

FACULTY PERCEPTIONS OF FACILITATING SELF-
REGULATION IN ONLINE COURSEWORK AT A
PUBLIC UNIVERSITY: A CASE STUDY

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Submitted to the Faculty of the
Graduate College of the
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in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
December, 2021

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ACKNOWLEDGEMENTS

Every day I am forever grateful for the privilege of interacting with students. I teach because I love students. As a human being and an educator, I am able to grow because I am surrounded by nurturing and encouraging family and friends. I did not arrive at this moment alone; many have traveled with me. I am grateful.

I am grateful for my husband, my friend, and the man I share everything with Tom Burchfield. His endless support is my most valued asset.

I am grateful for my boys, Caleb and Joshua. They are men above all men. It is a privilege to share all my life with them.

I am grateful for Carole Lewandowski. As my advisor at Oral Roberts University, she never wavered in her belief in me and support for me. She helped me believe in myself. She helped me trust the Lord for the future when I was not sure what the future looked like. All I knew was I wanted to teach, and I wanted to teach in higher education.

I am grateful for Jessica Taylor and Boss Richards. They are true friends.

I am grateful for Jessica Taylor and Tara Ostrander. They allowed me to lean on them for editing. They are great teachers because of their strengths and expertise.

I am grateful for my parents and extended family.

I am grateful for all the friends who have poured into my life and believed in me. They have strengthened and sharpened me.

I am grateful for my committee: Dr. Neumann, Dr. Self, Dr. Sanogo, and Dr. Harris. They offered me wisdom and valuable insight.

I am grateful for my advisor, Dr. Harris. He offered an endless supply of patience, encouragement, and an ability to push me to my fullest capacity.

Name: LYNETTE BURCHFIELD

Date of Degree: DECEMBER, 2021

Title of Study: FACULTY PERCEPTIONS OF FACILITATING SELF-REGULATION
IN ONLINE COURSEWORK AT A PUBLIC UNIVERSITY: A CASE
STUDY

Major Field: SCHOOL ADMINISTRATION

Abstract: Online course enrollments continue to increase, and even more online courses are now offered as a result of the pandemic (O'Keefe et al., 2020). Although some students succeed in online courses (Battalio, 2009; Murray et al., 2012), most either earn low grades or do not complete the courses (Angelino et al., 2007; Wilson & Allen, 2011). Some courses are more successful than others in facilitating the learning process for online students (O'Keefe et al., 2020; Johnson, N. et al., 2020). Self-regulation has proven to be a key feature for online learning (Carvalho, Sana, & Yan, 2020). One way to explain this issue is through the theory of self-regulation. Tabak and Nguyen (2013) developed a conceptual model of self-regulation in online learning environments that contains components from three theories: Self-Regulation Model from Bandura's Social Cognitive Theory (1991), Technology Acceptance Model (Davis, 1989), and the Five Factor Model of Personality (Barrick & Mount, 2005). Tabak and Nguyen's (2013) model explains self-regulation in an online learning environment as a continuous looping system and accounts for the roles and interaction of intrinsic factors and extrinsic factors, perceived ease of use and perceived usage as antecedent effects on the forethought, performance, and self-reflection phases of self-regulated learning. This qualitative case study uses constructionism to explore the significance of the modifications effective instructors made to course design and to the student learning factors and processes in their online courses that facilitated self-regulated learning. This case occurred during the crisis of the COVID-19 pandemic. Findings in this study indicate instructors used course design modifications exemplifying support for and facilitation of learning processes so students were able to progress through the overall learning process smoothly. The results of this study could provide key insights for online educators to better support student self-regulation in online courses and may also provide educators with possible improvements in course construction, academic support, and time saving measures connected to online students and online courses.

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CHAPTER I

INTRODUCTION

Allen and Seaman (2003, 2007, 2013, 2016) reported a significant, steady increase in online learning enrollment as overall higher education enrollments continued to decline. This rapid growth in online course enrollment occurred for several reasons. One reason was that many students arrived on university campuses with the technical skills and tools necessary to participate in an electronic environment (Crook & Barrowcliff, 2001; Hawkins et al., 2008). For example, Hawkins et al. (2008) reported that more than half of students in public institutions used their own computer and “85.8% of students in private institutions” used their own computers (p. 31). Another reason for the rapid growth was that institutions were better prepared to engage students in an online environment (Hawkins et al., 2008; Kotz & Essien, 2005). Hawkins et al. (2008) indicated almost 98% of institutions with residence halls offered high speed network connections in their residence halls. In this same report, Hawkins et al. (2008) found that among the schools they surveyed, “the mean percentage of classrooms with wired internet connectivity was 90.8%,” and “the mean percentage of classrooms with wireless internet connectivity was 65.3%” (p. 29). The most recent reason for growth is because of

the global pandemic caused by COVID-19. Currently, universities around the globe have students enrolled in online courses as a response to national and local lockdowns in order for students to continue their education (Johnson et al., 2020; Radha et al., 2020; UNESCO, 2020).

Research has indicated that while there was an increase in online enrollments, there was also significant attrition in those courses. Several studies indicated that attrition in online courses became a problem for many colleges (Boton & Gregory, 2015; Patterson & McFadden, 2009; Willging & Johnson, 2009). Angelino et al. (2007) stated, “Attrition rates for classes taught through distance education are 10 – 20% higher than classes taught in a face-to-face setting” (p. 1). Levy (2007) indicated similar findings in online course dropout rates in his study (p. 192).

At the time of this writing, it is virtually unknown how the pandemic caused by COVID-19 has affected student attrition and performance in online courses because research is still in the process of emerging. The Federal Student Aid Office of the United States Department of Education is aware that the educational disruption students are experiencing may cause them negative setbacks. The office has allowed universities more latitude in implementing online courses and has offered guidelines to universities for accommodating students who have experienced disruptions in their education to mitigate the setbacks (Office of Postsecondary Education, 2020).

Some researchers suggested self-regulated learning (SRL) was particularly important for students when they engaged in more autonomous forms of learning like studying information from social online learning environments like online courses (Shea & Bidjerano,

2010; Zimmerman 2008). Since SRL is important when seeking information from electronic sources, which is required by online coursework, then perhaps it is prudent to consider the processes that influence SRL in online courses to gain insight into the high attrition rates for online courses, as well as aid in mitigating severe setbacks students may experience in their education.

Statement of the Problem

Research indicated there was rapid growth in online course enrollments in higher education (Arkorful & Abaidoo, 2015; Sener, 2010; Volery & Lord, 2000). Moreover, because of the COVID-19 pandemic, more higher education institutions are currently offering online courses than ever before (Gallagher & Palmer, 2020). Research has also shown that online courses have become a staple for students rather than an option (Sener, 2010), and many students have selected online courses because of their advantages and perceived benefits such as flexibility of time and location, a student's ability to self-administer quizzes, and a student's ability to regulate the pace of learning (Arkorful & Abaidoo, 2015; Volery & Lord 2000).

Although more students have relied on online courses, research has indicated that some students succeed in these courses (Battalio, 2009; Murray et al., 2012), and many students either earn low grades or do not complete the courses (Angelino et al., 2007; Wilson & Allen, 2011). Further, even more online courses are now offered as a result of the pandemic, and some courses are more successful than others in facilitating the learning process for online students (O'Keefe et al., 2020; Johnson et al., 2020).

One way to address the issue above is through the theory of self-regulation (Carvalho et al., 2020). That is, some students may be successful in online courses and others not

because self-regulation factors and processes may be more prevalent in some online courses than they are in others. Tabak and Nguyen (2013) developed a framework to explain self-regulation factors and processes in online environments and specifically emphasize the importance of studies that explore “whether and how instructors can modify course design to increase self-regulated learning among students enrolled in online classes” (p. 125). In this study, Tabak and Nguyen’s (2013) theory of self-regulated learning was used as a lens to explore how instructors of successful online courses at a midwestern university facilitate self-regulated learning in their online courses.

Purpose of the Study

The purpose of this study was to explore, through the lens of Tabak and Nguyen’s theory of self-regulated learning in an online environment, how instructors of successful online courses at a midwestern university understood and facilitated self-regulated learning in their online courses.

Research Questions

1. How do instructors understand self-regulated learning?
2. How do instructors modify course design to increase self-regulated learning?
3. How do instructors modify student learning factors to increase self-regulated learning?
4. How do instructors modify student learning processes to increase self-regulated learning?
5. How does Tabak and Nguyen’s self-regulated learning in an online environment theory explain the above research questions?

Epistemological Perspective

Crotty (1998) explained that epistemology "is a way of understanding and explaining how we know what we know" (p. 3). Also, Crotty (1998) defined the epistemology of constructionism as a "view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interactions between human beings and their world, and developed and transmitted within an essentially social context" (p. 42). For this study, knowledge was constructed by effective online course instructors about student self-regulation through their interaction with online students in the social context of an online course; therefore, constructionism was an appropriate perspective for this study.

Theoretical Framework

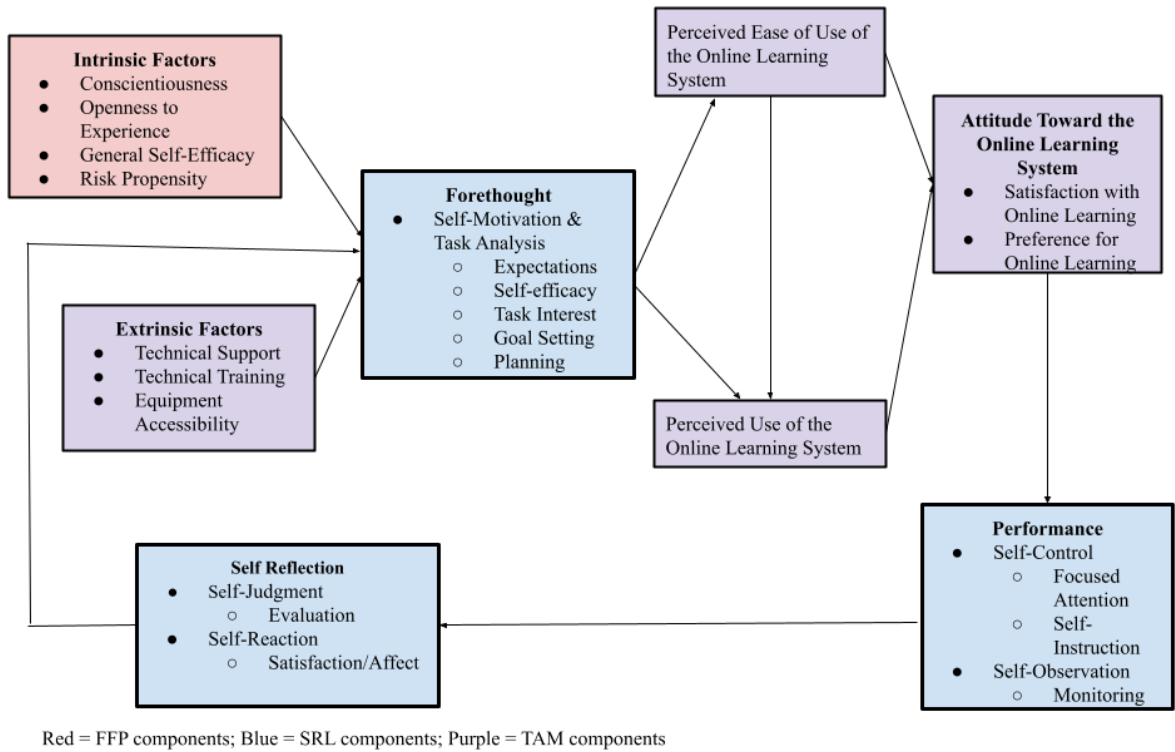
Tabak and Nguyen's (2013) framework was used as a lens to explore the self-regulatory processes of selected online courses. Tabak and Nguyen (2013) developed a conceptual model of self-regulation in online learning environments that contains components from three theories: Self-Regulation Model from Bandura's Social Cognitive Theory (Bandura, 1991), Technology Acceptance Model (Davis, 1989), and the Five Factor Model of Personality (Barrick & Mount, 2005). In Chapter 2, I explain these theories' foundational significance to Tabak and Nguyen's framework in further detail. Tabak and Nguyen (2013) proposed this model as a means "to explicate the processes and factors that contribute to effective online learning and online student course performance" (p. 116). Their model helps "[explain] student attitudes toward online learning and performance in online learning environments, and to understand factors that lead to effective online course management systems" (Tabak & Nguyen, 2013, p. 117).

Tabak and Nguyen's (2013) model explains self-regulation in an online learning environment as a continuous looping system that identifies intrinsic and extrinsic factors as the two variables that influence student self-regulation. Intrinsic factors include conscientiousness, openness to experience, general self-efficacy, and risk propensity. Extrinsic factors include technical support, technical training, and equipment accessibility. Figure 1 offers a depiction of these looping processes. During the Forethought phase, a student develops expectations, self-efficacy, task interest, goal setting, and planning for the learning tasks ahead. Tabak and Nguyen (2013) also identified perceived ease of use (PEU) of the online learning system and perceived usefulness (PU) of the online learning system as variables that influence a student's attitude towards the online learning system. The PEU and PU variables in turn influence the Performance phase of self-regulation in which a student uses self-control and self-observation. Finally, a student will enter the Self-Reflection phase of self-regulation in which he uses self-judgement, which is evaluation, and self-reaction, which includes satisfaction and affect. The self-regulation loop then begins again with intrinsic and extrinsic factors influencing the Forethought phase.

In essence, Tabak and Nguyen's (2013) conceptual model accounts for the roles and interaction of intrinsic factors and extrinsic factors as antecedent effects on forethought, technology acceptance, and technology adoption. Their model also accounts for the interaction of PEU of an online learning system and PU of an online learning system as antecedent filters for a student's attitude toward an online learning system, which influences the performance aspect of a student's self-regulation. Figure 1 below illustrates these interactions.

Figure 1

A Conceptual Model of Self-Regulation in Online Learning Environments



Note. Adapted from Tabak, F., & Nguyen, N. T. (2013). Technology acceptance and performance in online learning environments: Impact of self-regulation. *Technology*, 9(1), 116-130.

Procedures

This qualitative case study was time and context bound. The context was a midwestern university accredited through the North Central Association of Colleges and Schools Higher Learning Commission. From this university, ten effective online instructors and pertinent support personnel were purposefully selected to explore how these instructors understood and facilitated self-regulated learning in their online courses between January 2020 and May 2021.

This study explored the self-regulated learning factors and processes through the lens of Tabak and Nguyen's (2013) self-regulation theory. As part of this exploration, I acquired instructors' understanding of self-regulation, their perspectives about the student learning factors and processes connected to student self-regulation, and the modifications they made to learning processes to aid student self-regulation.

Merriam's (1998) case study methodology guided this study's procedures. Merriam (1998) posited that a case study is an advantageous means of capturing and understanding the possible significant meanings and implications of many of the elements held within a highly complex social learning environment because the results allow for a rich and holistic portrait of the situation.

I utilized the data collection strategies of observation, artifact collection, and interviewing. According to Merriam (1998), "Purposeful sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (p. 61). I used purposeful sampling to ascertain, comprehend, and gain insight about how effective online course instructors modify their courses to support student self-regulation. The selection process is explained further in Chapter Three.

It is important to note how my personal background may have influenced this study. For eleven years, I primarily taught a variety of online courses in communication and composition, and I designed one of the courses as well. To minimize unnecessary bias in the study, I observed online courses in disciplines other than those I have taught. I also kept a personal journal to record any personal thoughts or responses connected to my observations

that may affect my observations and introduce potential biases to the inquiry. More on researcher bias is presented in Chapter III.

Definition of Terms

Course Management System (CMS) - “provides an instructor with a set of tools and framework that allows the relative easy creation of online course content and the subsequent teaching and management of that course including various interactions with students taking that course” (Meerts, 2003, p. 1).

Distance Education (DE) - Schlosser and Simonson (2009) defined DE as, “institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors” (p. 1).

Facilitate - an online course instructor provides a teaching presence that provides leadership and direction in a manner that allows students to develop an active social and cognitive presence in an online course environment (Garrison & Cleveland-Innes, 2005).

Online Courses - Allen and Seaman (2011) stated, “Online courses are those in which at least 80 percent of the course content is delivered online” (p. 7).

Online learning (OL) - “Internet-based courses offered synchronously and/or asynchronously” (Stern, 2016, para. 1).

Online Learning Environment (OLE) - context in which courses are delivered online via a learning management system (LMS) and the process of learning is built on activity-oriented work for which active participation, and “an intensive, initiative communication are necessary and cooperative and collaborative learning get an important role” (Simándi, 2017, p. 96). Presently, the OLE is available for traditional and/or distance learning.

Online Learning System (OLS) - “software used for managing course content, course tools, components, as well as allowing for links to other university services and departments. Often, the term OLS is used interchangeably to refer to a course management system (CMS)” (Coble, 2018).

Perceived Ease of Use (PEU) - Davis (1989) defined PEU as, “the degree to which a person believes that using a particular system would be free of effort” (p. 320).

Perceived Usefulness (PU) - Davis (1989) explained PU as “the degree to which a person believes that using a particular system would enhance his or her job performance” (p. 320).

Self-Directed Learning (SDL) - Loyens et al. (2008) describe SDL as a broader construct of learning, as compared to SRL, that contains a specific design feature of a learning environment which provide students “ a broader role in the selection of what will be learned and critical evaluation of the learning materials that were selected” (p. 418) and also includes an overlap of learning characteristics contained in SRL such as active engagement and goal directed behavior.

