introductions.</td>
<td></td>
<td></td>
<td></td>
<td>47</td>
<td>3.21</td>
</tr>
<tr>
<td>Assignments encourage students to share and reflect upon their prior experiences.</td>
<td></td>
<td></td>
<td></td>
<td>46</td>
<td>3.44</td>
</tr>
<tr>
<td>Course assignments allow students to incorporate their prior knowledge into their learning.</td>
<td></td>
<td></td>
<td></td>
<td>47</td>
<td>3.17</td>
</tr>
<tr>
<td>Guidance is provided to help students incorporate their life and work experience into learning.</td>
<td></td>
<td></td>
<td></td>
<td>47</td>
<td>2.94</td>
</tr>
<tr>
<td>Peer critiques or mentoring is encouraged and facilitated.</td>
<td></td>
<td></td>
<td></td>
<td>47</td>
<td>3.17</td>
</tr>
</tbody>
</table>

In Table 4.12 (Adult Learning Principle 4--Because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in order to adopt alternate ways of thinking), the instructor and the researcher agreed that the instructional methods were present.
Table 4.12: Adult Learning Principle 4

Because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in order to adopt alternate ways of thinking.

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Soc 120</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Orientation activities are provided at the beginning of the course that allows learners to develop the skills necessary to complete the course (e.g., &quot;introduce yourself to the discussion forum,&quot; &quot;send me e-mail saying you were able to log on&quot;)</td>
<td>47</td>
<td>3.06</td>
<td>1.37</td>
</tr>
<tr>
<td>The instructor of the course encourages all students to post response to questions, read other comments and reflect. (Threaded discussions allow students to see and reflect on each other's response in comparison to their own, which has an enormous benefit in assessing different attitudes.)</td>
<td>47</td>
<td>3.21</td>
<td>1.33</td>
</tr>
<tr>
<td>The course provides a conceptual framework that helps learners to develop new conceptual frameworks or mental models.</td>
<td>47</td>
<td>2.98</td>
<td>1.36</td>
</tr>
<tr>
<td>The instructor uses common language characteristics between old and new models or concepts and introduces new jargon appropriately.</td>
<td>47</td>
<td>3.13</td>
<td>1.39</td>
</tr>
<tr>
<td>Students are encouraged to share with other students their derivation of meaning and their progress through discussion postings, reflection papers that are posted, or e-mail.</td>
<td>47</td>
<td>3.15</td>
<td>1.40</td>
</tr>
</tbody>
</table>

In Table 4.13 (Adult Learning Principle 5--Adults have a self-concept of being responsible for their own decisions, for their own lives, and their own learning; they need to be provided the tools and opportunities for independent, self-directed learning), the student responses indicated that the course allowed the students to direct their own learning ($M = 3.00, SD = 1.23$) and that the course was well-organized ($M = 3.02, SD =$
The students felt that the instructor provided flexibility in working ahead ($M = 3.04$, $SD = 1.25$) and that the instructor provided timely feedback ($M = 3.04$, $SD = 1.23$). The instructor and researcher agreed with the students’ assessments.

Table 4.13: Adult Learning Principle 5

*Adults have a self-concept of being responsible for their own decisions, for their own lives, and their own learning. They need to be provided the tools and opportunities for independent, self-directed learning.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The course is designed to allow students to direct their own learning.</td>
<td>47</td>
<td>3.00</td>
<td>1.23</td>
</tr>
<tr>
<td>The instructor provides organizers that allow students to manage study and homework with minimal questions.</td>
<td>46</td>
<td>3.02</td>
<td>1.37</td>
</tr>
<tr>
<td>The instructor provides flexibility in assignments that allow for students to work ahead.</td>
<td>47</td>
<td>3.04</td>
<td>1.25</td>
</tr>
<tr>
<td>The instructor encourages and reinforces self-sufficiency through timely feedback.</td>
<td>47</td>
<td>3.04</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Adult Learning Principles 6 and 7 (Tables 4.14 and 4.15) focused on instructional methods that make the learning environment conducive to online learning. In any group of adults there will be a wider range of individual differences, thus the individualization of learning experiences is important in many situations (Adult Learning Principle 6). In Table 4.14, students agreed that a variety of instructional methods and media was used to meet their learning style needs ($M = 2.98$, $SD = 1.24$). The students did agree that they
were able to move through the assignments at their own pace \((M = 3.04, SD = 1.22)\) and could view previous chapters \((M = 3.09, SD = 1.35)\). They also agreed that the instructor provided the students with many Web resources \((M = 3.19, SD = 1.35)\) that supplemented their learning and that the instructor was available to coach students \((M = 3.17, SD = 1.42)\). Students agreed that the course allowed for the different levels of computer skills \((M = 3.11, SD = 1.31)\) and that ample time was allotted for students to master the content \((M = 3.04, SD = 1.37)\). The instructor and researcher agreed that all instructional methods in this section were present.

Table 4.14: Adult Learning Principle 6

*In any group of adults there will be a wider range of individual differences, thus the individualization of learning experiences is important in many situations.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Soc 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>A variety of instructional methods and media are used to meet the differing needs and learning styles of students.</td>
<td>47</td>
</tr>
<tr>
<td>Students can move through the instruction at their own pace.</td>
<td>47</td>
</tr>
<tr>
<td>Students can review previous learning whenever they want.</td>
<td>47</td>
</tr>
<tr>
<td>The instructor is available to coach students or to suggest outside mentors.</td>
<td>46</td>
</tr>
<tr>
<td>The instructor provides links to a wide variety of web resources.</td>
<td>47</td>
</tr>
<tr>
<td>Students with different levels of computer skills and resources can succeed in this course; the course conforms to accessibility requirements.</td>
<td>47</td>
</tr>
<tr>
<td>Ample time is allotted for students to master the content.</td>
<td>47</td>
</tr>
</tbody>
</table>
Table 4.1, (Adult Learning Principle 7--Situational differences, or the context of the learning environment impacts the learning process of adults) indicates that students agreed that all the instructional methods surveyed were present except for one. The instructional method, “students work in small groups” received a low ranking of $M = 2.57$, $SD = 1.25$. The students were assigned different groups and were to respond to discussion board postings of the members within the group. The group members numbered between 7 and 10 students depending on the enrollment of each section. The sociology instructor (and researcher) rated this method as “agree” since the students were assigned to smaller groups and collaborated amongst themselves within the group. The term “small groups” appears to have been interpreted differently amongst the respondents. The students agreed that the psychological climate of the course was conducive to learning and that the learning activity was going to be rewarding and positive ($M = 2.94$, $SD = 1.28$). The students also agreed that support services ($M = 3.09$, $SD = 1.33$), supplemental support structures ($M = 3.40$, $SD = 1.58$), and back-up assistance were made available ($M = 3.53$, $SD = 1.59$). They also agreed that learning resources may be personalized ($M = 3.00$, $SD = 1.30$), directions were easy to follow ($M = 3.12$, $SD = 1.31$), and the screen was easy to read ($M = 3.11$, $SD = 1.32$). The instructor and researcher also agreed with the students.
Table 4.15: Adult Learning Principle 7

*Situational differences, or the context of the learning environment, impact the learning process of adults.*

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Soc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support services are available in this course to meet student needs. (They may include the following services: textbook purchasing, library services, disability services, admissions, enrollment, and transfer of credit.)</td>
<td>47</td>
</tr>
<tr>
<td>The psychological climate of the course is conducive to learning. It suggests to the student that the learning activity is going to be rewarding and positive.</td>
<td>47</td>
</tr>
<tr>
<td>The screen easy to read.</td>
<td>46</td>
</tr>
<tr>
<td>Directions are easy to follow.</td>
<td>47</td>
</tr>
<tr>
<td>The learning resources in this course can be personalized.</td>
<td>46</td>
</tr>
<tr>
<td>Students work in small groups.</td>
<td>47</td>
</tr>
<tr>
<td>The instructor has a procedure for determining each student's support structure in order to find ways to supplement that support structure, if needed.</td>
<td>47</td>
</tr>
<tr>
<td>Back up assistance is available to students outside the major communications media used for this course (800 number, help desk, etc.).</td>
<td>47</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soc</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
</tbody>
</table>

47 3.09 1.33
47 2.94 1.28
46 3.11 1.32
47 3.12 1.31
46 3.00 1.30
47 2.57 1.25
47 3.40 1.58
47 3.53 1.59

*Summary of Findings in Phase One*

The findings in Phase One showed evidence that the Adult Learning Inventory was useful in assessing instructional methods based on adult learning principles and partially answered the research question, “How does instructional design (content presentation) and instructional methods based on adult learning principles contribute to
student motivation to learn?” For the purposes of this study, the ALI was modified to include responses on a five-point Likert scale: strongly disagree (1), disagree (2), agree (3), strongly agree (4), and don’t know (0), in order to compute scores and to use the instrument as a measure of effectiveness of the application of adult learning principles in the construction of the course content (Appendix B). The “don’t know” responses were scored as “0” and included in the calculation of the mean and standard deviation. Since the frequency of the “don’t know” response was low, the inclusion of those responses in the calculation of the mean and standard deviation made very little impact to the resulting outcomes.

Adult Learning Principles 1 and 2 focused on instructional methods that would motivate the students to learn. The positive results showed that the content presentation for both courses contributed to student learning. This statement is further evidenced in the follow-up interview questions discussed in Phase Two. The students’ responses from both cases corresponded to the instructors’ and researcher responses except the few that were cited. It is noteworthy that the history instructor has more than nine years of online teaching experience (35+ total years of teaching) and was one of the first pioneers in online learning at the study site. His students, throughout the survey, scored the instructional methods higher than the sociology students. Although the results of the survey is limited because of the small sample size, the ALI, in its modified form, did provide an insight into measuring the extent to which the respondents felt that the instructional methods were implemented in the two cases.
Phase Two: Qualitative Analysis Findings

In Phase Two of the study, qualitative data were used to investigate the second and third research questions: “How useful is the instructional method of using discussion boards in adult learning?” and, “What are the key indicators of self-directed learning in adult learners in the community college setting?”

From the 64 responses to the ALI survey, 11 students responded to the follow-up interview questions. The responses served in developing the selection process for the discourse analysis. There were eight respondents from the sociology course and three from the history course. Since the history instructor did not make use of the discussion board for posting peer to peer comments, only the discussion postings of the eight respondents from the sociology sections were selected for the discourse analysis.

A coding schema was developed to analyze the discussions postings. Based on the literature and Knowles’s (1975) concept of the adult learner and self-directed learning and gleaned from the Adult Learning Inventory, the text was coded as prior knowledge, prior experience, problem solving, and reflective observations. These codes were also selected to discover key indicators of self-directed learning in the community college setting. Each line of text was coded according to the following schema based on adult learning principles:

Prior knowledge: Adult learners bring a quality of experience to the educational setting gained from their roles as full-time workers, spouses, parents, and voting citizens. The text was coded for prior knowledge when the participant used his/her previous knowledge to contribute to the discussion.
Prior experience: Adults come into an educational setting with a wide-range of experiences which can serve as a basis for new learning. When the participant brought in their past experiences, the text was coded as “prior experience.”

Problem solving: Adults enter into an educational activity with a life-centered, task-centered, or problem-centered orientation to learning. Text was coded as problem solving when the participant offered some solution to the topics raised in the discussion.

Reflective observations: Adults enter educational settings ready to learn when they experience a need-to-know or do something in order to perform more effectively in some aspect of their lives. Reflective observations were coded when participants responded self-reflectively.

Propositions: Discourse representing answers to the discussion questions were coded as propositions and not used for analysis but recorded in Tables 4.16 and 4.17 below.

There were 1,303 lines of text, of which 334 were coded as propositions that answered the discussion questions. During the coding process, I noted that there was a higher response rate given by non-traditional students than traditional students. These findings lead me to divide the students into two groups: traditional and non-traditional to further analyze the findings. Table 4.16 shows the number of coded postings for each participant listed by age. The traditional students did not post to all discussion assignments whereas one (IK) from the non-traditional group missed one posting.
assignment. The number of postings from the non-traditional group could be interpreted as an indication of their self-directedness and their motivation to learn. The average postings by age group in the coded categories are shown in Table 4.16.