Self-Regulated Learning (SRL) - “self-regulated learning (SRL) refers to the self-directive processes and self-beliefs that enable learners to transform their mental abilities...proactive processes that students use to acquire academic skill, such as setting goals, selecting and deploying strategies, and self-monitoring one’s effectiveness” (Zimmerman, 2008, p. 166). SRL is most directly connected with a student’s regulation of his or her thinking and actions in a formal educational setting in order to achieve a specific academic goal (Wandler and Imbriale, 2017).

Social Cognitive Theory of self-regulation - “human behavior is extensively motivated and regulated by the ongoing exercise in self-influence. The major self-reflective mechanism operates through three subfunctions: self-monitoring of one’s behavior..., judgment of one’s behavior..., and affective self-reaction” (Bandura, 1991, p. 248).

Student learning factors - exterior factors to an online learning management system that influence a student’s ability to self-regulate. These factors are divided into categories: extrinsic factors, intrinsic factors, perceived ease of use of the online learning system, perceived use of the online learning system. Extrinsic factors include technical support, technical training, and equipment accessibility. Intrinsic factors include a student’s conscientiousness, openness to experience, general self-efficacy, and risk propensity. Perceived ease of use of the online learning system includes the degree to which a student believes that using the online learning system would be free of effort. Perceived use of the online learning system includes the degree to which a student believes that using the online learning system would enhance his or her academic performance (Tabak & Nguyen, 2013).

Student learning processes - Interior processes available within an online learning management system that influence students during the three stage cognitive phases of self-regulation: forethought, performance, and self-reflection. These interior processes may be controlled by an instructor and/or student which may in turn aid students in goal attainment and/or their attitude about the perceived ease of use or the ease of use of the online learning system (Tabak & Nguyen, 2013).

Universal course shell - “serves to store all the materials for an online course as designed by one or more subject matter experts and instructional designers...in the learning

management system on which the course will be taught (e.g., LearningStudio, Canvas, Blackboard)” (Darr, 2018, n.p.).

Summary of the Study

Some students enrolled in online courses complete the course and earn a satisfactory grade, whereas others demonstrate low achievement and often drop out of the course. This case study explored how instructors of successful online courses at a midwestern university understood and facilitated self-regulated learning in their online courses. The timeframe for the bounded case study was from January 2020 to May 2021. Tabak and Nyguen’s (2013) theoretical framework for self-regulation and the impact of intrinsic and extrinsic student learning factors and technology acceptance on performance in online learning environments guided this study.

The proceeding chapters include the following information: Chapter II contains a literature review discussing online learning and self-regulated learning in online courses; Chapter III explains the methodology of the study; Chapter IV offers a narrative description and analysis of data collected; Chapter V explains the data through Tabak and Nguyen’s (2013) lens of self-regulated learning in online environments; and Chapter VI provides findings, conclusions, implications, and recommendations.

CHAPTER II

LITERATURE REVIEW

The purpose of this literature review is to explain the existing research and scholarly literature relevant to online learning and self-regulation theory. Key topics discussed in this literature review include: (a) online learning surge; (b) online academic performance; (c) necessity for self-regulated learning in online courses; (d) framework for self-regulation; and (e) online learning environment structures.

Online Learning Surge

In recent years there has been rapid growth in online course enrollments in higher education (Arkorful & Abaidoo, 2015; Sener, 2010; Volery & Lord, 2000). Moreover, because of the COVID-19 pandemic, more higher education institutions are offering online courses than ever before (Gallagher & Palmer, 2020). Research has shown that online courses have become a staple for students rather than an option (Henreitus et al. 2019; Sener, 2010) and many students have selected online courses because of their advantages and perceived benefits such as flexibility of time and location, a student's ability to self-administer quizzes, and regulating the pace of learning (Arkorful & Abaidoo, 2015; Broadbent et al., 2020; Volery & Lord 2000).

Online Learning Development

Traditional American higher education was rooted in colonialism and focused on lecturing in a face-to-face setting as standard convention (Eckel & King, 2004; NA, 2016; Thelin, 2011). However, Allen and Seaman (2003) noted that traditional higher education began venturing into online education after the advent of the internet in 1989. During the early days of the internet, course content delivery options were based on two models, traditional and distance education (DE), and very few students utilized DE (Carnevale, 1999; Dibiase, 2000).

As universities explored using DE, online enrollments grew, and institutions offered online courses to their general population of students. Allen and Seaman (2005) reported that among the 1000 institutions they surveyed, 62.5% of undergraduate face-to-face courses were offered as online undergraduate courses as well, thus allowing online courses to be mainstream and pervasive. This new frontier of online courses and DE was no longer new ground for higher education but had moved into the status quo and offered new avenues for universities' online learning (OL). Finally, by 2010 Picciano et al. (2010) collected data over a six-year span and asserted, "the foundation for a transformation in higher education is in place" (p. 30).

Interestingly, Allen and Seaman (2003) surveyed 3,033 chief academic officers or university presidents to gather data about the quality and extent of online learning (OL) in the United States. Initially, online courses were a means to increase enrollment and build further revenue sources for colleges and universities; however, administrators across the nation began seeing OL as a critical component and a long-term strategy for their

institutions (Allen & Seaman, 2003; Allen & Seaman, 2005). Key findings for Allen and Seaman’s 2003 to 2011 reports are presented in Table 1.

Table 1

Online Enrollment Increases Allen and Seaman Reports 2003-2011

Semester	Number of students taking at least one online course	Percentage of institutions agreeing that online education is critical to long-term strategy
Fall 2002	1.6 million	48.8%
Fall 2003	1.9 million	53.5%
Fall 2004	2.3 million	56%
Fall 2005	3.2 million	58.4%
Fall 2006	3.5 million	59.1%
Fall 2007	3.94 million	58%
Fall 2008	4.6 million	Not Available
Fall 2009	5.6 million	59.2%
Fall 2010	6.1 million	63.1%
Fall 2011	6.7 million	69.1%

Based on the data in Allen and Seaman’s reports, online course enrollment grew by 5.15 million students over the course of approximately ten years. This was considered a rapid increase in online course enrollment in higher education and indicated that online course enrollment spread at a rapid rate across American university campuses during the early 2000s (Allen & Seaman, 2007; Allen & Seaman, 2011).

Further, in May of 2014 the National Center for Education Statistics (NCES) began reporting the number of undergraduate students who participated in distance

education courses and who enrolled solely in distance education courses in their Undergraduate Enrollment reports. Their reports also included the number of overall undergraduate enrollment. Their reports clearly indicated that although overall undergraduate enrollment declined, the number of students who participated in distance education courses and the number of students who enrolled solely in distance education courses increased. Based on their reports, from fall 2012 to fall 2018, overall undergraduate enrollment decreased by 1.1 million students, yet the number of students who participated in distance education courses increased by 1.1 million students and the number of students who enrolled solely in distance education courses increased by 300 thousand students (National Center for Educational Statistics). Vital data from fall 2012 to fall 2018 for the Undergraduate Enrollment reports presented by NCES are presented in Table 2.

Table 2

Distance Education Enrollment Increases in Undergraduate Enrollment Reports

Semester	Overall Undergraduate Enrollment	Number of Overall Enrollment Participating in Distance Education Courses	Number of Overall Enrollment Solely Enrolled in Distance Education Courses
Fall 2012	17.7 million	4.6 million	2.0 million
Fall 2013	17.5 million	4.6 million	2.0 million
Fall 2014	17.3 million	4.8 million	2.1 million
Fall 2015	17.0 million	4.9 million	2.1 million
Fall 2016	16.9 million	5.2 million	2.2 million
Fall 2017	16.8 million	5.5 million	2.2 million
Fall 2018	16.6 million	5.7 million	2.3 million

Finally, data from the NCES demonstrated that online course enrollments continued to grow throughout the 2010's and even up to their latest report in 2020 showing 2018 enrollment numbers.

Emerging Reasons for an Online Surge

The rapid growth in OL occurred for several reasons. For example, many students arrived on university campuses with the technical skills and tools necessary to participate in an electronic environment (Crook & Barrowcliff, 2001; Hawkins et al., 2008; Henreitus et al. 2019; Pinheiro, 2016). Hawkins et al. (2008) reported that more than half of students in public institutions used their own computer and “85.8% of students in private institutions” used their own computers (p. 31). Additionally, institutions were better prepared to engage students in an online environment (Hawkins et al., 2008; Kotz & Essien, 2005). Hawkins et al. (2008) indicated almost 98% of institutions with residence halls offered high speed network connections in their residence halls (p. 32). In this same report, Hawkins et al. (2008) found that among the schools they surveyed, “the mean percentage of classrooms with wired internet connectivity was 90.8%” and “the mean percentage of classrooms with wireless internet connectivity was 65.3%” (p. 29).

Student Needs Created a Surge

Other reasons for increased OL that emerged among researchers were:

1. rising unemployment (Allen & Seaman, 2008);
2. rising fuel costs (Allen & Seaman, 2008);
3. economic downturn (Allen & Seaman 2008; Allen & Seaman, 2009; Allen & Seaman 2010);
4. possible third wave of H1N1 pandemic (Allen & Seaman 2009);

5. a flexible schedule in order to meet employment and family needs
(Anstine & Skidmore, 2005; Picciano et al., 2010; Simon & Yatrakis, 2002); and
6. convenience (Murray et al., 2012; Simon & Yatrakis, 2002).

Although all of these are student-centered reasons for increased enrollments, some students saw some reasons as more beneficial and highly advantageous. For example, many saw the flexible schedule and convenience factors as highly advantageous.

Institutional Needs Created a Surge

Institutionally-centered reasons for increased enrollments in OL contributed to the surge as well. Many researchers cited the primary reason for institutions increasing their online course offerings was that OL increased educational access (Allen & Seaman, 2008; Mayadas et al., 2009; Parsad et al., 2008; Xu & Jaggars, 2013). Jaggars and Bailey (2010) posited the increased access was “presumably for those who are traditionally underserved, such as low-income, rural or inner-city, first generation, or academically underprepared students” (p. 10). Pinheiro (2016) affirmed the reasons for online course growth cited in earlier research and included current institutional needs such as institutions using online courses to “serve completely online students and to support face-to-face instruction” (p. 193). Other institutional reasons for increased online enrollments included:

1. online courses are a critical part of many institutions’ long-term strategy (Allen & Seaman, 2010, 2011, 2016);

2. a means to increase enrollment with lower cost benefits to the institution or higher wages for instructors (Jenkins, 2011; Mayadas et al., 2009); and
3. there is a large market for online learners (Mayadas et al., 2009).

Global Pandemic Created a Surge

On March 19th, 2020, The United Nations Educational, Scientific and Cultural Organization (UNESCO) declared, “over 850 million children and youth – roughly half of the world’s student population – had to stay away from schools and universities due to the COVID-19 pandemic” (n.p.). Clearly, by March of 2020, a global pandemic caused by COVID- 19 had engulfed the world. Johnson et al. (2020) described the effects of the pandemic on public life and education as:

As the virus spread, city-wide, regional, and country-wide lockdown orders were put into place across the world. With stay-at-home orders or physical distancing orders prohibiting larger gatherings, decisions to cancel, postpone, or move in-person classes online came within a matter of days in most countries. (p. 7)

Further, Radha et al. (2020) helped create an understanding of the effects of the pandemic on education when they stated:

Any freak accident that happens in the world will always leave its impact on education. And so the epidemic of COVID-19 has its footprints on education. The outbreak of this dangerous virus across the globe has forced educational institutions to shut down to control the spread of this virus. This happening made the teaching professionals think of alternative methods of teaching during this lockdown. And thus it paves the way towards web-based learning or e-learning or

online learning. In today's scenario learning has stepped into the digital world. In which teaching professionals and students are virtually connected. (p. 1088)

Both descriptions paint a vivid description of the necessity for the immediate surge in online courses within the United States and globally.

Online Learning Educational Benefits

Research demonstrated online learning offers some educational advantages for students. Some often-cited advantages were that an online learning environment is fertile ground for a shared workspace and collaborative relationships to occur across time and proximity boundaries, offering students the abilities to interact through chat features, video conferencing, or discussion boards (Arkorful & Abaidoo, 2015; Broadbent et al., 2020; Pinheiro, 2016; Volery & Lord, 2000). Other benefits cited were:

1. students may use simulation tools (Volery & Lord, 2000);
2. students may take self-administered quizzes at their own pace (Volery & Lord, 2000);
3. students may concentrate on the material they prefer and browse other course material (Arkorful & Abaidoo, 2015); and
4. students may experience an easier time with interpersonal communication and better relationships (Arkorful & Abaidoo, 2015).

Diversified Online Learning Environment

There are multiple approaches to delivering course content in an online learning environment (OLE), and quite often, one delivery approach may work for some disciplines, whereas other approaches work better for other disciplines. Also, it may be

easier to understand the OLE if we examine online approaches and survey a generalized timeline of how the OLE has developed since the early 1990's.

Asynchronous Online Courses

During the early to mid 1990's, the term e-learning emerged and was connected to asynchronous discussion groups as “a community of inquiry independent of time and location through the use of information and communications technology” (Garrison, 2011, p. 2; Kuenzi et al., 2004). More specifically, Haynie (2014) defined asynchronous learning as:

Learning in which interaction between instructors and students occurs intermittently with a time delay. Students in asynchronous courses are not required to log in at a specific time to watch a lecture or participate in a discussion, but rather can do their work on their own schedule. (para. 7)

Blended Courses

After the advent of asynchronous courses, the OLE progressed and blended learning emerged around 2003 (Graham, 2006) as a descriptor for courses representing a combination of face-to-face and online learning (Graham, 2006; Laumakis et al., 2009; Moskal et al., 2013). Allen and Seaman (2003) provided a more exacting definition of blended courses as “[having] between 30% and 80% of the course content delivered online” (p. 6).

Hybrid Flexible Instruction (HyFlex)

Romero-Hall and Ripine (2021) explain HyFlex instruction denotes, “...students who are unable to physically attend class sessions to be virtual attendees with real-time or asynchronous interactions with the instructor and their in-person classmates” (p. 290).

Irvine (2020) expressed Brian Beatty developed the HyFlex model while teaching graduate courses around 2007. Beatty merged face-to-face learning with online learning and allowed students to control how they attended class. Students could attend face-to-face, synchronously online, or asynchronous online. The advantage of HyFlex instruction is, "...learners have full control of their modality (face-to-face, online synchronous, or online asynchronous)" (p. 46.). Wright (2016) asserted a well designed HyFlex instructional model empowers students by allowing for their choice of modality, choice of an active learning experience, and encouraging high course satisfaction.

Online Degree Programs

During the early to mid 2000's, the OLE grew so that universities no longer strictly offered singular online courses, but the OLE now included online degree programs. Allen and Seaman (2003) defined online degree programs as a concept in which "a student can take at least 80% of their courses for a degree program online" (p. 7). For-profit universities like the University of Phoenix had grown at a rapid rate during the 1990s and used the 2000's to capitalize on the slightly higher profit margins that online degrees yield (Craig, 2015; Howarth & Stifler, 2019). Around the same time, other universities such as Duke offered a Global Executive MBA and Cornell offered eCornell as a means for earning online certificates (Craig, 2015). Finally, by 2010, Craig (2015) noted that approximately 3 million students were enrolled in online degree programs and many of them attended for-profit institutions.

Massive Open Online Courses (MOOCS)

The most recent addition to the online environment is the inclusion of MOOCs. This online learning model gained fuel and

...integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources. Perhaps most importantly, however, a MOOC builds on the active engagement of several hundred to several thousand 'students' who self-organize their participation according to learning goals, prior knowledge and skills, and common interests. Although it may share in some of the conventions of an ordinary course, such as a predefined timeline and weekly topics for consideration, a MOOC generally carries no fees, no prerequisites other than Internet access and interest, no predefined expectations for participation, and no formal accreditation. (McAuley et al., 2010, p. 4)

Online Academic Performance

Although more students have relied on online courses, some students succeed in these courses (Battalio, 2009; Murray et al., 2012), and a large number of students either earn low grades or do not complete the course (Angelino et al., 2007; Wilson & Allen, 2011). Further, even more online courses are now offered as a result of the pandemic and some instructors are more successful than others at facilitating the learning process (Johnson et al., 2020; O'Keefe et al., 2020;). Self-regulation has proven to be a key feature for online learning (Carvalho et al., 2020).

Contemporary Online Learners

Sener (2010) indicated that all collegiate students will participate in some form of OL while enrolled in higher education, and during any academic year an overall majority of students will enroll in a minimum of one online course. Although studies show the demographics of online learners as female, older, and having earned higher levels of

credit hours as compared to face-to-face students (Clinefelter & Aslanian, 2015; Smith, 2014; Wilson & Allen, 2011), Layne et al. (2013) acknowledged that generally, many consider online learners' demographics as nontraditional students whose qualities include: (a) a part-time student, (b) a full-time employee, (c) deferred enrollment in higher education, (d) financially independent, (e) have children, (f) single parent, and (g) may not have earned a high school diploma. Further, Layne et al. (2013) said these labels of qualities are rather broad, and important differences lie within each quality, but research inspecting these differences is limited.

Dabbagh (2007) described current online learner characteristics as “diverse, dynamic, tentative, younger, and responsive to rapid technological changes” (p. 224). Further, the online learner is often someone “who has a strong academic self-concept; is competent in the use of online learning technologies, particularly communication and collaborative technologies; understands, values, and engages in social interaction and collaborative learning; possesses strong interpersonal and communication skills; and is self-directed” (Dabbagh, 2007, p. 224). Kaufman (2015) furthered this description stating that even though online learners share similar overall characteristics, they also demonstrate varied cognitive styles, affective skills, persistence levels, self-regulation skills, and self-efficacy skills. Broadbent et al. (2020) offered current online learners may have varied skills in self-regulated learning because they may have had limited opportunities to develop these skills.