Table 4.16: Frequency of Coded Postings

<table>
<thead>
<tr>
<th>ID</th>
<th>Age</th>
<th>Propositions</th>
<th>Prior Knowledge</th>
<th>Prior Experience</th>
<th>Problem-Solving</th>
<th>Reflective Observation</th>
<th>Total Postings</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH</td>
<td>19</td>
<td>7</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>47</td>
<td>62</td>
</tr>
<tr>
<td>NW</td>
<td>20</td>
<td>27</td>
<td>2</td>
<td>11</td>
<td>6</td>
<td>34</td>
<td>80</td>
</tr>
<tr>
<td>AR</td>
<td>21</td>
<td>26</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>39</td>
</tr>
<tr>
<td>NS</td>
<td>26</td>
<td>68</td>
<td>40</td>
<td>46</td>
<td>22</td>
<td>47</td>
<td>223</td>
</tr>
<tr>
<td>AM</td>
<td>28</td>
<td>47</td>
<td>33</td>
<td>38</td>
<td>31</td>
<td>76</td>
<td>225</td>
</tr>
<tr>
<td>AO</td>
<td>28</td>
<td>50</td>
<td>40</td>
<td>73</td>
<td>67</td>
<td>61</td>
<td>291</td>
</tr>
<tr>
<td>ED</td>
<td>28</td>
<td>64</td>
<td>29</td>
<td>23</td>
<td>34</td>
<td>41</td>
<td>191</td>
</tr>
<tr>
<td>IK</td>
<td>37</td>
<td>45</td>
<td>35</td>
<td>31</td>
<td>23</td>
<td>58</td>
<td>192</td>
</tr>
</tbody>
</table>

The non-traditional group used their prior knowledge and experience more frequently in their postings than the traditional group as shown in Table 4.17. All participants, however, used reflective observation in their responses. The frequency of postings of the traditional students dwindled toward the end of the semester while the frequency for the non-traditional students remained fairly consistent throughout the course. The non-traditional students exceeded the number of required postings for each topic, further indicating their motivation to learn.
Table 4.17: Average Postings by Age Group

<table>
<thead>
<tr>
<th>Student</th>
<th>Propositions</th>
<th>Prior Knowledge</th>
<th>Prior Experience</th>
<th>Problem-solving</th>
<th>Reflective Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional (N=3)</td>
<td>20</td>
<td>3</td>
<td>5.67</td>
<td>2.33</td>
<td>17.33</td>
</tr>
<tr>
<td>Non-traditional (N=5)</td>
<td>54.8</td>
<td>35.4</td>
<td>42.2</td>
<td>35.4</td>
<td>56.6</td>
</tr>
</tbody>
</table>

It is clear from the two tables, that non-traditional students have a higher motivation to participate in the discussions. The findings are in line with the conclusion of a study conducted by Bye et al. (2007) that the age of the adult learner is an indicator of self-directedness. The difference in the way students responded to the discussion postings indicates how non-traditional students incorporate motivational strategies such as prior experience, knowledge, and problem-solving in their learning. Both non-traditional and traditional students used reflective observations to relate to the topics at hand. The discourse analysis of the sociology course postings showed that students brought prior knowledge, experiences, and problem-solving to their learning indicating motivational and self-directing strategies as outlined by Knowles (1975).

As part of Phase Two, I sent interview questions to the respondents that focused on instructional design, use of the discussion boards, and motivation to further address the research questions in this study. The responses to the first interview question, “Did the discussion posting increase your knowledge of the topic at hand? If so, how? If not,
are shown in Table 4.18. There were seven students who felt that the discussion board added to their knowledge. Of the seven, six were non-traditional students. Positive comments from two of the non-traditional students in the sociology class were:

I read every discussion posting that was on the board. It gave me a better understanding of not only the topic but also other people’s perspective and opinions on a particular topic; hence it broadened my understanding of the topic. (Non-traditional, Sociology)

Yes. For the most part, with few exceptions, the discussion topics required analysis [sic] by watching a clip, reading, researching and comparing the information to prior knowledge and/or experience. This is how one learns, not simply by reading which is what some instructors do. This instructor required us to think. It was very effective. (Non-traditional, Sociology)

Table 4.18: Responses to Interview Question #1

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Somewhat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional students</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Non-traditional students</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

There were four students who felt that the discussion postings did not increase their knowledge or they had some reservations (two traditional and two non-traditional students). Some of the students’ comments were:

I do not feel that the discussion postings increased my knowledge of the topics at hand. I felt that I got so much more out of the text and assignments. I felt that most of the postings were not very helpful since most students do the minimum to get credit for them. I was guilty of this at times. (Non-traditional, Sociology)
The discussion postings sometimes helped me gain a better understanding of the topic being reviewed at the time. It is hard to fully understand the topic when we have to consider what the textbook writes while listening to what the rest of the class has to say as well. (Traditional, Sociology)

Yes and no. In this particular course the discussion questions were very specific. It was very time consuming to try and track down the correct answer and sometimes the topic questions just seemed like they were less interesting than the possibilities coming from the chapter....There was a lot of repetitious postings going on because it was not really an opinion kind of question, it was a fact so I felt like a lot was a waste of time because it was such regurgitated information. (Traditional, Sociology)

Responses from the history students, all of whom, coincidentally, were non-traditional students, indicated that although they were not required to post comments, they took advantage of the tool:

The discussion posting did help increase my knowledge a little. For the most part when we posted our discussion posts we were not required to read or respond to other people’s post, however, many students took it upon themselves to do so, which regularly stimulated conversation of the topic at hand. Also, the instructor critiqued and commented on every single post, furthering discussion. (Non-traditional, History)

Yes, the discussion postings increased my knowledge of the topic at hand because by reading the threads, I can grasp more of the important matters of the topic that I slipped from my reading through the posting of other students as well as the instructor. (Non-traditional, History)

One history student expressed his disappointment in the way in which the discussion board was used:

The discussions were not discussions; they were long essays that had to be written about the reading. This took away from any critical thinking or discussions among classmates. (Non-traditional, History)

As noted previously, the history instructor did not use the discussion board in its traditional format.
The responses from the first interview question indicate that the non-traditional students were more inclined to find the discussion board a useful instructional method. The responses also indicate that the discussion board may be more useful if used in a meaningful way that would stimulate dialogue.

The research question: “How does instructional design (content presentation) and instructional methods based on adult learning principles contribute to student motivation to learn?” was further investigated through an interview question. Responses to the interview question, “Did the way the content was presented motivate you to complete the assignment? If so, in what ways? If not, why?” indicated that instructional design is a factor in the motivation to complete the assignments as shown in Table 4.19.

Table 4.19: Responses to Interview Question #2
Did the way the content was presented motivate you to complete the assignment? If so, in what ways? If not, why?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional students</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Non-traditional students</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>

The majority of the non-traditional students had positive comments on the content presentation as a motivational factor for completion:

Yes, the way the content was presented motivated me to complete the assignment. The content was presented in a way in which students can relate better. The chapters are summarized and included the important aspects of the subject matter and provided related studies and links for better understanding. (Non-traditional, History)
I felt the content was presented in a professional manner and the way it was presented did help get me motivated to complete the assignment. It was easy to access and the assignments were clear and easy to understand. (Non-traditional, Sociology)

Yes, the content was presented in multi-layers, motivating you to probe into the issues of the text or unit to answer critical thinking assignments. Also, it was interesting to hear what our peers were thinking and to further delve into the issue by responding and questioning others of their opinion. (Non-traditional, Sociology)

The comments of the two traditional students who felt that the content presentation did not motivate them were:

There were a couple of assignments that did seem intriguing but there was a lot of material to be covered and sometimes there was just too much to worry about, very overwhelming. (Traditional, Sociology)

To be honest, it was hard to find a way to keep myself interested in the subject. But, I am the type of person who prefers online courses rather than attending on-campus classes. (Traditional, Sociology)

The comments provide some insight into instructional design and help to confirm what was previously shown in the discourse analysis. The traditional students in this study were not as intrinsically motivated and self-directing as non-traditional students. The traditional students did not participate fully in the discussion board and their participation dwindled as the weeks progressed. Curiously, the traditional students did pass the class successfully (C or better) indicating that they must have concentrated on the reading materials and passing the exams while minimizing their participation in the discussion board. The discussion board was 20% of their grade.

The third research question, “What are the key indicators of self-directed learning in adult learners in the community college setting?” is addressed by the interview question, “What was the main factor in motivating you to complete the course
successfully? Why is this?” Responses to this question were overwhelmingly centered on grades as shown in Table 4.20.

Table 4.20: Responses to Interview Question #3

What was the main factor in motivating you to complete the course successfully? Why is this?

<table>
<thead>
<tr>
<th></th>
<th>Grade/Credit</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional students</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Non-traditional students</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>

Of the 11 respondents, nine students said that their main motivation to complete the course was for either credit or grade. Some of the responses to this question included:

Honestly, the main factor was my GPA, and how I would not settle for any less than an “A” in the course. However, I am also very interested in history, and I really enjoyed the way the course is presented because I feel that it touches on topics that would not normally be addressed in a typical history text book. (Non-traditional, History)

Getting credit for the class was the main motivating factor to complete the course. I did learn new things about history but just because of the reading. (Non-traditional, History)

The main factor which motivated me was getting a good grade in the course, which is probably the most predominating factor among students. However, I also found most of the material relevant and interesting, which made me want to learn more. (Non-traditional, Sociology)

One traditional student responded that her motivation to complete the course was important for her future:

The main factor of motivation to complete anything successfully is my future. I need to do the best I can in whatever I am doing in the present to
have a better future for myself as well as my family. (Traditional, Sociology)

From the responses to the third interview question, grades or course credit is a huge motivating factor for community college students. This is an indication that extrinsic motivation (grades/credit) may play a greater role for community college students regardless of age.

Summary of Findings in Phase Two

The research questions, “How useful is the instructional method of using discussion boards in adult learning?” and “What are the key indicators of self-directed learning in adult learners in the community college setting?” was addressed by the discourse analysis and follow up interview questions. Non-traditional students have a higher motivation to participate in the discussions than traditional students. Non-traditional students are self-directing and incorporate motivational strategies such as prior experience, knowledge, and problem-solving in their learning. When intrinsically motivated to learning, adults want to continue to learn. It appears that the discussion board may be useful to enhance students’ learning, as shown in the evidence; however, traditional students may need more facilitation for self-directed learning if they are more extrinsically motivated. The difference in the use of the discussion boards by the two instructors presented an opportunity for a wider range of feedback. In a separate correspondence between the researcher and the history instructor, the instructor commented on why he didn’t use the discussion board in the traditional format:

I have found that the responses to other classmates were often trivial and of not much value. I encourage discussion when appropriate, but students tend to be deadline motivated and work close to deadlines anyway. Many
of my students actually do not enjoy having to put up responses on the
discussion board because many of them feel that they have little to add or
just have opinions which have nothing to do with content.

One of the key indicators of self-directed learning in the community college
setting, as evidenced by the literature and the responses in this study, is intrinsic
motivation. Course presentation helps to motivate students to learn when they are
encouraged to apply prior knowledge and experience. Adult learners are intrinsically
motivated when they know that performing activities will bring satisfaction while
learning. Course information informs the adult learner of the benefits and value of
learning the subject matter, which addresses their need to know. The second key indicator
of self-directed learning is that adults must be given the tools in order to make meaning
of the way in which they may approach learning. Adult learners will build upon their
prior knowledge and experiences in order to adjust to the online environment. Although
not considered a key-indicator for self-directed learning, both non-traditional and
traditional students in this study were extrinsically motivated by grades and/or credit.
Chapter 5: Summary and Conclusion

In this chapter, I present a summary of the study and the conclusions drawn from the data presented in Chapter 4. A discussion of the implications for action and recommendations for research are also presented.