Some Online Learners Thrive

Online learning is quite pervasive, and research indicates that some online learners thrive. For example, Ulmer et al. (2007) surveyed 137 faculty at different

institutions from the Southern Association of Colleges and Schools (SACS) about OL and found 71% of the respondents indicated that they strongly agreed with the following statement: “Higher education students perform better in distance education classes as compared to traditional classes” (p. 62). In addition, 60% of the respondents strongly agreed that “Distance education improves performance of students” (p.63). Shachar and Neumann (2010) conducted a meta-analysis of OL covering a twenty-year period, and their study concluded, “It is clear that the experimental probability of attaining higher learning outcomes is greater in the online environment than in the face-to-face environment” (p. 327).

Finally, Murray et al. (2012) demonstrated that the more a student accessed and interacted with course materials and resources the greater the chance a student had of earning a higher grade and achieving success. Their research indicated a moderately strong relationship exists between student and content interaction, as measured by student access to course resources, and student success, as measured by their course grade.

Andragogy Supports Success

Zorn-Arnold and Conaway (2016) posited non-traditional learners return to school with academic goals relevant to career advancement or positive contributions to society. Knowles (1996) argued teaching non-traditional learners through the art of andragogy, “the art and science of helping adults learn”, is the most appropriate approach to helping adult learners with academic success (p. 55). Knowles (1996) asserted the four premises of andragogy are: 1. adult learners are self-directed learners; 2. adult learners possess experiences that serve as a resource for learning; 3. adult learners’ readiness to learn is aligned with social roles; 4. adult learners prefer immediate application of

knowledge. Zorn-Arnold and Conaway (2016) advised using principles of andragogy “are the keys to developing an engaging learning experience for mature adult students” (p. 4).

Tainsh (2016) recognized the importance of online course designers embracing “a strategy with the adult learner in mind” (p. 8). Tainsh (2016) proposed online design principles aligned with premises for andragogy to support adult online learners and help them succeed. Some online design principles’ Tainsh (2016) advocated for are: 1. design online courses inclusive of all learners and for ease of use; 2. design online courses to engage learners throughout the entire course; 3. design online courses to use innovative techniques like problem solving; 4. design online courses to include a variety of assessment techniques.

Predictive Factors Demonstrating Success

Recent studies have shown some variation in predictive factors for online student success. For example, a study conducted by Hachey et al. (2012) demonstrated two differences between successful and unsuccessful online learners. The first difference is that successful students “who have successfully completed all prior online courses” (Hachey et al., 2012, p. 1) demonstrated relatively high academic success and retention rates. Those students “who have not successfully completed any previous online courses” demonstrated low academic success and retention rates (Hachey et al., 2012). The second difference is that “students who have had some online success and some online non-success in the past have distinctly lower success rates than those students whose prior online experiences have all been successful” (Hachey et al., 2012, p. 1).

In another study, Wilson and Allen (2011) found an online student's cumulative GPA as the greatest predictor of student success in an online course, and this predictor applies to traditional students as well. Wilson and Allen's (2011) study compared different predictors of course grades between online students and face-to-face students. Results clearly indicated that cumulative GPA was the greatest predictor of course grades, regardless of delivery mode. This trend was further confirmed when course grades were disaggregated into successful completers (i.e. grades of A, B or C), unsuccessful completers (i.e. grades of D or F), and withdrawers. Across both delivery types, unsuccessful course completers had significantly lower cumulative GPAs than either successful completers or withdrawers (Wilson & Allen, 2011, p. 4).

Low Levels of Achievement

Online course enrollment continues to grow (Wandler & Imbriale, 2017, p. 1), students select these courses because these courses offer a means for a student to practice what he values, whether it be time flexibility, convenience, or a preferred method of completing coursework; yet, research demonstrates that some students enrolled in online coursework show lower levels of engagement, as compared to their face-to-face counterparts, and produce lower academic achievement and/or completion (Anstine & Skidmore, 2005, p. 124; Atchley et al., 2013; Hamann et al., 2021). Research indicates that factors such as student procrastination, coursework management skills, time management, a student's belief in a strong external locus of control (i.e. other people, the environment, or circumstances controlling a student's performance in a course), and psychological attributes are some of the causes of unsatisfactory student performance in

online courses (Elvers et al., 2003; Lee & Choi, 2011; Henritus et al., 2019; Michinov et al., 2011; Waschull, 2005).

High Levels of Attrition and Withdrawal

Because of the surge in the presence of the online environment at universities and the increased enrollment levels in online courses, many are concerned about student attrition and/or success when students enroll in online courses. Even though there are multiple reasons for institutions and students that contribute to the growth in online courses, another issue manifests itself: online courses reflect high attrition rates. Park and Choi (2009) indicated that attrition in online courses is a problem for many colleges. Angelino et al. (2007) and Bart (2012) posited that online courses exhibited attrition rates as being 10-20 % higher than traditional courses. In some studies examining online course withdrawal rates at universities, course withdrawal rates ranged from 12% to 26%, and in studies examining community colleges, face-to-face course withdrawal rates were reported between 20-30% with online courses demonstrating even higher withdrawal rates (Jaggers & Bailey, 2010).

Protopsaltis and Baum (2019) posited that multiple studies demonstrate that online courses' success rates are much lower than face-to face courses. Lokken and Mullins (2010) reported in the beginning [of the online course presence] retention rates dropped below 50%, however, recently the average retention rate [for online courses] was nearer to 72% (p. 11). More recently in another study, Kizilcec and Halawa (2015) noted the high level of attrition rates in substantially large online learning environments, such as a MOOC (p. 58).

Many university educators are aware of the high attrition rates for online courses and often wonder why some students thrive in an online environment while others are unsuccessful, fade away, or drop out. Angelino et al. (2007) identified the leading cause for attrition among online students as time management. Other researchers have identified elements such as “course design, technical issues, student intellectual ability, poorly trained instructors, cognitive overload, personal motivation,” and/or motivational design as contributing factors to high attrition rates (Pittenger & Doering, 2010, p. 275). Questions such as, “How do factors and processes inherent within online courses influence a students’ ability to self-regulate and be successful?” exist and need exploration in order to learn why some students thrive or while others fade away.

Educational psychologists endeavor to explain why some students rise to academic challenges by using strategies and perseverance, while other students cease trying and give up. (Mega et al., 2014). This discrepancy may exist in the case of online courses because of the self-regulated learning innate within many online courses, and students may not understand or value the innate self-regulated structures available.

Necessity for Self-Regulated Learning (SRL) in Online Courses

Zimmerman (2008) expressed that SRL is considered particularly important when seeking information from electronic sources. Barnard et al. (2009) and Kocdar et al. (2018) supported Zimmerman’s (2008) view and furthered it by adding the fact that an OLE required autonomy, therefore, SRL is a crucial component for success in online learning.

Although research indicates self-regulation (SR) is a necessary and critical skill for student success in an online course, SR theorists agree that students must actively

choose to use SR to be successful. For example, Zimmerman and Schunk (2011) asserted that the self-regulation process is one in which self-regulated learners (SRLs) activate and maintain their thoughts, behaviors, and emotions in such a manner that they attain a targeted goal (Zimmerman & Schunk, 2011). Schunk's (2012) more exacting thought about students activating SR is that learner choice is key for their motives or methods, time spent on learning activities, learning and social setting, and learning standards.

SRL is not an automatic student response when enrolled in an online course and is not a passive activity. SRL requires an internal investment of intentionally aligning personal behaviors in order to produce a specific outcome and meet a specific goal. Mega et al. (2014) summarized information from their study and posited that SRL "... is an active, constructive process" (p. 122) and students should participate in multiple course activities to regulate their learning. Zimmerman (2008) explained SRL as a proactive autonomous approach to learning with a set of self-beliefs that allow students to convert their mental abilities into academic performance. In essence, when an online student chooses to use SRL, he or she moves from passive learning to active learning. It is the active choice that allows for active learning and student success.

Framework of Self-Regulation

In Chapter One, Tabak and Nguyen's conceptual model of SR in online learning environments was introduced and includes components from the following three theories: Self-Regulation Model from Bandura's Social Cognitive Theory (1991) and a subsection of self-regulation with Zimmerman's (2002) Self-Regulated Learning Model, Technology Acceptance Model (TAM) (Davis, 1989), and the Five Factor Model of Personality (FFP) (Barrick & Mount, 2005). All three of these theories have a

foundational significance to Tabak and Nguyen's conceptualization of SR in online learning environments.

Different factors from each theory were included in Tabak and Nguyen's conceptual framework in order to adapt it for an online environment. Tabak and Nguyen's (2013) model acknowledges there are dynamic, mitigating factors influencing SR in an OLE and these factors should be considered and accounted for when examining a student's ability to self-regulate in an OLE. Their model also allows for the exploration of those factors in order to examine their influence on student SR while enrolled in an online course.

Social Cognitive Theory of Self-Regulation

Albert Bandura (1991) introduced the Social Cognitive Theory of SR, which described human SR systems as a means a person uses that "provide[s] the very basis for purposeful action" (p. 248). Carver (2004) explained SR as internal self-corrective adjustments that continuously occur as needed to stay on track, which activate behaviors that allow one to pursue goals.

Self-Regulated Learning (SRL)

After Bandura introduced his SR model, prominent researchers such as Barry J. Zimmerman introduced a model for SR in academic learning. For the context of SR in academic learning, Zimmerman built on and included Bandura's concept of self-efficacy during the first cognitive phase, Forethought, but expanded it to include Task Analysis and Self-Motivation (Cleary & Zimmerman, 2012). During the second cognitive phase, Performance, Zimmerman included the two aspects of Self-Observation and Self-Control. The third cognitive phase, Self-Reflection, included self-judgement and self-reaction

(Cleary & Zimmerman, 2012; Panadero & Alonso-Tapia, 2014; Zimmerman, 2000).

Bandura's concept of SR and Zimmerman's concept of SRL is the foundation of Tabak and Nguyen's conceptual model.

Technology Acceptance Model (TAM)

Davis (1989) introduced TAM as a theoretically-grounded concept explaining why technology users adopt and use technology (Tabak & Nguyen, 2013). TAM includes two cognitive determinants for technology adoption and use: perceived usefulness (PU) and perceived ease of use (PEU) (Davis, 1989, p. 320). Davis (1989) explained PU as "the degree to which a person believes that using a particular system would enhance his or her job performance" and PEU as, "the degree to which a person believes that using a particular system would be free of effort" (p. 320).

Recently, researchers have applied TAM to the OLE to understand student adoption and usage of technology (Lee et al., 2005; Park, 2009). In Tabak and Nguyen's conceptual model, technology acceptance is identified as one of the influencing factors contributing to an online student's ability to self-regulate and is an interconnected component to the foundation of their model. For example, in an online environment, researchers interested in students' behavioral intentions with technology discovered that students with a more positive attitude toward the perceived usefulness of new technology; further, this perceived ease of use leads to a higher intention to use the system (Lee, et al., 2005; Park, 2009; Park et al., 2012). Student adoption and usage of technology is a key component for student success in an online course because if a student does not accept or use the technology available in the course, then a student is unable to access course materials and complete course activities, assignments, and other course requirements.

Five Factor Personality Model (FFP)

McCrae and Costa (1987) validated the FFP model, which serves to further the understanding of personality. The FFP is a “systematic description of traits” about the contents and/substance of personality (McCrae & Costa, 1987, p. 2). Boekaerts et al. (1999) suggested that there are linkages between personality and SR that need further exploration.

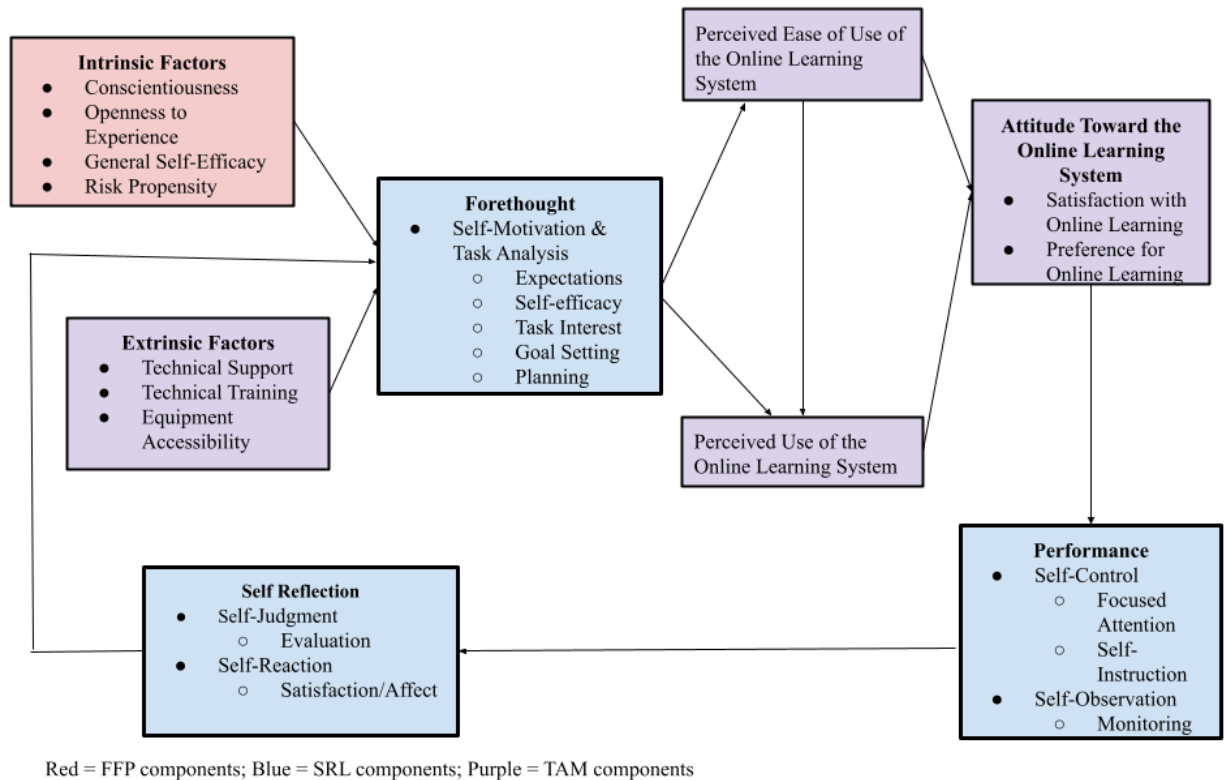
An overlap of intrinsic and extrinsic attributes as mitigating factors for the effects of self-efficacy exists in the literature about SRL, TAM, and FFP models. Bandura (1982) defined self-efficacy as “judgments of how well one can execute courses of action required to deal with prospective situations” (p. 122). Many SR learning models include intrinsic and extrinsic aspects to explicate SR in particular situations (Tabak & Nguyen, 2013). Each of these models identify the intrinsic factor of self-efficacy as one of a student’s means for academic achievement and they identify extrinsic factors as coursework and various forms of human interaction in an online environment (Caprara et al., 2011; Cho & Jonassen, 2009; Mun & Hwang, 2003; Tsai et al., 2013).

Tabak and Nguyen’s model includes the personality traits of conscientiousness, openness to experience, general self-efficacy, and risk propensity from FFP as influencing intrinsic factors contributing to an online student’s ability to SR and is an interconnected component to the foundation of their model.

A graphic showing Tabak and Nguyen’s conceptualization of SR in an online course along with the interconnectivity of elements from the models mentioned earlier, as well as variables influencing SR, is seen in Figure 2.

Figure 2

A Conceptual Model of Self-Regulation in Online Learning Environments



Note. Adapted from Tabak, F., & Nguyen, N. T. (2013). Technology acceptance and performance in online learning environments: Impact of self-regulation. *Technology*, 9(1), 116-130.

Online Learning Environmental (OLE) Structure

When a student enters a face-to-face course in a physical classroom, the student navigates the physical environment and the academic tasks encountered with various concrete objects and direct verbal discussion with the professor. The student may gain information to clarify, support, or enhance his knowledge, understanding, and academic performance. In an online course, students need to navigate a virtual environment via delayed access to a professor and must possess knowledge, understanding, and skills with

technology, technology software, and a learning management system in order to navigate the OLE and perform academically.

There are many components to an OLE structure, and the most important is a Learning Management System (LMS). According to Gautreau (2011), a LMS “contain[s] electronic tools including a discussion board, files, grade book, electronic mail, announcements, assessments, and multimedia elements” (p. 4). Weaver et al. (2008) described the growth of use of a LMS in higher education since early 2000 as enormous along with “varying levels of support provided to staff and students during the implementation phases” (p. 30). Dabbagh and Kitsantas (2012) reported that institutions continue to rely heavily on a LMS as the primary means of online course delivery. Moreover, an LMS allows instructors to disseminate the course to a centrally located online application that is password protected (Salazar, 2010).

Online Learning Structures: Course Structure, LMS and LMS Course Tools

Because academic success is highly dependent upon student SR, researchers have asked the question: what does student SR look like in an online environment? Often, SR is associated with specific behaviors that generate assignment completion, goal setting, and academic success (Roll, 2017). Embedded course tools are tools inserted into the course in which students access and use to help them generate assignment completion, set goals, and ultimately achieve academic success.

King (2014) expressed a LMS contains “a variety of features available for use by instructors and students” (p. 3). Salazar (2010) indicated that instructors should structure courses in a manner that is intuitive for students to navigate and find items such as the course syllabus, course schedule, course learning objectives, course content and

assignments. King's (2014) research indicated that students placed higher values on the use of some course features as compared to others because it helped them with their performance during the course.