Summary of the Study

This study focused on two successful online courses, history and sociology, at a community college in a large urban city in southern California. The courses were regarded as successful on the basis of a greater number of students receiving a C or better compared to other online classes. Instructional methods based on adult learning principles were investigated using a survey instrument and discourse analysis. Interview questions were also used to help triangulate the findings of the instrument and discourse analysis. In addition to online instructional methods, attention was given to how the online mode of instruction may affect traditional and non-traditional student performance.

Overview of the Problem

The growth of online learning throughout the nation has increased over the past decade. In the California Community Colleges System, the largest system of higher education in the nation, online courses make up 5.64% (32,417) of the total course offerings of 574,823 system-wide. The success rates of online students at 54% have not equaled the success rates (65%) of students in traditional courses. Online learning is attractive to students as the mode of delivery offers a convenient learning environment given work schedules and personal obligations. The demand for online courses has led community colleges to adopt course management systems. Course management systems
provide online instructors with tools to help develop online courses quickly and easily but
attention to pedagogical methods and learning styles have not been the focus.

*Purpose statement and research questions.*

This study investigated instructional methods based on seven adult learning
principles and how they might contribute to success of adult online learners in the
community college setting. This study also focused on indicators of self-directed learning
in traditional (less than 24 years old) and non-traditional (more than 25 years old) student
performance. Three research questions were investigated:

1. How does instructional design (content presentation) and instructional methods
   based on adult learning principles contribute to student motivation to learn?

2. How useful is the instructional method of using discussion boards in adult
   learning?

3. What are the key indicators of self-directed learning in adult learners in the
   community college setting?

*Review of the methodology.*

This was a two-phase study using both quantitative and qualitative data and
analysis. In Phase One, the Adult Learning Inventory (Colton, 2002) was used in a
modified format to determine the extent to which instructional methods based on adult
learning principles were applied and to answer the first research question, “How does
instructional design (content presentation) and instructional methods based on adult
learning principles contribute to student motivation to learn?” In Phase Two, qualitative
data and discourse analysis were used to answer the second and third research questions: “How useful is the instructional method of using discussion boards in adult learning?” and, “What are the key indicators of self-directed learning in adult learners in the community college setting?” In Phase Two of the study, discourse analysis and interview questions were used to help clarify the findings of the survey.

*Findings related to intrinsic motivation.*

The results in Phase One provide the answer to the first research question and showed evidence that the Adult Learning Inventory (ALI), in its modified format, was useful in assessing instructional methods based on adult learning principles. However, using a five-point Likert scale did not provide enough scaling to fully ascertain whether the instructional methods as stated were understood by the students. For example the instructional method, “Models of ‘best practice’ behavior are provided in order to let students know what they are doing compared to a known model” appeared to be rather ambiguous. Although the students in both cases rated the instructional method as “agree” the instructors did not explicitly inform the students of what exactly was considered “best practice” behavior (other than following instructions that the instructor posted in his syllabus and in the announcements feature of the course management system). The ALI should be reviewed to reflect language that clearly outlines the instructional methods described. Both classes seemed to have succeeded in motivating higher than average completion of the course with a C or better, but it was unclear, especially without comparison classes, to know if it was the instructional methodology used or the desire of the students to get credit to meet their own goals that was the strongest motivator to
complete the course. However, the overall results from the ALI survey indicated that most students agreed that key components of adult learning principles were in place in these two courses. The goals, expectations, and assignments were clear and the syllabus guided their work sufficiently for them to complete the course by themselves. As the qualitative data showed, the non-traditional students seemed to display more intrinsic motivation than traditional students, but the motivation seems to be more a function of maturity than course design.

The evidence and literature showed that non-traditional students were more motivated to complete the assignments and were more persistent in their postings while traditional students’ postings dwindled over time. As Bye et al., (2007) showed in their study, non-traditional students showed a higher level of intrinsic motivation to learn than traditional students. Their study provides further evidence for the findings in this study that there is a positive effect of the interaction of age and intrinsic motivation to learn.

*Findings related to use of the discussion boards.*

The discourse analysis and interview questions in Phase Two provided insights into research questions two and three regarding the use of discussion boards and the characteristics of self-directed learners and the cognitive strategies they may employ to become successful online learners in the community college setting. A major consideration of adult learning theories suggests that adult learners obtain a greater satisfaction if allowed to share their knowledge within a group. In the online context, sharing of knowledge among peers occurs predominantly through discussion board postings. This study found that the instructor used the discussion board in the sociology
classes to allow students to share their knowledge, but the history instructor did not. The difference in the use of technology by the two instructors presented a wider range of feedback from the students who participated in the survey and interview questions. Non-traditional students in the sociology course posted more responses than the traditional students and brought in their prior experience and knowledge more frequently into the discussions, key attributes of the adult learners. Students in the history course showed disappointment in having to use the discussion board only for the posting of assignments rather than to use it for peer-to-peer exchanges. In both cases there seemed to be little evidence of instructor active facilitation of class online discussion through the discussion board.

*Findings on indicators of self-directed learners.*

There are two key indicators of self-directed learning that have been gleaned from this study. The first key indicator is intrinsic motivation. According to Knowles (1975), adult learners are intrinsically motivated when they know that performing activities will bring satisfaction while learning. As evidenced in this study, traditional and non-traditional students in the community college setting are largely motivated by grades; however, non-traditional students in this study seemed to be willing to invest and engage more in the discussion board assignments. Other studies have indicated that well-presented content will intrinsically motivate the adult learner in the learning process (Jaffe, 2003; Koehler & Mishra, 2005; Oliver & Herrington, 2003). The student rankings on the ALI survey in this study suggest that in general students perceived these courses
were “well-presented” and the non-traditional students in the sociology class confirmed higher levels of intrinsic motivation through their participation on the discussion boards.

The second key indicator of self-directed learning is that adults will build upon their prior knowledge and experiences in order to adjust to the online environment. What also may be gleaned from this limited study is that the maturity of the adult learner and prior experiences are also factors in self-directed learning as indicated by the responses to the discussion board postings and interviews (Bye et al., 2007).