Instructor Embedding/Using Course Tools for Self-Regulation

As the OLE has expanded, instructors have augmented capabilities to more fully engage students and better support SR through online tools embedded in a LMS. For example, many universities use Blackboard as their LMS. If an institution purchases a subscription to Blackboard, then that institution is able to control which tools are available for usage. For instance, some tools available for usage on Blackboard are: Achievements, Announcements, Barnes and Noble Textbook Tool, Blogs, Calendar, Contacts, Course Messages, Discussion Board, Glossary, Goal Performance, Journals, Email, Polls, Surveys, Tasks, Wikis, Zoom Meetings. It appears that usage of these tools is meant to increase student engagement, SR, and course management.

Since the online dropout rate and poor academic performance is an alarm bell for institutions and instructors, many researchers have tried to drill deeper into examining the causes for these issues with students and identify strategies to address them through usage of course tools. Lee and Choi (2011) suggested some strategies to activate student engagement and connection with the instructor in order to help online students. For example, Lee and Choi (2011) recommended instructors should create courses that:

1. Offer interactive learning such as team based learning;
2. Offer relevant course content to pique student interest and experiences;
3. Offer an interactive, flexible, self-directive approach to course content; and
4. Offer effective communication tools and methods that are easily accessible.

Salazar (2010) provided engagement strategies as well:

1. Instructors should create their online presence and a sense of community by creating self-introduction video clip or an interactive bio;
2. Instructors should allow students to create their online presence and community belonging early in the course by using course tools to introduce themselves;
3. Instructors should use educational technology tools that enhance online course learning such as Podcasts, wikis, course management systems, and videoconferencing via internet protocol (IP); and
4. Instructors should create group connectivity, either student-instructor or student-student, similar to face-to-face courses through chats or discussion boards to create contact.

Student Usage of Course Tools for Self-Regulation

Kuh (2009) explained student engagement increases as students actively study, practice, and obtain feedback from faculty and staff about writing and collaboration. Further, this increased engagement results in heightened student understanding of content (Kuh, 2009). Recently, usage of course tools in a LMS that promote student engagement has been studied by a few researchers. For example, Kuh's (2009) study examined and analyzed the National Survey of Student Engagement's conceptual framework's clusters and/or benchmarks of effective educational practice (pp. 13, 16-18).

Although this is true, Karaksha et al. (2013) posited that the effects of using course tools on "increasing student engagement has not been extensively investigated" (p. 2). King (2014) concluded in her study that students did perceive various course tools as important or extremely important. However, Karaksha et al. (2013) found that although

course tools were provided during an online pharmacology course, provision of course tools was not enough and students needed email reminders and motivation to use the tools. Once that was provided, the effectiveness of student usage of course tools increased.

Chapter Summary

Chapter Two provided a detailed review of the literature of the online learning environment. I felt it necessary to explore the growth of the online learning environment from a historical perspective. Online learning, the online learning environment, and online learners are relatively new topics and aspects of higher education. For example, as of 2020, this area of learning will only have existed for thirty years. It is important to examine the development of online learning in general and the online learner as well. Therefore, the beginning of Chapter Two discussed an online surge and provided information about the following topics: Online Learning Inception, Online Learning Landscape Growth, Online Learning Models, and Emerging Reasons for Online Enrollment. Then, the chapter provided an acute focus on online academic performance by discussing contemporary online learners, their low levels of achievement, and their high levels of attrition.

Finally, after providing that information, the chapter progressed through a discussion about the necessity for student self-regulation in an online course, online learning structures such as course structure, a LMS, usage of LMS tools as pertaining to instructors and students, and a further discussion about Albert Bandura's Social Cognitive Theory of Self-Regulation, Barry Zimmerman's model of self-regulation in academic learning, Davis' Technology Acceptance model, and the Five Factor

Personality model. It is important to discuss all of the experts along with their models because it is important to understand the overarching umbrella of self-regulation, which is Bandura's Social Cognitive Theory of Self-Regulation. Underneath that umbrella are housed multiple researchers and their models that ground the multiple variables which affect self-regulated learning. One of the prominent and major contributors to grounding the field of self-regulation in academic learning is Zimmerman. Although Tabak and Nguyen attribute the self-regulation components in their model to Bandura, I felt it was necessary to discuss Zimmerman as well because Tabak and Nguyen's model appears to lean towards Zimmerman's model of self-regulation in academic learning.

CHAPTER III

METHODOLOGY

Master European artist Giotto de Bondone (Giotto) transformed the course of painting during the early 14th century when he used techniques that “created a new kind of pictorial space with an almost measurable depth” (Meager, 2010 para.2). From my perspective, the idea of an expert using techniques that allow an audience to see a familiar space in a way more qualities are perceived and understood in greater, almost measurable depth, is easily applicable to this case study. Until recently, online students, an online learning environment (OLE) in a university setting, and student self-regulation (SR) have been researched and treated as distinct qualities, and the landscape of both qualities is especially familiar in universities across America. However, a further investigation of these qualities using a qualitative approach may help create a new kind of pictorial space with an almost measurable depth if the investigation treats these qualities as interrelated rather than mutually exclusive.

Chapter III provides a detailed account of the research procedures I employed. Key topics discussed in this chapter include: (a) researcher role; (b) research design; (c) data collection strategies; (d) data analysis strategies; and (e) data verification strategies.

Statement of the Problem

Research has indicated a rapid growth in online course enrollments in higher education (Arkorful & Abaidoo, 2015; Sener, 2010; Volery & Lord, 2000), and the COVID-19 pandemic has exacerbated that growth (Arkorful & Abaidoo, 2015; Johnson et al., 2020; Volery & Lord 2000). However, some students have succeeded in these online courses (Battalio, 2009; Murray et al., 2012), and others have not (Angelino et al., 2007; Wilson & Allen, 2011). In this study, Tabak and Nguyen's (2013) theory of self-regulated learning was used as a lens to explore how instructors of successful online courses at a midwestern university understood and facilitated self-regulated learning in their online courses.

Purpose of the Study

The purpose of this study was to explore, through the lens of Tabak and Nguyen's theory of self-regulated learning in an online environment, how effective instructors of successful online courses at Midwest State University (MWSU) understood and facilitated self-regulated learning in their online courses.

Research Questions

1. How do instructors understand self-regulated learning?
2. How do instructors modify course design to increase self-regulated learning?
3. How do instructors modify student learning factors to increase self-regulated learning?
4. How do instructors modify student learning processes to increase self-regulated learning?
5. How does Tabak and Nguyen's self-regulated learning in an online environment theory explain the above research questions?

Researcher Role

Researcher Bias

As a researcher for this inquiry, it is important to note information that may influence this study, such as: personal background, relevance of personal background, and possible biases. After high school, I went straight into the workforce and did not attend college until my late twenties. While in the workforce, I held various positions, and the common thread for each position was connected to public speaking. It took six years to work my way through an undergraduate degree focused on secondary education in speech, drama, and debate. Soon after I graduated, I was hired at my alma mater as an adjunct to teach Communication 101. Then, I decided to adjunct as long as I could and have continued to do so for over 17 years. I have taught face-to-face and online courses. I designed and taught an online Communication 101 course before quality assurance standards were implemented at the university. At that time, full-time faculty members were not required nor were they interested in teaching online courses. I, on the other hand, wanted to expand my capabilities, and I felt like online courses were going to be a quickly expanding market. I saw teaching and designing an online course as a great opportunity.

As it turns out, my instincts were right. Online courses burgeoned, and I grew exponentially. The combination of all my experiences as an adjunct instructor have influenced my decisions to remain as an adjunct online instructor and possibly obtain a position as a professor in the future. Over the course of my time as an adjunct, my interest in online student performance has been piqued, and I want to examine this issue more in-depth.

As an online instructor, I believe (a) online students are a highly vulnerable population, (b) although online courses continue to grow, the OLE landscape continues to develop, (c) there is so much more to know, learn, and understand about online learners, (d) online course community inclusion is different than face-to face-inclusion and is a factor that must be understood and explored.

My prior knowledge and experiences have caused me to formulate opinions and ideas about positive and negative aspects of online courses, instructors, and student performance. Some of my opinions are (a) sometimes others, such as parents or friends, complete coursework for online students, (b) sometimes technology issues and course affordability issues negatively impact student performance, and (c) sometimes an unmanaged personal life by an instructor or student negatively impacts student performance. I am aware of these opinions and ideas as well as their implied bias toward this study. I conducted the research and analysis with fidelity because I followed interview protocols, used follow up questions for clarification of meanings and validation of interpretations, used triangulation strategies to determine validity and reliability of findings, and followed university and federal protocols for qualitative research.

Research Design

Constructionism was the epistemological perspective guiding this study. Crotty (1998) defined constructionism as “the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world” (p. 42). Crotty (1998) described three points of emphasis for Constructionism as (a) “meanings are constructed

by human beings” (p. 43), (b) “meaning is not discovered but constructed” (p. 42-43), and (c) “people may construct meaning in different ways” (Crotty, 1998, pp. 8-9).

A qualitative case study was a befitting design to employ for this inquiry because it allowed for an interpretive approach (Creswell, 2014, p. 187), “intensive descriptions and analyses of a *single unit or bounded system*” (Merriam, 1998, p. 19), and alignment with Constructionism. For this inquiry, the unit of analysis was effective instructors of online courses and online instructional support staff. The epistemological perspective of Constructionism helped me explore the significance, or meaning, of the modifications effective instructors made connected to course design and to the student learning factors and processes in their online courses that aided students with SR.

Data Collection

Participant Selection

According to Merriam (1998), “Purposeful sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned” (p. 61). The university site, online instructors, and focus group participants were chosen using purposeful sampling. MWSU was chosen as a research site because it offered a diversity of online courses to its general and distance education student populations. Further, MWSU contained an Office of Technology and Teaching Excellence (OTTE). MWSU’s OTTE determined ten effective online course instructors existed and were potential interview candidates for the study. OTTE used selection criteria for effective instructors and their successful courses based on:

1. *Course observations made by OTTE instructional planners.* Their analysis consisted of a partial or full course analysis and follows a three step process that included (a) pre-conference, in which the instructor and OTTE instructional planners met and discussed course observation goals; (b) observation, in which instructional planners conducted the course observation, which may have included written student feedback and/or written feedback from student focus groups; and (c) post-conference, in which the instructional planner and instructor met and discussed constructive feedback based on the observation (“Teaching and Learning Support,” n.d.).
2. *Student engagement strategies.* OTTE instructional planners helped instructors foster high levels of online student engagement through participation by using asynchronous or synchronous online practices, engaging practices with course content, and promoting early success to aid course retention (“Student Engagement Strategies,” n.d.).
3. *High quality instructional design.* OTTE instructional planners helped instructors generate learning outcomes containing student-friendly language, consider teaching methodologies that increase student engagement, and construct assessment tasks that accurately assess student learning (“Instructional Design,” n.d.).

Additionally, the selection of OTTE’s instructional support staff for participation as focus group members were chosen because (a) their name was specifically mentioned by two or more instructor interviewees, and (b) instructors identified specific evidence of the support staff member’s contribution of help to the instructor’s online course

organization, online content delivery, or support for learning and using the learning management system (LMS).

Documents and Artifacts

Erlandson et al. (1993) stated, “Documents constitute a source of evidence” (p. 99) and they further explained the usage of documents as “generally hav[ing] their origins in human thought and activity” (p. 101). Also, Merriam (1998) explained the types of documents commonly used in a study as “physical material already present in the research setting” as well as other types too (p. 118). For this study, I gathered data and information from artifacts and electronic documents. Information gathered from electronic documents contained information about the university and online courses and came from sources such as university publications, posted student assignments, instructor generated documents, course documents, technology user guides or website links, and other documents embedded within the course. Information gathered from artifact sources included recorded videos of or by the instructor embedded in the course, voice recordings of or by the instructor embedded in the course, and other materials or recordings embedded in the course. There was an abundant supply of electronic documents and artifacts available, so I carefully reviewed and judiciously chose documents and artifacts.

Researcher Generated Documents

Merriam (1998) discussed the value of researcher-generated documents such as photographs. Merriam (1998) identified the specific purpose of researcher-generated documents, like photographs, “is to learn more about the situation, person, or event being investigated” (p. 119). Further, Merriam (1998) supported Bodan and Ridge’s (1992)

assertion about using photographs in tandem with participant observation as a method of examining and recalling details that may be disregarded or neglected.

Because this study focused on the virtual environment, rather than taking traditional photos of a classroom, screenshots of online courses were used. Screenshots allowed me to capture the course (a) setting, (b) content, (c) assignments, (d) public teacher-to-student interactions, (e) course tools employed, (f) and other various aspects of the course. Screenshots allowed the virtual world of each online course to become tangible. They in essence became the concrete four walls of the virtual classroom.

The screenshots were an invaluable source of information for the study. There were a total of twenty online courses. Sixteen of the courses occurred asynchronously. Two occurred in a synchronous format and the other two originally were synchronous but were forced to move to an asynchronous format. The online courses contained many public teacher-to-student interactions or student-to-teacher interactions through course announcements, course notifications, and course discussion boards. Screenshots enabled me to capture these interactions, even though I was not available in real time while they occurred. These screenshots allowed me to reveal, capture, and understand the public verbal and nonverbal interactions between the instructor and the students without me being present in real time. The screenshots also served as a source of triangulation. Often, I was able to use a screen shot as a source of alignment between what the instructor revealed during the interview and what the instructor did or said as the course unfolded.

Observations

Merriam (1998) posited that observations occur in the natural field setting. Moreover, observations as a research tool require a careful, systematic approach, in

which the researcher can decide on his or her focal points for observations (Merriam, 1998).

I used a systematic approach for screen recording online courses and making observations to gain information, focus on specific course aspects, and not allow information to be overlooked. After each interview, I gained access to the instructor's online courses and followed these steps: 1. Recorded the different information available under each course navigation button; 2. Recorded information located under the course analytics button; 3. Observed the courses after recording and took screenshots of specific information connected to any of my research questions or possible emerging themes; 4. Downloaded and saved course documents. Also, since instructors assigned me to the role of Course Observer or Non-Grading TA for their live courses, I was able to conduct real time observations of instructor-to-student interactions through posting of course announcements, weekly releases of course modules, course notifications, and instructor posted course lectures or videos. Throughout the entire observational process, I generated retrievable field notes recording course structures, significant learning processes and interactions, and other pertinent information.

Interviews

Merriam (1998) articulated the central purpose of interviewing is to obtain information we cannot observe such as behavior, feelings, or how others interpret the world around them (pp. 71-72). Merriam (1998) and Patton (2015) laid the foundation for the basis of interviews in a case study. Merriam (1998) and Patton (2015) agreed that interviews are a necessary source of data because the information provided is not attainable through any other means. For this study, I contacted the ten potential

interviewees, and five of the potential online instructor interview candidates agreed to participate in the study.

I conducted interviews with the five course instructors and a focus group interview with MWSU's OTTE personnel. I interviewed course instructors to gain a better understanding of the modifications they made to course design and to the student learning factors and processes, which aided student SR. During my interviews with course instructors, all of them mentioned specific personnel from MWSU's OTTE office who assisted them with course design, course development, best practices for online teaching, or other various aspects for online courses. As a result, I conducted a focus group interview with selected personnel from MWSU's OTTE.

Interviews were conducted during Spring 2021 amid the COVID-19 pandemic. I followed social distancing requirements utilizing video conferencing options for interviewing and recording interviews lasting less than an hour. I transcribed interviews within one week and recorded any observations or interview notes immediately which allowed me time to contemplate so I could develop insight and understanding connected to their responses. I used an interview protocol that consisted of an interview guide containing conversational, open-ended questions that allowed for consistency and follow up probes during the interview process (Merriam 1998). The instructor interview questions and focus interview questions are provided in the appendices as Appendix A and B. An overview of data collection strategies and their alignment with the research questions is presented in Table 3.

Table 3

Data Collection Strategies Alignment

Research Questions	Instructor Interview Questions	Focus Group Interview Questions	Observations	Documents	Artifacts
How do instructors understand self-regulated learning?	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13	1, 2, 3, 4, 5, 6, 7, and 8	Entire online course Course screenshots and recordings	Student assignments Instructor generated documents	Observation notes Interview transcriptions Course screenshots and recordings
How do instructors modify course design to increase self-regulated learning?	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13	1, 2, 3, 4, 5, 6, 7, 8, and 9	Entire online course Instructor interaction with LMS Course screenshots and recordings	Student assignments Instructor generated documents	Observation notes Interview transcriptions Course screenshots and recordings
How do instructors modify student learning processes to increase self-regulated learning?	1, 11, 12	1, 2, 3, 4, 5, 6, 7, 8, and 9	Entire online course Instructor interaction with course tools Course screenshots and recordings	Student assignments Instructor generated documents	Observation notes Interview transcriptions Course screenshots and recordings

Research Questions	Instructor Interview Questions	Focus Group Interview Questions	Observations	Documents	Artifacts
How do instructors modify student learning factors to increase self-regulated learning?	1, 6, 7, 8, 9, 13	1, 2, 3, 4, 5, 6, 7, 8, and 9	Entire online course Instructor interaction with course tools Course screenshots and recordings	Student assignments Instructor generated documents Technology resource	Observation notes Interview transcriptions Course screenshots and recordings
How does Tabak and Nguyen’s self-regulated learning in an online environment theory explain the above research questions?			Course screenshots and recordings	Technical user guides Technology resources	Observation notes Interview transcriptions Course screenshots

Data Analysis

Compiling Data

Merriam (1998) explained data analysis as “the process of making sense out of the data...Data analysis is a complex process that involves moving back and forth between bits of data and abstract concepts, between inductive and deductive reasoning, between description and interpretation” (p. 178).

For this study, after transcribing, I reread the transcripts so I could understand the interview as a whole. Then, I annotated each transcript by noting my thoughts, impressions, repeated terms and phrases, and any other noteworthy information. I reviewed course documents, screenshots of course information or instructor postings, emails between myself and interviewees containing follow up clarification questions and

responses about interview questions, and screen recordings of each course. As I reviewed all the information, I annotated the documents as described above and created field notes when necessary. Most of the data was electronic, and the annotations and field notes were electronic as well. All this information was stored in secured electronic files and drives, which I was the only one with access to the information.

Coding and Organizing

Merriam (1998) posited the researcher can compose a narrative about their study by advancing beyond basic descriptions to constructing themes or categories that express a frequent pattern that is found throughout the data. Merriam (1998) described the process of categorizing as mostly intuitive; however, she asserted that categorizing is also regulated by a procedural process, a researcher's beliefs and knowledge, and the exact meanings contributed by the participants themselves.

After annotating all data including my field notes, I looked for common information that could be chunked together. I looked for commonality of information, such as terms, phrases, and repeated terms, among the transcripts and input them into a spreadsheet in related rows and columns. I looked for commonality of information, as well as supporting information, in my screenshots of course documents, course assignments, instructor comments, instructor postings, and any other artifacts I gathered information from. I created electronic folders with a generalized theme or research question and placed artifacts and screenshots in the appropriate electronic folder.

Data Analysis and Interpretation

Creswell (2014) offered an interactive six step process to data analysis and Creswell's process includes: Organize and prepare the data for analysis; read or look at

all the data; start coding all the data; use the coding process to generate a description of the setting or people as well as categories or themes; advance how the description and themes will be representing in the qualitative narrative; interpret the findings.

My plan for coding data involved using hard copies of the data, and I allowed the categories to emerge as I coded. Predetermined codes were not useful because each instructor had a unique approach to support self-regulation in his or her online course; therefore, it was better to explore each instructor's course in its own essence and allow categories to emerge, rather than impose predetermined codes. I think that by allowing the categories to emerge as I coded supported Merriam's constant comparative method for data analysis. Merriam (1998) advised qualitative researchers to engage in data analysis simultaneously with data collection. This approach allowed me to focus the data, avoid being repetitious in my analysis and overwhelmed by the volume of material that needed processing.

Ethical Considerations

To ensure trustworthiness and credibility, ethical considerations concerning data collection, data analysis, and data interpretation were utilized.

Data Collection Ethics

Ethical considerations were important during the qualitative research data collection process. I included Creswell's (2014) suggested potential ethical issues: "1) informed consent procedures, 2) deception or covert activities, 3) confidentiality toward participants, sponsors, or colleagues, 4) benefits of research to participants over risks and 5) participant requests that go beyond the social norms" (p. 174).

First, I developed an informed consent form for participants to sign, acknowledging the protection of their rights during the research process. Second, I obtained approval from the Institutional Review Board (IRB) at MWSU. Next, I emailed potential interviewees explaining my research project and requested their participation in the study. I offered interviewees opportunities to schedule interviews at their convenience. I carefully conducted interviews to avoid interjecting personal commentary or leading participants to a response. Also, I clarified their answers by restating their responses. Finally, to provide transparency, I emailed participants requesting verification for the accuracy of my descriptions about course observations, and their intentions for the modifications they made to their courses.

Data Verification Strategies

Trustworthiness

Merriam (1998) implored researchers to address validity and reliability and maintained both may be ensured by conducting research in an ethical manner. She said, “validity and reliability are concerns that can be approached through careful attention to a study’s conceptualization and the way in which the data were collected, analyzed, and interpreted, and the way in which the findings are presented” (pp. 199-200).

Internal validity

Merriam (1998) asserted that internal validity in all research depends on the essence of reality and how research findings duplicate that reality. Merriam (1998) explained that based on her research experience and literature on qualitative research, researchers may use “six basic strategies to enhance internal validity” (p. 204). Those six

strategies are triangulation, member checks, long term observations, peer examination, participatory or collaborative research, and researcher biases.

Reliability

Merriam (1998) described reliability as “the extent to which research findings can be replicated” (p. 205). In quantitative research, this means that one can reproduce an experiment in an attempt to achieve the same results. However, Merriam (1998) explained that in qualitative research there is no standard for usage of repeated measures in order to establish reliability from a traditional approach because qualitative researchers work to describe and explain the world according to those who are experiencing it. Since this is the case, Merriam (1998) suggested using three techniques to ensure results are reliable: the investigator’s position, triangulation, audit trail. Internal validity and reliability techniques are presented in Table 4.

Table 4

Trustworthiness Techniques

Internal Validity		
Technique	Expected Results	Examples
Prolonged engagement	<ul style="list-style-type: none"> • Build trust • Develop rapport • Build relationships • Obtain wide scope of data • Obtain accurate data 	In the field from February 2021 until June 2021; communicated through phone calls, email, video conferencing; conducted follow up communication May 2021; collected wide variety of artifacts and information from various university sources
Persistent observation	<ul style="list-style-type: none"> • Obtain in-depth data • Obtain accurate data • Sort relevancies from irrelevancies 	Generated observation notes; created screen recordings of every course; generated screenshots of relevant course information for each course;

Triangulation	<ul style="list-style-type: none"> • Verify data 	Obtained data from multiple sources: Interviews, course observations, course analytics, course documents, university website, university documents and podcast
Peer debriefing	<ul style="list-style-type: none"> • An additional perspective and guidance from a trusted source 	Received additional input for interview questions; discussed and verified findings with colleagues; reviewed study with peers
Member checking	<ul style="list-style-type: none"> • Verify documentation and conclusions 	Verified findings and interpretations with interviewees through follow up questions and direct verification for the accuracy and veracity of rephrasing their answers
Purposive sampling	<ul style="list-style-type: none"> • Site selection will provide a good venue for selecting online general education courses 	Purposeful selection of study site containing an established online presence and courses that included a diversity of faculty and students
Reflexive journal	<ul style="list-style-type: none"> • Document researcher decisions 	Generated notes; recorded thoughts and insights; tracked steps and outcomes

Reliability

Referential adequacy	<ul style="list-style-type: none"> • Provide a comprehensive picture of the program 	Collected course documents, course communication, university documents, university communications; Documented technical support, technical training, and equipment accessibility resources
Thick description	<ul style="list-style-type: none"> • Provide a database for transferability judgment • Provide a vicarious experience for the reader 	Recorded information on multiple spreadsheets for interview, course, and instructor data; used multiple data sources to generate a vivid narrative with rich details about the context, participants, and emerging themes
Audit trail	<ul style="list-style-type: none"> • Allow auditor to determine trustworthiness of study 	Generated extensive annotations on course screenshots and documents; organized and catalogued artifacts, screenshots, screen recordings, interview transcripts, annotations, and notes; catalogued multiple levels of recorded observations

Note. Adapted from Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). *Doing naturalistic inquiry: A guide to methods*. Sage.

Summary of the Study

Chapter Three provided a detailed account of the methodology I used for this study. This chapter discussed the following aspects: my role and bias as a researcher, ethical considerations as a researcher, research design and data collection strategies, data analysis and verification strategies. Chapter Four provides a narrative description of data.

CHAPTER IV

NARRATIVE DESCRIPTION

Chapter Four offers a narrative description of a midwestern land grant university, Midwest State University (MWSU), during this study. The chapter begins with a description of the case, followed by an overall description of COVID-19 and its impact on MWSU, a detailed description of study participants, and finally, instructor accounts of the behaviors associated with and various meanings for SR. The thick description of the case, the overall description of the impact of COVID-19, and the detailed description of study participants provides the reader with a vivid picture. The purpose of this study is to explore, through the lens of Tabak and Nguyen's theory of self-regulated learning in an online environment, how effective instructors of successful online courses at a midwestern university understand and facilitate self-regulated learning in their online courses. This case, which occurred during the crisis of the COVID-19 pandemic, reflects the university's ability to sustain and support student learning as the prolonged crisis ensued.

Study Setting

MWSU University Profile 2020/2021

MWSU is a public four-year institution located in the Midwest serving

approximately 25,000 students. The university offers approximately 200 majors, 80 master's programs, and 50 doctoral programs. MWSU offers students an array of courses on its main campus, two satellite campuses, a health science campus, a technology campus, an animal health campus, and an online campus. Table 5 presents Fall of 2020 enrollment figures as a representative composite of student enrollment for this study and is provided in the appendices as Appendix C.

MWSU's faculty are well respected and highly diversified. According to the 2021 Common Data Set (CDS) report, MWSU has approximately 1,100 full-time and over 250 part-time faculty members. Faculty members teach a range of undergraduate and graduate courses and undergraduate and postgraduate certificates in 27 different programs, and 41 faculty members teach virtual only courses for stand-alone graduate/professional programs. Also, according to the CDS report, some of MWSU's faculty demographics include: 300 minority faculty members; 600 female faculty members; 770 male faculty members; 100 international faculty members.

MWSU's Strategic Plan

MWSU began as a land grant school in the late 1800s on a plot of land with hundreds of acres. The mission of the university was to open doors in higher education for local and state citizens, as well as to serve and support local farming and industry needs. University publications indicate the university's updated mission is to continue its growth based on its purpose as a land grant school, but to also further enhance advances in learning, knowledge, enrichment, and economic development. MWSU's vision is that MWSU will lead in the creation of a better state, nation, and world by advancing the quality of life for all, and will fulfill the obligations of a first-class, land-grant educational

institution. MWSU's mission and vision creates the foundation for its strategic plan, which is founded on its seven core values and three core goals. MWSU's core values and core goals serve as a lighthouse guiding the university in decision making and into the future.

University Initiatives

MWSU has continuously made notable strides forward in its development. The university published a rich historical record about its early years when it had 23 ladies and 22 gentlemen enrolled in its first class and four faculty members for four major departments. The university developed quickly by adding a president, buildings, students, faculty, engineering courses, an extension program, and a reserves officer training corps, along with a myriad of other initiatives. Three recent notable electronic initiatives establishing MWSU as a technology leader were the opening of a telecommunications center, recognition as a national leader as one of the most "wired" campuses, and implementation of a web based telecommunications delivery system.

MWSU's Online Presence

MWSU's distance education program is well rounded, has earned various awards, and is governed by the National Council for State Authorization Reciprocity Agreements (NC-SARA). MWSU's website specifies that their distance education offers approximately 14 online undergraduate degrees, 36 online graduate degrees, 20 graduate certificates, and a variety of courses for active-duty military personnel to earn an associate of applied sciences degree. MWSU has received online awards and recognition such as Best Online Programs, Best Online Master's for Electrical Engineering, Best

College Reviews Online Master's degrees, Best for Vets Colleges 2019 Military Times, Top 25 Online Colleges 2019-2020, and Best Online Colleges Entrepreneurship.

University publications indicated that MWSU's online presence burgeoned because of its distance education and mainstream course offerings. In 2018, MWSU's online courses generated over 108,000 enrolled credit hours, and by December 2019, MWSU offered approximately 1,100 online courses on all its campuses. Almost every university college offered online courses, thus allowing MWSU students access to a broad range of courses ("Expanding the Classroom," n.d).

COVID-19's Impact

In early January 2020, the World Health Organization (WHO) announced that a group of pneumonia like cases existed, possibly caused by a new coronavirus, and by mid January, the Centers for Disease Control and Prevention (CDC) confirmed the first coronavirus case, known as COVID-19, in Washington (Staff, A. J. M. C., 2020). By March 2020, WHO declared a global pandemic existed because of COVID-19, and President Trump declared a national emergency. American universities immediately transitioned to online learning for the health and safety of students (Keiper et al., 2020), and all students became distance learners.

COVID-19's Impact on MWSU

MWSU released a podcast reflecting on the immediate changes the university experienced during the beginning of the pandemic. Podcast participants described MWSU's instant transition from normal educational operations to a socially distanced online learning experience and some of the events leading to the changes as follows:

- University leadership: By March 12th, all athletic events were cancelled and MWSU's president "move[d] all classes online for the remainder of the semester in a sprint to finish out the academic year." MWSU's professors and staff quickly transitioned all courses to online during Spring Break 2020, and the entire campus was transformed into a safe, socially distanced operating mode as well.
- Education: A high priority was placed on delivering a good but different product. MWSU's Office of Technology and Teaching Excellence (OTTE) and the business college's Online Distinction Centre produced "crash" courses about Canvas, the university's learning management system (LMS), so all faculty could function with online learning. University faculty were allowed to purchase technology tools and software necessary to meet the online educational needs of faculty and students. (Robinson, 2021)

COVID-19 impacted all courses at MWSU, and specifically, the 20 courses observed during this study. The courses in this study were conducted between January 2020 - May 2021 with a total combined student enrollment of 1,012 students. The greatest single course enrollment total was 244, and the least single course enrollment total was five. The courses were categorized in the following divisions: one doctoral, five masters, eleven upper-division undergraduate, and three lower-division undergraduate. Overall, the course breakdown for asynchronous and synchronous types of courses was:

- eight of the upper-division undergraduate courses were asynchronous courses and one was synchronous;
- three lower-division undergraduate courses were asynchronous;
- four masters level courses were asynchronous, and one was synchronous; and

- one doctoral level course was asynchronous.

Additionally, two of the courses were conducted during Spring 2020. Four of the courses were conducted during Fall 2020 and fourteen of the courses were conducted during Spring 2021. Nineteen of the courses were 16-week courses and one course was an 8-week course. It is important to note that two other upper-division undergraduate courses were held in Spring 2020 and were forced to switch from a synchronous to an asynchronous format because of COVID-19. These courses were held in a blended format for the first ten weeks of the semester, and the last six weeks of the semester they were conducted asynchronously. Table 6 offers an in depth view of overall course information for all 20 courses. Table 6 is provided in the appendices as Appendix D.

Participants

This section presents profiles of the five individual professors and four focus group interview participants. All interviewees participated in a 60-minute interview via Zoom. The five professors had varied levels of teaching experience and taught in various disciplines. Four of the professors were identified as outstanding online instructors based on their nominations for MWSU's Online Teaching Excellence Award, while one was recognized as an outstanding online instructor within his department and was referred to the study by a colleague. Focus group interviewees were identified by instructor interviewees as "essential online support personnel" to many of the professors, especially because of COVID-19's role in forced distance learning. Table 7 contains a summary of each participant's profile. Table 7 is provided in the appendices as Appendix E.

Instructors

Professor Julie Brown

Professor Brown has been an Assistant Professor at MWSU since 2019. Since arriving at MWSU, Professor Brown has taught lower-level undergraduate, upper-level undergraduate, and graduate courses in the Political Science Department in a variety of formats including face-to-face, asynchronous, and synchronous. While earning a PhD in Public Affairs, Professor Brown accumulated teaching experience by teaching face-to-face courses, so she did have some teaching experience prior to MWSU.

Professor Joe Smith

Professor Smith has been an Assistant Professor at MWSU since 2017. Since arriving at MWSU, Professor Smith has taught lower-level undergraduate, upper-level undergraduate, and graduate courses in the Microbiology and Molecular Genetics Department in a variety of formats including face-to-face, asynchronous, and synchronous. Some courses Professor Smith teaches are for non-majors. Prior to MWSU, Professor Smith spent seven years in research about bacterial community behavior as a Postdoctoral Fellow at an Ivy League university.

Professor Jeff Green

Professor Green has been an Assistant Professor at MWSU since 2014. Since arriving at MWSU, Professor Green has taught lower-level undergraduate, upper-level undergraduate, and graduate courses in the Entomology and Plant Pathology Department in a variety of formats including face-to-face, asynchronous, and synchronous. Some courses Professor Green teaches are for non-majors. Prior to MWSU, Professor Green taught online courses and developed an online master's degree in the biology program at another university.

Professor Jerry Johnson

Professor Jerry Johnson has been an Associate Professor at MWSU since 2012. Since arriving at MWSU, Professor Johnson has taught upper-level undergraduate and graduate courses in the Management Science and Information Systems Department in an asynchronous format. Professor Johnson has extensive experience in online teaching. He has taught over 22 different courses online and some of them for multiple semesters. For example, Professor Johnson has taught three different upper-level undergraduate courses for 48 semesters, 35 semesters, and 30 semesters.

Professor Julius Jones

Professor Julius Jones has been with MWSU since 2012 and currently is an Associate Professor. Since arriving at MWSU, Professor Jones has taught lower-level undergraduate, upper-level undergraduate, and graduate courses in the Aviation and Space Department in a variety of formats including face-to-face, asynchronous, and synchronous. The Aviation and Space Department has an online graduate program with students enrolled from across the globe, and Professor Jones teaches many of those courses. Prior to arriving at MWSU, Professor Jones had an extensive career as a law enforcement officer and with a state bureau of investigation. During that time, he was involved with teaching and training officers and state bureau investigators, from the state and other countries, about improving job skills and investigative techniques.

Online Instructional Support Personnel

During instructor interviews, instructors mentioned MWSU's OTTE support personnel's intricate roles in helping online instructors succeed with their content organization, presentation of course materials and activities, as well as instructor support with the LMS. A focus group interview was conducted with most of OTTE's teaching

support personnel to gain further insight and understanding about online courses and instructional support at MWSU. Here are their profiles:

Kelly

Kelly is a Teaching Support Specialist and has worked with online courses and students for nine years. She stated that her “role is to support instructors with the LMS, as well as to help them grow with...online teaching.” She taught as an adjunct for MWSU and while teaching, Kelly would attend OTTE’s tutorial sessions for the LMS and “remembers sitting in a computer lab trying to figure it out...” She has taught both college students and university professors using the online or hybrid format. She took online courses during her PhD program as well as professional development courses. She has brought some elements of organization from those experiences into her current work.