**Conclusion**

As online learning continues to grow in California community colleges, online course developers must recognize the shift in the pedagogical paradigm from the traditional classroom to the virtual classroom. As evidenced in the Speak Up National Research Project, which provides an insight into the learners of the 21st century, educators have not kept up with emerging technologies in the K-12 classrooms (Project Tomorrow, 2010). The access to technology outside of the classroom has enabled the 21st century learner to develop sophisticated skills in the use of advanced communications and collaborative tools:

Students, regardless of community demographics, socio-economic backgrounds, gender and grade, tell us year after year that the lack of sophisticated use of emerging technology tools in school is, in fact, holding back their education and in many ways, disengaging them from learning. In many communities and states, this hard realization that today’s classroom environment does not mirror the way today’s students are living their lives outside of school or what they need to be well prepared to participate, thrive and compete in the 21st century economy is actually exacerbating the existing relevancy crisis in American education (Project Tomorrow, 2010, p. 1).
In order to increase the success rates of online learners, course developers need to consider the shift away from traditional classroom pedagogy and investigate the ways in which to utilize course management tools to engage and motivate learners. Adult learning principles, while they have pertained to the adult learner, may also play a significant role in building a new pedagogical construct that addresses both traditional and non-traditional students in the online environment. The attributes of the 21st-century learners are similar to the definition of the adult learner as the 21st-century learners are “increasingly taking responsibility for their own learning, defining their own education path through alternative sources, and feeling not just a right but a responsibility for creating personalized learning experiences” (Project Tomorrow, 2010, p. 2). California community colleges have the unique opportunity to offer the next generation of learners an engaging and fulfilling educational experience through online learning. If these online courses are well-designed using learning principles, they could support and facilitate all students’ intrinsic motivation and self-directed learning behaviors.

Limitations

Although the Adult Learning Inventory (ALI) has been used only as a check-off inventory by a few instructors and the survey has been shown to have high reliability coefficients, it has not be previously used in the Likert-response form administered to students as in this study. The limited response rate to only two different online courses in one community college is insufficient to test its full validity. Thus a limitation to this study is the absence of sufficient research that validates the ALI as an instrument to test the absence or presence of adult learning concepts embedded in an online course.
Further, the low response rates from the interview questions cannot be generalized to other online courses but may have significance for further research in the area of applying adult learning principles in online course development and the use of the discussion board.

Implications for Theory

The adult learning principles studied in this paper have been researched over the course of 30 years. Their recent application to online learning is congruent to the self-directed learning necessary for student success in the online environment. As technology provided an added dimension to self-directed learning, research studies have produced various models for understanding self-directed learning in the online context. Although Knowles’s (1975) original theories have been massaged and re-shaped, the foundation remains the same: the adult learner is independent, intrinsically motivated, and self-directing. Similarly, the attributes of the next generation of learners, due largely in part to their exposure to technology, are more self-motivated and self-directed through their use of available technologies outside of the classroom learning. In addition, some students are experiencing greater use of technology in their classrooms. The learning experiences of these “digital natives” differ from early generations of community college students and therefore, instructors must modify their instructional practices to more effectively use the technology available in their classes. This study suggests that in the community college setting, adult learning principles may be a useful tool in designing online courses. However, these learning principles need to be applied and measured in new ways that
take into account the advances in technology and the needs of digital learners. Better tools are needed for capturing these complex theoretical constructs of learning.

**Implication for Educational Practice**

Educators in the community college setting have unique opportunities to discover the best practices for online learning. The student population, made up of both traditional and non-traditional students, almost equally, presents instructors with the challenge of balancing their instruction to address both groups’ learning needs. Incorporating the technologies available in course management systems may require a shift away from traditional methods found in the classroom. The use of the discussion board cannot emulate stimulating group discussions as experienced in the traditional classroom because of the asynchronous nature of the online environment (Curtis & Lawson, 2001). Hence, reconsideration of pedagogical methods is necessary in order to provide interactivity and engagement in the online classroom. Adult learning principles provide the foundation on which to build a new pedagogical construct of self-directed learning in the online environment. The student success rate for online learning in California community colleges may be improved if course developers consider applying the fundamental principles of adult learning to their instructional methods and incorporating technologies that encourages the self-directedness of online learners.

**Recommendations for Future Research**

This study, while being limited, may have implications for future research. The Adult Learning Inventory (ALI) or a similar instrument that measures the presence or absence of adult learning principles within an online course should be investigated more
fully. It is unclear whether the application of adult learning principles will lead to student success; however, future research in this area may be to develop an instrument that not only measures the extent to which instructional methods based on adult learning principles are applied in online courses but also measures the influence of the principles on student success. The ALI seems an appropriate tool in determining the inclusion of instructional methods based on adult learning principles in online courses; however, more data are required to test its validity. In addition, using a five-point Likert scale resulted in many of the responses falling between the mean ranges of 3.1 to 3.5. Perhaps an expanded range of the scale to a six-point Likert scale (strongly disagree, disagree, slightly disagree, slightly agree, agree, and strongly agree) may produce a more refined indication of the presence of instructional methods based on adult learning principles.

A critical adult learning principle is that “because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in order to adopt alternate ways of thinking.” This principle suggests that discussion boards could serve as a key instructional method in facilitating students to reveal their concepts and beliefs and foster a discussion that could clarify misconceptions about the content of the class. In this study neither professor fully developed the discussion board as a tool for addressing this learning principle. Further research into the appropriate use of the discussion board in the community college setting is needed. While non-traditional students were more persistent in posting comments on the discussion board in the sociology class, the responses from both the non-traditional and traditional students showed that the activity did not always add to their knowledge of the topic or clarify
misunderstandings. Although the history instructor used the discussion board to post students’ work and created a virtual presence by critiquing the submissions and students were able to read their classmates’ submissions and comments by the instructor, he did not use the discussion board to facilitate deep conversations. Research that addresses the learning needs of both traditional and non-traditional students in the community college setting may lead to a balanced use of the discussion board as a viable instructional method.

Finally, future research into the external and intrinsic motivation of community college students may help to inform course developers of their motivational strategies to complete the course. The responses in this study indicated that grades and receiving credit for the course was their major motivation for successful completion of the course. To that end, more research is needed to assess how student learning outcomes are achieved in the online environment.
Appendix A: Online Adult Learning Inventory
Online Adult Learning Inventory

For Assessing the Application of Adult Learning Principles to Web-Based Instruction

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INTRODUCTION:
The Online ALI (Adult Learning Inventory) can be used both as a formative evaluation for assessing the application of classical adult learning principles to the development of fully-mediated World Wide Web-based instruction and as an evaluation tool to assess completed courses.