Kim

Kim is a Teaching Support Specialist and has worked with online courses and students for nine years too. She taught as an adjunct for MWSU and stated, “...I used the grade book and [the LMS] as a place to hang materials and post videos and things like that...[and]...I actually went to [OTTE] workshops about the LMS, webinars...” When she began working for OTTE, Kim shifted, “from being on the instructor side of things to being on the support side of things.” As a Teaching Support Specialist, she has taken various professional development courses about online courses and is familiar with Quality Matters, an approach to producing high quality courses.

Kurt

Kurt is a Teaching Support Specialist and has served in this role for about seven years. His role is a bit different than Kelly and Kim’s because he provides technical

support for online courses. He worked on the development side of an online management system while employed at another university. Since working at MWSU, Kurt has received some basic training with Canvas. He also described his training as mostly, “...self-discovery, just playing with the tool...and reviewing information on Canvas communities,” a place where questions are posted and answers are discussed collectively.

Dr. Kerry Kerns

Dr. Kerry Kerns has been the Associate Provost and Director of OTTE since 2012. Dr. Kern’s role is to provide:

...centralized leadership and coordination of Outreach, Online Education, and oversee MWSU’s central support agency, OTTE, which provides an array of teaching-related services including instructional design, instructional technology, classroom technology, video production, graphic design and video captioning.

Professional Practice

The instructors in this study provided a diversified mosaic of their online professional training and online instructional delivery style. Each instructor possessed background knowledge about teaching online because of taking online courses for personal or professional development or because of help obtained through MWSU’s OTTE. Their background knowledge served as an instructional reference point for decision making about how to deliver online course content successfully. The information below presents a synopsis of the instructors training and online instructional delivery style.

Online Instructor Training

Professor Brown took an online course by Coursera and stated that the course taught her how *not* [emphasis added] to teach online; however, she did state that she did “learn a few things about good ways to present information, especially complex information online from the course.” Also, Professor Brown took a six-week training module, “Preparing Online Instructors,” through MWSU’s OTTE, accessed some of their online training videos, and contacted OTTE personnel requesting help with various tools. Finally, she has engaged in eBook training for eBook software Mindtap.

Professor Smith has not taken any online courses, so he does not bring any prior online experience to his courses. Professor Smith has accessed some of the training videos available from MWSU’s OTTE and has requested their additional help for Canvas tools. Professor Smith was involved in Beta testing the Canvas platform, and he said that he learned quite a bit. He has relied on other colleagues and Google for information about the system too.

Professor Green attended online workshops and took an online course for professional development for agricultural leaders. He took the online course in part to gain insights about how others teach online, but he “did not enjoy the experience and he does not know if it was the course or his own learning style causing him not to enjoy the course.” He has implemented assignment ideas from the online course though into his own online courses.

Professor Johnson took online courses by Coursera, but he has not brought any of that experience to his online courses. He prefers to run his online courses more like a Twitch live streaming experience and learned about this style by participating in many Twitch live streaming experiences. Professor Johnson contacts OTTE little to none for

any assistance because his courses are highly specialized information systems and cybersecurity courses that require specific software for student usage, and he does not rely on many of the internal functions within the LMS because he stated: The LMS does not necessarily support some of what I need.

Professor Jones did not indicate whether he has taken any online courses; however, he took the six-week training module, “Preparing Online Instructors,” through OTTE. He was “pleasantly surprised” while taking the course because he was “treated like an actual online student,” and he felt he learned a good deal because he experienced it from a student perspective.

Online Instructional Delivery Style

Instructors in this study demonstrated unique instructional delivery styles. All of them delivered course material in a lecture format by recording their lectures. Professors Brown, Green, and Jones included PowerPoint presentations of material during their recorded lecture, so students were able to see and hear the material. All the professors uploaded their lectures directly to their course modules, but Professors Brown and Jones made their recorded lectures available in Canvas Studio too.

Professor Smith demonstrated a unique instructional delivery style that evolved over time. Originally, Professor Smith had a cameraman from MWSU’s OTTE department record his class lectures live, and he posted the lectures along with notes to his courses. Next, he used a recording studio to record his live lectures while using slides and a document camera. Finally, Professor Smith continued to use some of his previously recorded lectures, but during Fall 2020, he began using SWIVEL technology for recording. SWIVEL is an artificial intelligence robot that tracks Professor Smith’s live

movements and records at the same time. Professor Smith stated that it is important for online students to receive coursework in a classroom like environment, and SWIVEL allows Professor Smith to better simulate that experience.

Professor Johnson demonstrated a unique instructional delivery style too. Professor Johnson used a “Twitch live streaming style” demonstration of coding, scripting, and database management material. He used Canvas for content delivery, and he used additional software programs that better suit his needs and purposes, such as integrating an anonymous messaging system available outside of Canvas so students can contact him with questions and complaints anonymously. He stated that this is important for the types of students in his courses and met his philosophical approach to teaching and democracy.

Student Learning Processes (SLPs)

Although many instructors have a personal instructional delivery style for course content, instructors in this study demonstrated an intentional usage of the LMS in order to create and facilitate learning processes for students. Some instructors described how they used specific internal functions in the LMS to facilitate many of the overall learning processes for their course, and other instructors discussed how they used a combination of the LMS along with a course assignment to create a specific learning process for the students.

Professors Smith, Green, Brown, and Jones offered their descriptions of how they intentionally used the LMS to facilitate some of the overall learning processes for their course. Professor Smith facilitated overall learning through modules and released the content according to a timeline, so students moved seamlessly through the course at a

regulated pace. Professor Green used the calendar function, so students noticed assignment due dates and his Teaching Assistant (TA) sent reminders two hours before assignments were due to students who had not turned in their work yet. He also linked Banner to the LMS, so students were able to see important university dates like last day to drop courses or university graduation. Professor Brown tried to be “clear in the syllabus and with her guidelines, so students know how they can move through the learning process.” She had a homepage that changed weekly and read like a blog. She had modules set up and used rubrics heavily because she thought students were able to self-regulate better because rubrics allowed students to understand how to earn their grade. Professor Jones used the calendar function so that notifications were posted about assignments, and he posted announcements reminding students about what blocks they were in for the modules, when midterms were and when videos were available to review for the midterm, or any other important course information students needed reminders about. Figure 3 is provided as an example of Professor Johnson’s intentional use of an internal function in the LMS to facilitate the overall learning process for his course.

Figure 3

Professor Johnson Facilitating the Overall Learning Process

The screenshot displays a section titled "Coming Up" with a "View Calendar" link. It lists three upcoming items:

- Homework 12**: MSIS-3333-31359, 1 point • Mar 18 at 12pm
- Exam 2 Bads**: ENTO-2003-30655, 0 points • Mar 19 at 11:59pm
- Minor Assignment**: ENTO-2003-30655, 50 points • Mar 19 at 11:59pm

Below these items is a link that says "5 more in the next week ...".

The "Recent Feedback" section below it shows "Nothing for now" and a "View Grades" button.

Moreover, Professors Smith and Jones intentionally used an internal function in the LMS along with an assignment to create a specific learning process for exam preparation for students. Professor Smith explained that he created homework assignments resembling exams so students could use homework assignments as a study aid for exams. Professor Smith administered exams by using the Quizzes function of the LMS, and when exams were completed exam answers were released for student review. He encouraged students to review exam answers upon release, so they had a study aid for the final exam. Professor Jones created an assignment containing 26 questions that students could practice answering an unlimited number of times as an exam preparation means. He used this exam preparation assignment along with the Quizzes function of the LMS to facilitate an exam preparation learning process for students. Figure 4 represents Professor Jones' use of an internal function in the LMS along with an assignment to facilitate a specific learning process for students.

Figure 4

IAM Mod 01 Prep Exam (Information Assurance Overview)

Due	No due date	Points	26	Questions	26
Time Limit	None	Allowed Attempts	Unlimited		

Instructions

Be sure to check your outcomes at the end of the exam. The correct answer is not given on missed questions but you will see a prompt for the correct slide to review.

◀ Previous

Next ▶

Additionally, instructors intentionally used some internal functions in the LMS to notify students about direct interaction opportunities with them for students to gain valuable information about assignments, exams, or other important aspects of the course. Instructors did not specifically mention this intentional usage of the LMS, but this usage was observed during course observations. Instructors used internal functions such as announcements and email to notify students about opportunities for instructor appointments and exam feedback. Instructors used the internal function of a discussion board FAQ page to facilitate student-to-instructor interaction about generalized course or assignment information. Table 8 provides a quick view of these interaction opportunities.

Table 8

Observed SLPs in Online Courses

SLP	Number of Courses Containing
FAQ Opportunities	9
Exam Feedback Opportunities	4
Instructor Appointment Opportunities	16

Focus group members described how instructors should intentionally use the internal functions of the LMS to facilitate the overall learning process of the course similar to instructors, but they also offered additional insights. Kurt suggested instructors should use internal functions to facilitate the overall learning process by “...putting timers on modules,...putting links not to just the reading materials, but also links to all of the relevant assignments and discussions into module[s]...so that the module acts as sort of a checklist for the student...” Kim offered that sometimes she suggests instructors should use specific internal functions as a problem solving mechanism such as messaging students who haven’t turned in an assignment. Kelly recommended instructors should connect their overall course goals along with “the goals of each individual piece of the course” to their usage of the internal functions of the LMS to facilitate different learning processes within the course because “...there may be pieces of [course content] that are self-paced that [instructors] keep open and available to students, but then there are pieces that [instructors] really want to release one at a time because that presence of teaching is important.”

Student Learning Factors (SLFs)

Throughout the study, instructors described two different types of student learning factors, intrinsic and extrinsic, that they felt influenced student performance. Instructors described intrinsic factors as internal student characteristics and extrinsic factors as external variables, and instructors indicated both factors influenced student performance normally and during COVID-19.

Intrinsic factors

Instructors used common terms, such as confidence or student values, when identifying the intrinsic factors connected to student performance. For instance, Professor Brown stated, “I think it is probably the same as what promotes performance to an extent in the regular classroom. It is some kind of a confidence...It’s that confidence or that trust in the systems we have set up...” Professor Jones stated, “some of that I think goes back to the person themselves and their basic upbringing and their values. I would have to say that basic intrinsic value that most of them have is to do well and make themselves stay at it to keep their nose to the wheel.” He also added, “[by] having those essential values...They take risk on. They will take the challenge [of the course]...”

Extrinsic factors

When discussing the extrinsic factors that influence student performance in their courses, instructors described a variety of factors. For example, Professors Smith and Brown focused their remarks on lack of internet access, technical problems, or poor technical support. They remarked:

- ...I don’t think there are a lot of students that are limited in their technology. I experienced that a little bit last semester where students had power or internet outages.... [Also,]...with students away, we were at least encouraged to use automated proctoring software, Examity. It works well for 90% of students, but for some students it is full of technological problems. Sometimes it is user error. Sometimes it is things like we cannot figure out [why] it doesn’t work on their computer... (Professor Smith)

- their access to reliable internet...there are some really serious equity issues with that in terms of...maybe they didn't have reliable internet, maybe they didn't have power etcetera. (Professor Brown)

Professor Green focused his answer on American Disabilities Act (ADA) requirements and technical training and support as he discussed extrinsic factors when he stated:

...I have had students who are hearing impaired or who are visually impaired and I have had to adapt my lecture recordings to meet ADA requirements...I also use an online book and it is [on] a different website so....They have to figure out how to gain access, take five question quizzes, submit their answers, and in the beginning of every single class...four or five of them struggle with that and I have to work with them to get them on the right page. (Professor Green)

Professors Jones and Brown presented a different perspective and focused some of their answers about extrinsic factors on a student's home life. Professor Jones said, "...[extrinsic factors] would be their home life. Even though they are learning how to use this technology, is it available to them at home? The same internet accessibility, the same computer, the same as it would be at school that [the university] would provide."

Professor Brown expressed, "...those things that contribute to creating a learning environment, like a student's home environment...I see my students sitting on couches with their laptops balanced on their legs, maybe for comfort, maybe for whatever... So, when I think about factors that would influence their ability to perform, those are the kinds of things that I would think of...things like a quiet environment."

Finally, Professor Jones also described language barriers as other types of extrinsic factors. For example, he said, "...I am having a little bit of a problem with language...even though [students] pass the [Testing of English as Foreign Language] TOEFL, I think they study...know how to pass it...I guess that could be a factor, a first language thing."

Comparatively, MWSU's OTTE support personnel discussed extrinsic factors in different terms. For example, Kurt explained that a substantial part of his job is to assist instructors with the extrinsic factors of technical support, technical training, and equipment accessibility and to ensure that teachers understand the strengths and weaknesses of the LMS, and they are not asking the system to do something it is not meant to do. He also makes sure instructors know how to direct students for help with technical support like the help desk. Kurt tries to build instructor self-efficacy for leading the class and providing clear instructions to the students so students feel like they can adequately use the technology. He understands that a student's inability to use the technology, "acts as a limiting factor, and dampens their curiosity in their drive to go into the material further."

Kim added a related piece to extrinsic factors was, "helping instructors remember that they are not the only class that a student has. So, technology for the sake of technology is not what we want because [we] don't want students to have to navigate different technologies in all six of their classes this semester." Kurt concurred with Kim and iterated, "[Instructors] should not use anything more complicated than it has to be. [Instructors] should use as complicated of a thing as necessary, but no more complicated than is necessary." Finally, Kelly offered another dimension of thought. She believed that

extrinsic factors influenced the intrinsic factors. She reasoned, “If everyone can navigate the system, then they have all the technical aspects in place [and] I think it affects how motivated [students] are and how [students] can stay ahead of deadlines.”

Although instructors provided varied answers about extrinsic factors, during the study, I observed all 20 courses and noticed instructors' courses generally contained three types of external applications: eBook, Lock Down Browser, and Other. External applications deemed as “other” were course specific applications necessary for students to use to gain required skills for course outcomes or were specifically tied to course content. The extrinsic factors instructors implemented were external applications necessary for the course, tutorial availability for external applications, technical support for external applications, and a course introduction with explicit LMS instructions.

For example, four of the 20 courses contained external applications in which the instructor provided tutorials for the applications for student usage. Also, four of the 20 courses provided direct links for technical support for the external applications for students. Finally, four of the 20 courses contained course introductions with specific directions for the LMS. Table 9 provides a quick view of the extrinsic factors found in the online courses for this study.

Table 9

Extrinsic Factors Found in Online Courses

SLF	Number of Courses Containing
Course Introductions providing explicit directions for LMS	4
External Applications	12
Tutorials Available for External Applications	4
Availability of Technical Support for External Applications	4
Types of External Application Used	

SLF	Number of Courses Containing
Ebook Only	1
LockDown Browser Only	1
Ebook and LockDown Browser	3
Other	7

Online Course Design

Throughout the study, instructors and focus group members relayed their thoughts about course design, possible course design improvements, and course design modifications as influencing factors on student performance and student attitudes about the LMS as well as the course. Instructors' methods for their course design choices were primarily based on organization of course content. All the instructors stated that they organized their online course content by creating units or weekly modules, a means used to put their content in one contained space. Modules mostly included course reading material, lectures, lecture notes, or other various relevant content for the week or topic.

Focus group members discussed their perspective about course design and how they supported instructors with course design. Kelly summarized how OTTE's instructional support helped instructors with course design when she stated:

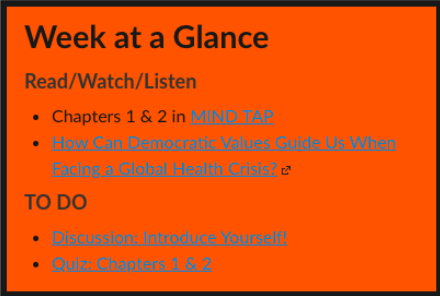
It is thinking first of all where do we want students and what do we want students to know and be able to do by the end of the course. That's the big idea...So, there's that aspect of course design and then there is that aspect of just helping them put it in a package that is accessible to students that is organized...so we have to help them figure out how to make modules that flow and make sense to students. (Kelly)

Although instructors emphasized features like modules when discussing course design, there were other course design features in the LMS instructors implemented within their courses too. Many instructors used various course settings to regulate the content and the pacing of the course by setting release dates, start dates, and end dates on content, assignments, quizzes, and discussion boards. Additionally, several instructors only enabled the course navigation menu links that were necessary for their course, rather than allowing all of the preset navigational buttons to remain on. Professors Smith, Green, and Johnson all attested they intentionally enabled specific buttons on the course navigation bar as a course design strategy.

Additionally, even though instructors did not mention using course signposts as a course design feature, all 20 courses used course signposts as part of their course design. Course signposts are like road signs. They guide students with the actions they should take or the “routes” they should follow each week, each unit, or with specific assignments. Sometimes instructors used generalized signposts, yet other times, they used specific signposts. Figure 5 is an example of a signpost often used by Professor Brown.

Figure 5

Course Signpost Example



Week at a Glance

Read/Watch/Listen

- Chapters 1 & 2 in [MINDTap](#)
- [How Can Democratic Values Guide Us When Facing a Global Health Crisis?](#) ²

TO DO

- Discussion: Introduce Yourself
- Quiz: Chapters 1 & 2

Additionally, Table 10 provides an overview of the course design features that instructors used for their courses. Table 10 is offered in the appendices as Appendix F.

Course Modifications

Throughout the interviews, instructors discussed their approach to course design modifications in order to support student performance and self-regulation. Four instructors discussed modifying their courses in various ways. Professor Smith remarked he modified course design in minor ways depending on whether the course was administered in a synchronous or asynchronous manner. He explained when his online courses run concurrently with his face-to-face courses, they use the same syllabus, same exam schedules, and he “lock[s] the modules until the previous module is complete so [students] cannot work ahead...” Professor Brown made course modifications based on the effects of the COVID-19 pandemic. She was as flexible as possible with deadlines, normalized students turning off their cameras or using backgrounds because of her concerns with equity and gave her students forums to ask “non- course related questions...things that first generation scholars don’t know...” as a way to help level the playing field. Professor Green modified course design to correct something that did not work. For example, he specifically used the quiz function in the LMS, so he could identify and discard bad exam questions. He adjusted content delivery by implementing weekly modules because students and information seemed to be lost when he merely provided a whole list of content. He also implemented an extra credit assignment for students that helped them create an assignment calendar, and he indicated that “really helped a lot” during Spring of 2020. Professor Jones modified his course design significantly after attending the “Preparing Online Instructors” course by OTTE. He

transformed his rather “rudimentary approach” by incorporating more things, and one of his bigger design modifications was incorporating discussion boards. Contrastingly, Professor Johnson did not use course modifications as an option because he felt, “You are either a good teacher or not. As a teacher, there is not a whole lot you can do to make yourself better or your course better.”

Course Design Improvements

Instructors discussed their perspectives about course design improvements that could be made by instructors overall or within the LMS. Some offered generalized comments about instructors putting in more care and effort to their online courses, but Professors Smith and Green offered specific comments about using high quality content or improving design within the LMS. Professor Smith felt high quality content, like engaging lectures, is more important than the LMS. He said, “...if you have a really terrible lecture, no amount of nuts and bolts in the LMS are going to save it....” Instead, he advocated for providing lectures students look forward to watching, rather than dreading it. Professor Green maintained gamifying a course webpage would be a good course design improvement. He suggested, “...if there was a way to gamify the course webpage so that you had to complete something before...you get to the next thing and to finish this class. If you could gamify it in some way that would be really great.”

Professional Perspectives

Instructors struggled a bit describing their personal meaning for self-regulation (SR). When presenting their interpretations of SR, instructors usually did not use any specific SR terminology; however, they mostly provided their own substantive

descriptions that correlated with SR factors. It seemed important to accurately portray their variations of understanding based on the themes that emerged from their responses.

Differences Between Undergraduates and Graduates

As instructors described SR, many attributed behavioral differences between undergraduate SR behaviors compared to graduate student SR behaviors. All of the instructors associated age and experience as a major influencing factor for the differences. Professor Jones described it as, “I think it is an age thing. Adult learners versus 18-year-olds. I think there is a chasm there...” He expanded his views about the behavioral differences and described undergraduates as needing a, “...parental type of adult figure [in an instructor] that they know they can go and talk to and not be criticized.”

Professor Green also thought the differences between undergraduate and graduate student SR behaviors were because of the age and experience of a student and his perspective was based on his experience in a distance master’s program that was filled with high school teachers and members of the active military. He said, “[They were] very self-motivated like, ‘I need content. I have been in the world.’” He further stated, “[However,] doing it for undergrads, I had a very different experience, especially with my undergrads being non majors. They tend to think, ‘well you know this should be an easy A and oh I missed a few things but oh well.’”

Finally, instructors described other SR behavioral differences as:

1. Undergraduates need added structures, like reading quizzes, and maybe added pacing for course content (Professor Jones);

2. Undergraduate courses contain “a certain population who procrastinate and some are deadline driven” (Professor Green);
3. Undergraduates may try to binge watch or multitask while watching video lectures, rather than focusing and taking notes (Professor Smith); and
4. Graduates tend to work at a pace that best fits their schedule, as well as consume course materials and complete assignments sooner than the published course schedule (Professor Jones).

Positive Behaviors

When instructors discussed positive SR behaviors they noticed, various instructors pointed out, generally, some students liked online courses and performed well, but they were not sure what specific factors contributed to student SR and individual student success. For instance, Professor Smith explained:

There are students who do exceptionally well in an online course, but I don't have any first-hand knowledge of what self-regulation behaviors that they were engaging in. I can just guess that they were, you know, devoting the time necessary to do it. You know one of the self-regulation behaviors that online students will do sometimes is interact with the material repeatedly. They will, if they don't get something, they will go back and rewatch that lecture or part of the lecture or they will watch the review multiple times...(Professor Smith)

As the COVID-19 pandemic persisted from Spring 2020 to Spring 2021, in essence, most students were required to become online learners. Some instructors did express that they thought students had overall become better at SR as compared to pre-pandemic learning conditions. Over the course of time, students adapted to online

learning and became better at SR, perhaps because it was necessary. Professor Brown described it best when she asserted:

I think the students overall have become better at self-regulation, since say a year ago, and that makes total sense...and compared to when I taught well before the pandemic online, they have definitely become better at self-regulation, [like] knowing that they can [self-regulate], what they need to do, what they want to do, or can do...I think that [MWSU] has made some good efforts in trying to be cognizant of student mental health that maybe has had an impact...(Professor Brown)

Even though students may have improved their abilities to SR without any clear indicators as to why students improved, Professor Green offered his insight about SR when he explained:

COVID allowed all students at [MWSU] to experience online learning because we shifted from face-to-face to online only after Spring Break, and then the following semester, the same deal. So it was a new experience for a lot of students and there was definitely a proportion that did not like it. There was also a proportion that loved it. And so [Fall 2021], we plan to go back to normal. So not recording lectures, not posting anything, just come to class or you miss out. I think about 20 percent of our students are really going to suffer because they have gotten used to watching the lecture again or skipping class and watching it whenever...The flipside is there is 20% of students who just hate online learning. They can't have the freedom. I think it really just comes down to, while [students are] watching this lecture [they] can check [their] phone or pet the cat or whatever

it is. Humans are not good at multitasking and students are especially not good at it. Their brains have not gelled yet, so I think that there is 20% [who] can't do online very well and 20% [who] love it and then 60% [who] are like 'well sometimes it is nice. I slept in, but I can still watch the lecture and most of the time I want to be in class.' (Professor Green)

Negative Behaviors

One the other hand, some instructors noted that some students demonstrated negative SR behaviors that influenced student performance. Instructors described some of the negative online SR behaviors as:

1. Not attending, not turning in any work, having a bad attitude about online learning, and avoiding online coursework by indulging in other short term rewards (Professor Jones),
2. An unfiltered online presence (Professor Brown),
3. A lack of motivation, lack any sort of set schedule, and procrastination (Professors Green and Smith), and
4. An inability to moderate how and when they consume course materials (Professor Smith).

When discussing negative SR, Professor Johnson's pointed response about students' abilities to SR clearly depicted the gravity of the situation students faced. He said:

It is extremely hard for students, even good students, to self-regulate right now. It is hard for them to get up out of bed and get going for the day. There are so many

issues they are dealing with. It is hard to self-regulate for everyone right now.

There are mental and physical health issues involved. (Professor Johnson)

Even though instructors view negative SR behaviors as detrimental to students, Professor Smith recognized that students do have rational reasons for negative SR behaviors, like poor attendance, displayed during this study. He explained:

...a lot of them were not coming for an entirely rational reason and that reason is they could then work during the day and earn money and then watch lectures on their own time...if work is a higher priority because they have to make ends meet, then that probably does not facilitate you doing as well as you possibly could have...My impression from the pandemic situation was that students were taking the opportunity to work to make ends meet...It's an economically rational decision. It is, 'I can go to class at the time that it is happening, or I can pick up an extra shift and I can do class as well.' Is there a hazard associated with that? Yeah sure. Apparently, it is not a decision born of laziness. It is a decision of economic rationality. (Professor Smith)

Varied Meanings

When instructors related their specific meanings of SR, initially their responses were short, direct, and straightforward. Professor Brown described SR as means students use to protect themselves, and the manifestations of self-regulation are visible in student behaviors physically, mentally, and emotionally. Professors Jones, Smith, and Green explained SR as more closely related to a student's interaction with course content. Professor Smith specifically viewed SR as the actions students take to "interact with the content of a course at measured pace or whether they binge." Professor Jones described

SR as a means to success, a time management issue, and how students ensure they are studying properly so “that they are getting the best they can out of this class.” Finally, Professor Green offered a succinct explanation of SR: self-regulation means students being in charge of when they learn. It’s time management.

Student Motivation

Professors Jones and Green furthered their explanations of SR by offering descriptors like student motivation. Professor Jones stated, “to me self-regulation and motivation go hand in hand.” Professor Green also described SR as a motive rooted in natural curiosity. He connected their natural curiosity as a way to success in his course, but if a student’s only motive was to learn enough course material to earn a “C” on the test, then those students struggled more. He related, “the students that are not curious tend to tune it out and they are like, ‘oh my gosh this is so much information I cannot figure out what this is all about.’”

Freedom to Choose

Moreover, instructors in this study also described SR in an online course as a form of freedom. Instructors felt like online students were afforded freedom to control these learning aspects:

- choosing if and when to do assignments (Professors Brown, Green, and Johnson),
- completing or not completing assignments based on assignment point values (Professors Brown, Jones, and Green),
- choosing when and how often to view video lectures (Professor Smith),
- regulating watching lecture videos-whether it be in an entire sitting or in segmented viewing times (Professor Smith),

- regulating their consumption of course materials (Professor Jones),
- setting task goals in order to meet assignment deadlines (Professors Green and Johnson), and
- using planning strategies to meet assignment requirements and deadlines (Professors Green, Jones, and Johnson).

Professor Brown described another area of freedom for online students. She mentioned that SR in her online course affords students the freedom to choose when to turn their cameras on or have their backgrounds blurred. Professor Brown described various reasons students may want to turn their cameras off. For instance, they may not want to show their physical environment, or it allows them to not feel so anxious mentally or emotionally, or because they are multi-tasking. There are a myriad of reasons for students to choose to turn cameras off and Professor Brown iterated that turning their cameras off allows students the freedom to choose this action as a means to protect themselves.

Summary

Chapter Four provided a detailed description of the setting and conditions of the case by discussing the university profile, a context for COVID-19's impact on MWSU, a detailed description of nine study participants, and themes that emerged during the time of the study. Chapter IV categorized the themes discovered into three major categories: professional practice, professional perspectives, varied meanings of SR. Chapter Five will analyze how the instructors in this study understand and facilitate self-regulated learning in their online courses by examining data connected to factors that have dynamic, antecedent effects on self-regulation. The data will be processed through the

lens of Tabak and Nguyen's (2013) conceptual model, specifically the intrinsic factors, extrinsic factors, perceived usage, perceived ease of use, and a student's attitude toward the online system.

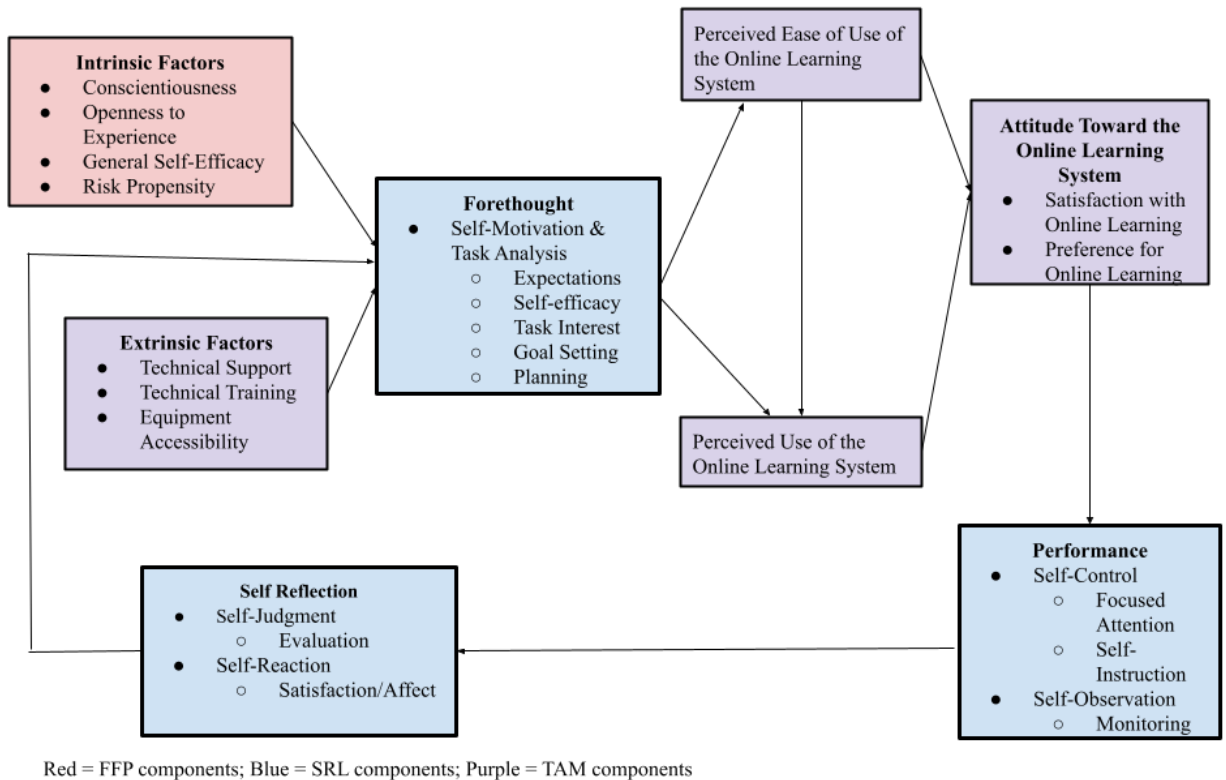
CHAPTER V

EXPLANATION OF DATA THROUGH THEORETICAL LENS

For this study, I collected data from a variety of sources including course observations, instructor interviews, support personnel interviews, course documents and artifacts, university website information, and university publications. Chapter Four presented a narrative description of the data, and Chapter Five provides an explanation of the data through a theoretical lens. The purpose of the study was to explore, through the lens of Tabak and Nguyen's theory of self-regulated learning in an online environment, how effective instructors of successful online courses at a midwestern university understood and facilitated self-regulated learning in their online courses. Tabak and Nguyen's (2013) theory of self-regulation in an online learning environment (OLE) includes components from Bandura's Self-Regulation model from Social Cognitive Theory (1991), Zimmerman's (2002) Self-Regulated Learning Model, Davis' (1989) Technology Acceptance Model (TAM), and Barrick and Mount's (2005) Five Factor Model of Personality (FFP). The different components from each theory were included in Tabak and Nguyen's conceptual framework to depict the dynamic, antecedent effects influencing self-regulated learning SRL in an OLE. Figure 6 represents Tabak and Nguyen's (2013) conceptual model.

Figure 6

A Conceptual Model of Self-Regulation in Online Learning Environments



Note. Adapted from Tabak, F., & Nguyen, N. T. (2013). Technology acceptance and performance in online learning environments: Impact of self-regulation. *Technology, 9*(1), 116-130.

Facilitating Self-Regulated Learning

Intrinsic Factors

Tabak and Nguyen's (2013) conceptual model represents the intrinsic factors from Barrick and Mount's (2005) FFP model as having antecedent effects on the Forethought phase of SRL with the subtitles of Self-Motivation and Task Analysis. The FFP intrinsic factors contained in Tabak and Nguyen's (2013) model are a student's

conscientiousness, openness to experience, general self-efficacy, and risk propensity (p. 118). Theoretically, students have direct influence and control over these intrinsic factors because they are accessible and controllable factors within their person.

Instructors' Mindsets about Conscientiousness and General Self-Efficacy

Tabak and Nguyen (2013) explained those exhibiting behavioral characteristics for conscientiousness demonstrate skills such as task analysis, organization and planning, goal-orientation, and “adoption of strategies along with a can-do attitude” (p.120).

Bandura (1997) posited that self-efficacy is a belief in one’s personal abilities to perform tasks and achieve an expected outcome. During this study, instructors primarily focused their comments about intrinsic factors influencing self-regulation (SR) on the attributes of conscientiousness and general self-efficacy.

All instructors exhibited knowledge, understanding, and experience with online student intrinsic behaviors of conscientiousness and general self-efficacy because they described those behaviors based on student self-reported behaviors to the instructors or observed student behaviors, whether positive or negative. Professors Brown and Jones' comments focusing on general self-efficacy emphasized a student’s personal self-confidence and a student’s confidence in the learning systems available within the course and the university, so that they can SR. Professor Smith offered examples of students exhibiting conscientiousness and self-efficacy when he described students making deliberate choices and adopting strategies to manage their personal lives, their work lives, and maintain coursework. He provided specifics about how students managed choosing when to work, when to attend class, attending to their personal schedules, and attending to coursework. Professors Jones, Green, and Smith discussed conscientiousness and self-

efficacy behavioral differences between undergraduate and graduate students, such as undergraduates needing tighter, scaffolded structures for course content and pacing, while graduate students needed a generalized framework for course content and less pacing. Professors Jones, Green, and Smith also specifically offered accounts of negative SR behaviors associated with conscientiousness and self-efficacy. Some examples of negative behaviors mentioned were lack of motivation, not submitting work, procrastination, and not attending class. Although professors felt not attending class was a negative behavior, Professor Smith acknowledged that for many it was a behavior born out of economic necessity, and therefore, it was a rational reason. Ultimately, the instructors offered varied interpretations of the meaning of SR, but all the interpretations centered on conscientiousness and self-efficacy because they discussed time management, focus, motivation, autonomy with choices, and ownership of learning.

Most importantly though, all the professors acknowledged an acute awareness of the effects of COVID-19 on students' conscientiousness and self-efficacy, but Professor Johnson painted a clear picture of those effects when he identified mental health issues and an inability to self-regulate because of the duress students experienced. He described students, even good students, being unable to get out of bed.