DIRECTIONS:
Place a checkmark either in the YES or NO box.

NOTE:
Reliability statistics, the average measure intraclass correlation, gave a range from .8018 to .9360 from a field test, indicating moderate to high positive values for inter-rater reliability.

A. Adults' orientation to learning is problem-centered. Thus they are motivated to learn and ready to learn to the extent that they perceive learning will help them perform tasks or deal with problems that can relate to their life situations.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>1. Assignments incorporate activities to which students can relate; to real situations or events.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Content and theory are presented in a practice-oriented context.</td>
<td></td>
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<tr>
<td>3. Opportunities are included for solving problems in groups.</td>
<td></td>
<td></td>
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<tr>
<td>4. Assignments reflect the maturity level of adult learners.</td>
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<tr>
<td>5. Students are encouraged to apply their life and work experiences to learning.</td>
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B. Adults need to know what learning will occur, how learning will be conducted, and why learning is important.

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<tr>
<th></th>
<th>YES</th>
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<tbody>
<tr>
<td>1.</td>
<td>An online syllabus identifies key course activities, assignments, and grading criteria.</td>
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</tr>
<tr>
<td>2.</td>
<td>Clear expectations are set for the course.</td>
<td></td>
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<tr>
<td>3.</td>
<td>Clear expectations are set for each learning unit.</td>
<td></td>
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<tr>
<td>4.</td>
<td>Clear expectations are set for how projects or papers are to be completed.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Models of “best practice” behavior are provided in order to let students know what they are doing compared to a known model.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Information is provided about the course’s intended learning outcomes and benefits.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Information is provided about the skill and technical requirements for the course.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>At the beginning of each lesson, learners are oriented to the objectives or central focus of that lesson.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>At the beginning of each lesson, a summary of the required activities is presented.</td>
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</table>

C. Adults come into an educational setting with a wide range of experiences which can serve as a basis for new learning.

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<thead>
<tr>
<th></th>
<th>YES</th>
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<tbody>
<tr>
<td>1.</td>
<td>If students are not familiar with each other, the class is opened with introductions.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Assignments encourage students to share and reflect upon their prior experiences.</td>
<td></td>
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<tr>
<td>3.</td>
<td>Course assignments allow students to incorporate their prior knowledge into their learning.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Guidance is provided to help students incorporate their life and work experience into learning.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Peer critiques or mentoring is encouraged and facilitated.</td>
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</table>
D. Because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in order to adopt alternate ways of thinking.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
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<tbody>
<tr>
<td>1. Orientation activities are provided at the beginning of the course that allow learners to develop the skills necessary to complete the course (e.g., “introduce yourself to the discussion forum,” “send me e-mail saying you were able to log on”).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The instructor of the course encourages all students to post responses to questions, read other comments, and reflect. (Threaded discussions allow students to see and reflect on each other’s responses in comparison to their own, which has an enormous benefit in assessing different attitudes.)</td>
<td></td>
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<tr>
<td>3. The course provides a conceptual framework that helps learners to develop new conceptual frameworks or mental models.</td>
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<tr>
<td>4. The instructor uses common language characteristics between old and new models or concepts and introduces new jargon appropriately.</td>
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<td></td>
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<tr>
<td>5. Students are encouraged to share with other students their derivation of meaning and their progress through discussion postings, reflection papers that are posted, or e-mail.</td>
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</table>

E. Adults have a self-concept of being responsible for their own decisions, for their own lives, and their own learning. They need to be provided the tools and opportunities for independent, self-directed learning.

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<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>1. The course is designed to allow students to direct their own learning.</td>
<td></td>
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<tr>
<td>2. The instructor provides organizers that allow students to manage study and homework with minimal questions.</td>
<td></td>
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<tr>
<td>3. The instructor provides flexibility in assignments that allow for students to work ahead.</td>
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<td></td>
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<tr>
<td>4. The instructor encourages and reinforces self-sufficiency through timely feedback.</td>
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</table>
**F.** In any group of adults there will be a wider range of individual differences, thus the individualization of learning experiences is important in many situations.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>1.</td>
<td>A variety of instructional methods and media are used to meet the differing needs and learning styles of students.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Students can move through the instruction at their own pace.</td>
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</tr>
<tr>
<td>3.</td>
<td>Students can review previous learning whenever they want.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The instructor is available to coach students or to suggest outside mentors.</td>
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<tr>
<td>5.</td>
<td>The instructor provides links to a wide variety of web resources.</td>
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<tr>
<td>6.</td>
<td>Students with different levels of computer skills and resources can succeed in this course; the course conforms to accessibility requirements.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Ample time is allotted for students to master the content.</td>
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</table>

**G.** Situational differences, or the context of the learning environment, impact the learning process of adults.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
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<tbody>
<tr>
<td>1.</td>
<td>Support services are available in this course to meet student needs. (They may include the following services: textbook purchasing, library services, disability services, admissions, enrollment, and transfer of credit.)</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The psychological climate of the course is conducive to learning. It suggests to the student that the learning activity is going to be rewarding and positive.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The screen is easy to read.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Directions are easy to follow.</td>
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<tr>
<td>5.</td>
<td>The learning resources in this course can be personalized.</td>
<td></td>
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<tr>
<td>6.</td>
<td>Students work in small groups.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The instructor has a procedure for determining each student's support structure in order to find ways to supplement that support structure, if needed.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Back up assistance is available to students outside the major communications media used for this course (800 number, help desk, etcetera).</td>
<td></td>
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</tbody>
</table>
Appendix B: Modified Adult Learning Inventory (five-point Likert scale)
1. Consent

The purpose of this survey is to examine students’ perceptions of online courses. Please complete this survey based on your current online course. By completing the following survey, you have agreed to participate in this study. If you would like to participate in the interview portion of this study, please include your email and/or phone number in the space provided.

1. Please enter your email or phone number if you would like to participate in the interview.
   Name: 
   Email Address: 
   Phone Number:

2. Gender
   □ Male  □ Female

3. Please state your age in years (please note that only students 18 or over are able to participate in this study).

2. Motivation

Adults’ orientation to learning is problem-centered. Thus they are motivated to learn and ready to learn to the extent that they perceive learning will help them perform tasks or deal with problems that can relate to their life situations. Please answer the following questions as it pertains to your current course.

4. Assignments incorporate activities to which you can relate to real situations or events.
   □ Strongly Disagree  □ Disagree  □ Agree  □ Strongly Agree  □ Don’t Know

5. Content and theory are presented in practice-oriented context.
   □ Strongly Disagree  □ Disagree  □ Agree  □ Strongly Agree  □ Don’t Know

6. Opportunities are included for solving problems in groups.
   □ Strongly Disagree  □ Disagree  □ Agree  □ Strongly Agree  □ Don’t Know

7. Assignments reflect the maturity level of adult learners.
   □ Strongly Disagree  □ Disagree  □ Agree  □ Strongly Agree  □ Don’t Know

8. Students are encouraged to apply their life and work experiences to learning.
   □ Strongly Disagree  □ Disagree  □ Agree  □ Strongly Agree  □ Don’t Know
3. Need to Know

Adults need to know what learning will occur, how learning will be conducted, and why learning is important. Please answer the following questions as it pertains to your current class.

9. An online syllabus identifies key course activities, assignments, and grading criteria.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

10. Clear expectations are set for the course.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know

11. Clear expectations are set for each learning unit.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know

12. Clear expectations are set for how projects or papers are to be completed.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know

13. Models of "best practice" behavior are provided in order to let students know what they are doing compared to a known model.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know

14. Information is provided about the course's intended learning outcomes and benefits.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know

15. Information is provided about the skill and technical requirements for the course.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know

16. At the beginning of each lesson, learners are oriented to the objectives or central focus of that lesson.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know

17. At the beginning of each lesson, a summary of the required activities is presented.
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
    - Don't Know
### 4. Adult Experiences

Adults come into an educational setting with a wide range of experiences which can serve as a basis for new learning. Please answer the following questions as it pertains to your current class.

18. If students are not familiar with each other, the class is opened with introductions.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

19. Assignments encourage students to share and reflect upon their prior experiences.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

20. Course assignments allow students to incorporate their prior knowledge into their learning.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

21. Guidance is provided to help students incorporate their life and work experience into learning.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

22. Peer critiques or mentoring is encouraged and facilitated.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know
5. Adult’s Prior Experience

Because of their prior experience, adults tend to develop mental habits and biases and may need to reassess their beliefs in order to adopt alternate ways of thinking. Please answer the following questions as it pertains to your current class.

23. Orientation activities are provided at the beginning of the course that allow learners to develop the skills necessary to complete the course (e.g., “introduce yourself to the discussion forum,” “send me e-mail saying you were able to log on”).
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

24. The instructor of the course encourages all students to post responses to questions, read other comments, and reflect. (Threaded discussions allow students to see and reflect on each other’s responses in comparison to their own, which has an enormous benefit in assessing different attitudes).
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

25. The course provides a conceptual framework that helps learners to develop new conceptual frameworks or mental models.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

26. The instructor uses common language characteristics between old and new models or concepts and introduces new jargon appropriately.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

27. Students are encouraged to share with other students their derivation of meaning and their progress through discussion postings, reflection papers that are posted, or e-mail.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

6. Adult’s Self-Concept

Adults have a self-concept of being responsible for their own decisions, for their own lives, and their own learning. They need to be provided the tools and opportunities for independent, self-directed learning. Please answer the following questions as it pertains to your current class.

28. The course is designed to allow students to direct their own learning.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

29. The instructor provides organizers that allow students to manage study and homework with minimal questions.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

30. The instructor provides flexibility in assignments that allow for students to work ahead.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know

31. The instructor encourages and reinforces self-sufficiency through timely feedback.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don’t Know
7. Adult's Individual Differences

In any group of adults there will be a wider range of individual differences, thus the individualization of learning experiences is important in many situations. Please answer the following questions as it pertains to your current class.

32. A variety of instructional methods and media are used to meet the differing needs and learning styles of students.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

33. Students can move through the instruction at their own pace.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

34. Students can review previous learning whenever they want.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

35. The instructor is available to coach students or to suggest outside mentors.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

36. The instructor provides links to a wide variety of web resources.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

37. Students with different levels of computer skills and resources can succeed in this course; the course conforms to accessibility requirements.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know

38. Ample time is allotted for students to master the content.
   - [ ] Strongly Disagree
   - [ ] Disagree
   - [ ] Agree
   - [ ] Strongly Agree
   - [ ] Don't Know
8. Adult's Situational Differences

Situational differences, or the context of the learning environment, impact the learning process of adults. Please answer the following questions as it pertains to your current class.

39. Support services are available in this course to meet student needs. (They may include the following services: textbook purchasing, library services, disability services, admissions, enrollment, and transfer of credit.)

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

40. The psychological climate of the course is conducive to learning. It suggests to the student that the learning activity is going to be rewarding and positive.

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

41. The screen is easy to read.

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

42. Directions are easy to follow.

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

43. The learning resources in this course can be personalized.

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

44. Students work in small groups.

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

45. The instructor has a procedure for determining each student's support structure in order to find ways to supplement that support structure, if needed.

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

46. Back up assistance is available to students outside the major communications media used for this course (800 number, help desk, etcetera).

   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
   - Don't Know

9.

Thank you for participating in this survey!
Appendix C: Student Interview Questions

1. Did the way the content was presented motivate you to complete the assignment? If so, in what ways? If not, why?

2. Did the discussion postings increase your knowledge of the topic at hand? If so, how? If not, why?

3. What was the main factor in motivating you to complete the course successfully? Why is this?
References


California State Chancellor’s Office (2009). *Periodic Report on Distance Education 2006-2008*.


California State University-Chico (2003). Rubric clearly describes exemplary online instruction. *Distance Education Report* 7, 23(5), 1-2.