Professional Practices for Conscientiousness and General Self-Efficacy

All the instructors used a myriad of instructional practices and strategies exemplifying support for and facilitation of conscientiousness and self-efficacy. Instructors did this through intentional usage of the learning management system (LMS) to create coherent learning processes for students. Some instructors used specific internal functions within the LMS to use a learning process available, and other instructors used a

combination of the LMS along with a course assignment to create a student learning process for the course. Professors Smith, Green, Brown, Johnson, and Jones strategically used the LMS to create learning processes for students by utilizing content organizational systems like modules, releasing content on timers, posting assignments and exam reminders, using the course calendar function, and posting course comments offering assignment feedback, clarification, and further instructions. All the instructors offered vivid descriptions of these practices, and they were verified through course observations.

Further, some instructors augmented their professional practices supporting conscientiousness and self-efficacy by implementing additional opportunities for student and instructor interaction and maximizing course design which included instructor appointments, exam feedback opportunities, and a FAQ Page or Course Questions Page. These opportunities allowed students to interact with the instructor to learn valuable information and further their learning experiences with assignments, exams, or other important aspects of the course. Some instructors maximized usage of course design features and modified course design when necessary. All the instructors maximized course design by using course signposts which were used as a means to increase conscientiousness and self-efficacy.

MWSU's Support for Openness to New Experience and Risk Propensity

The characteristics of openness to new experience and risk propensity are closely associated. Tabak and Nguyen (2013) explained the characteristics of risk propensity and openness to new experiences are exhibited in those who are receptive to “gaining new experiences”, “learning new technology”, and “...not be intimidated with the uncertainty of new technology” (p. 120). The effects of COVID-19 mandated that all MWSU’s

students participate in online learning, and this created a plethora of opportunities for students to practice high levels of openness to new experiences and risk propensity. For many students, it may have felt like a seismic shift of new experiences in online learning occurred during the timeframe of this study.

MWSU already had allocated various university personnel and resources acting as built-in features supporting students' willingness to gain new experiences, learn new technology, and embrace the uncertainty of using new technology by reaching out to available university services. Those built-in features of instructor technical support, instructional support, and student technical support were all available through services offered through MWSU's OTTE offices, the business college's Online Distinction Centre offices, the I.T. department, help desks, and deskside assistance. Also, MWSU increased the rates of these support services once it was clear that forced distance learning was inescapable.

Instructors' Mindset about Openness to New Experience and Risk Propensity

All instructors were aware of the intrinsic factors of openness to new experience and risk propensity because they offered generalized comments about these factors as they discussed one of COVID-19's effects of forced distance learning, and then the return to learn plan containing three learning options. However, Professors Jones and Brown offered more exacting responses about the intrinsic factor of risk propensity. Professor Jones specifically used the term "risk taking," and Professor Brown described a student's willingness to trust the systems in place and take a chance on displaying a behavior considered taboo. Professor Jones described risk propensity as, "...They take risk on. They will take the challenge [of the course]..." Comparatively, when Professor Brown

discussed the idea of students turning off their cameras, she recognized that students turning off their cameras during class carries connotations as a taboo behavior, and she alluded to the intrinsic factor of risk propensity because a student trusted that the “system” would allow for that behavior, rather than generate a punitive remark from the instructor.

Finally, all the professors in the study demonstrated a clear understanding that some, if not all, of the students during the time of this study encountered many new experiences with online learning and software, and many students took risks with it they did not willfully choose. Professor Green explained all students experienced online learning during Spring 2020, and then Fall 2020, there were three learning options available, but the heaviest reliance was for online learning. He also generally thought 20 percent of students loved the experience, 20 percent hated the experience, and the rest like online learning sometimes. He also speculated that some students might suffer a bit when MWSU fully returned to standard educational practices in Fall 2021 because they were used to the freedom online learning afforded them for three semesters.

Professional Practices for Openness to New Experience and Risk Propensity

Instructors recognized that online learning and implementing new software into their courses, like the proctoring software Examity, introduced students to new experiences and learning new technology. Instructors also recognized that students managing all of their courses online was a new experience for many as well. In essence though, instructors demonstrated further awareness and empathy for students with these new experiences of online learning during this study because they accommodated and created alternate procedures for students. They recognized not all new experiences and

risks work when students try them. Instructors were willing to support students if those new experiences and risks failed. For instance, Professor Smith allowed students alternative methods of taking an exam if they were unable to successfully access and participate in using Examity. Professor Green also indicated that he assists students unable to access his ebook until they gain independence with it. Professor Brown encouraged and normalized the usage of backgrounds and turning cameras off if students needed to feel protected during such an overwhelming, relentless new experience. Professor Johnson allowed for an extended deadline on an assignment requiring students to learn and use new technology because the initial grades based on turn in rates were “abysmal.” The instructor practices were supportive of these new experiences and risks students encountered and increased student’s opportunities to SR.

Extrinsic Factors

Tabak and Nguyen’s (2013) conceptual model contains the extrinsic factors of TAM, and the model represents these factors as having antecedent effects on the Forethought phase of SRL. The TAM extrinsic factors are technical support, technical training, and equipment accessibility. Tabak and Nguyen (2013) specified online learner’s beliefs about the availability of and ease of access to technical support, technical training, and equipment accessibility on and off campus all serve as contributing factors to the students’ willingness, “...to more easily engage in task analysis, goal setting, planning, and other self-motivating mechanisms” (p. 122).

MWSU Support for Extrinsic Factors

Overall institutional support for technical support, technical training, and equipment accessibility were provided by MWSU. MWSU recognized the importance of

facilitating and supporting these factors because an expansive network of support existed for students and instructors through internal resources such as: (a) MWSU's OTTE department, (b) the business college's Online Distinction Centre, (c) the I.T. department, (d) the student helpdesk, (e) deskside support, and (f) availability of a help button within the LMS for Canvas support through a hotline, live chat, and reporting a problem.

Students and instructors were able to access many of these resources 24/7, which allowed for the facilitation and support of SR for both parties. Finally, MWSU demonstrated a high commitment to facilitating and supporting instructors with the extrinsic factors during a high crisis mode because of COVID-19 as they prepared for forced distance learning by supplying instructors with "crash" courses about putting course content on Canvas and by allowing them to purchase technology necessary for course content delivery or student usage. This step helped expand instructors' capacities for and capabilities with online learning.

Also, MWSU's OTTE support personnel discussed extrinsic factors and how instructors could modify extrinsic factors to increase SR. Kurt, Kim, and Kelly provided answers indicating their commitment to helping instructors expand their abilities in understanding the LMS along with its strengths and weaknesses, as well as providing instructors with information to help and direct students with technical training, support, and equipment accessibility. They also demonstrated a well-developed depth of knowledge about how the extrinsic factors support or deter students with SR.

Instructors' Mindsets about Extrinsic Factors

Instructors demonstrated an extensive breadth and depth of knowledge about extrinsic factors supporting or inhibiting student SR. For example, Professors Smith and

Brown focused on access to reliable internet. Professor Brown also discussed troubled technical support for proctoring software provided by MWSU. They further described modifications such as flexible deadlines and exam alternatives. Professor Smith and Brown clearly exhibited an awareness of the need for modifications of extrinsic factors to improve SRL.

Both professors' actions indicated they understood the value of and necessity for course modifications for extrinsic factors to increase SRL. This was clear when the professors described the troubles students encountered with equipment accessibility and any modifications that they made to support students with equipment accessibility issues. Professor Jeff Green also exhibits a further awareness of necessary extrinsic modifications that are American Disabilities Act (ADA) compliant for a specific subset of students in online courses. Professor Green's answer reflects his considerations for the technical support necessary for students with ADA accommodations. Although he addresses this need by transcribing his lectures, he could also address the need by turning on subtitles for his lectures and supplying the technical support for that approach to his students. Professor Green's answer also reflected his belief in student's owning their learning and increasing SR by embedding activities within the course requiring and enabling students to SR. For example, Professor Green does this by commenting about adjusting his video lectures to meet ADA compliance requirements. Professor Green's comments and actions support his knowledge and awareness of the extrinsic factors of equipment accessibility needs for ADA compliance issues. He described how students with ADA needs have equipment accessibility issues that are different from students without disabilities.

Professional Practices for Extrinsic Factors

All the instructors added, modified, and controlled a variety of support features for extrinsic factors specific to their courses. They added and modified support features such as: (a) external applications, (b) tutorials for external applications, (c) identifying and providing avenues for technical support for the external applications, (d) uploading instructions, (e) manuals and handbooks supporting the LMS and external applications, or (f) other materials connected to computing support. Generally, the courses contained three types of external applications: eBook, Lock Down Browser, and Other. External applications deemed as “other” were course specific applications necessary for students to use to gain required skills for course outcomes or were specifically tied to course content. The modifications instructors implemented were external applications necessary for the course, tutorial availability for external applications, technical support for external applications, and a course introduction with explicit LMS instructions. All 20 courses contained course modifications that clearly aligned with the extrinsic factors in Tabak and Nguyen’s (2013) model. Further, those modifications did act as sources of SR support for students. For example, several of the courses contained external applications in which the instructor provided tutorials of the applications for student usage, direct links to technical support for the external applications for students and course introductions with specific directions for the LMS.

TAM Factors: PEU, PU, and Attitude Toward Online Learning System

Tabak and Nguyen’s (2013) conceptual model contains the TAM factors of PEU, PU, and a student’s attitude toward the LMS. The model represents these factors as having antecedent effects on the Performance phase of SRL. Davis’ (1989) definitions of

PEU and PU reveals how the Performance phase for online students could be impacted if an online student perceives the LMS to be useful and easy to use. If an online student perceives the LMS to be useful and easy to use, then their motivation to engage in the course and perform well increases, rather than choosing to exhibit task avoidance and produce unsatisfactory work.

The role of a LMS in Tabak and Nguyen's (2013) model and its influence over SRL may be directly influenced by instructors because there are some features within the LMS they control. Instructors could directly influence the TAM factors of PEU, PU, and a student's attitude toward the LMS by modifying course design and implementing easy to access and easy to use learning processes which effectively facilitates and increases student SR.

MWSU's Support for Course Design and Learning Processes

Focus group members considered their role in aiding instructors with course design and developing coherent learning processes a high priority. Kurt, Kim, Kelly, and Dr. Kerns all indicated their varied roles in supporting MWSU's instructors in these areas were a means to success for both the instructors and students. Their department exhibited an acute focus in supporting instructors this way because Kelly stated they offered, "...webinars, video tutorials, "Preparing Online Instructors" [PD courses], and weekly emails that go out to faculty. It has support materials related to teaching and technology. And of course, those all end with 'if you have more questions call us.'" Finally, Kurt, Kim, and Kelly were keenly aware of guiding and supporting instructors with course design and learning processes because all three offered various examples, experiences,

and relevant insight they offered instructors as a means to help their online courses improve.

Instructors' Mindset about Course Design and Learning Processes

MWSU's instructors were mindful of implementing easy to access and easy to use learning processes and modified their course designs when necessary to increase student capacities for SRL. Four instructors expressed they modified course design features in the LMS. Professors Smith, Green, Johnson, and Brown acknowledged their intentional enablement and usage of specific course navigation menu items as a means to focus student learning efforts and attention. Also, all the instructors' methods for their course design choices within the LMS were primarily based on organization of course content. They organized their online course content by creating weekly or unit modules and released content and materials with timers or in a manner that allowed students to take charge of their learning when appropriate and complete assignments well in advance of due dates. Professor Smith offered his students explicit instructions about how to use course assignments as material for exam preparation. Professors Jones, Johnson, Green and Smith stated they offered students opportunities to interact with them in a variety of ways about exam questions or other learning processes so they could clarify any confusion or help them improve future academic performance.

Professional Practices for Course Design and Learning Processes

Instructors in this study used various course design features that acted as sources of SRL support for students. For instance, 18 of the 20 courses contained a course introduction video that specifically provided students with some type of an instructor guided tour of the course layout in Canvas, along with important instructor insights about

course pacing, student participation, course content, and other significant information. Also, all 20 courses used course signposts to guide students with the actions they should take or the path they should follow each week, each unit, or with specific assignments.

Often, instructors supported learning processes in order to increase SRL through explicit comments or communication through course documents, announcements, course discussion posts, or other various means. Instructors provided students with clear, direct verbal comments about assignment expectations, planning, and goal setting, so that students understood how to adjust themselves and succeed. Professor Brown aided students in the Forethought phase of SRL for an assignment by offering an extensive checklist students could use before turning in their final draft to enable students to meet assignment outcomes. Her checklist stated, “Contained in this file are checklists for the various sections of the paper...they seek to help you ensure that you have done everything you ‘should’ do in a particular part of the paper. You are wise to consult these rubrics multiple times during the writing process...” Professor Brown created this learning process that acted as a specific means to support and increase student SR. Professor Jones aided students in the Performance phase of SRL by using explicit remarks that set the stage for expected student performance. In assignment directions, he stated

This course contains four assigned topics in the content sections on this site. Each topic has literature provided to get you started. Each section will have reading instructions as to what is pertinent to each section’s topic. Topic response paper assignments are worth 200 points, and the last section, Contingency Planning, is an activity rather than a written paper. The literature in this section that I have provided you is a start. As a graduate student, I expect you to do independent

research of all available literature beyond what I have provided to thoroughly respond to the papers. Utilize the [library] in search of academic articles on the topics. (Professor Jones)

Lastly, all instructors facilitated the Self-Reflection phase of SRL through opportunities for feedback. Instructors supported this phase by providing students opportunities to review prior academic performance to improve future performance. Instructors provided students with direct or indirect opportunities to examine or review past academic performance and consider if they will repeat or improve their performance by studying and reading more. Students gained opportunities to decide if they were satisfied with their first performance or wanted to improve their performance. Professors Brown, Johnson, Smith, and Jones encouraged and allowed students opportunities to review prior exams. For example, Professor Smith posted a course announcement to his Spring 2021 course notifying students that the exam was available for review during a specified time frame. These opportunities assisted students in meeting one or more self-reflection attributes of SR: 1. learn from their mistakes; 2. satisfaction with their performance; 3. repeat their performance; or 4. improve their performance.

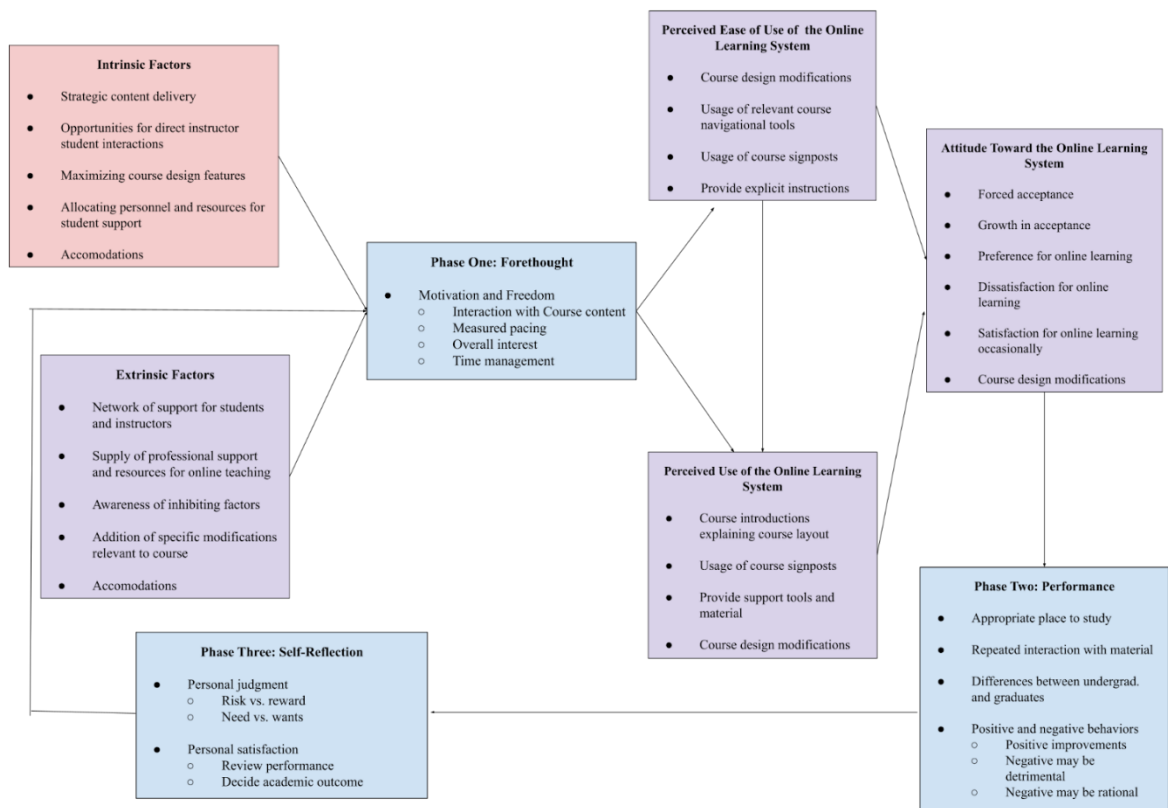
Summary

Through the lens of Tabak and Nguyen's (2013) conceptual model, Chapter Five explained data collected from a variety of sources including course observations, instructor interviews, course documents and artifacts, university website information, and university publications. Figure 7 illustrates the categorization of the instructors' professional practices, professional perspectives, and varied meanings of SR within the

model for self-regulation in online learning environments. Chapter Six will offer findings, conclusions, implications, and recommendations.

Figure 7

Analysis of Data Collected Through Lens of Self-Regulation in Online Learning Environments



Red = FFP components; Blue = SRL components; Purple = TAM components

CHAPTER VI

FINDINGS, CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS

This case study provided a narrative description of how selected instructors of successful online courses at Midwestern State University (MWSU) understood and facilitated self-regulated learning in their online courses. Data sources included observations, interviews, course documents and artifacts, university website information, and university publications. The case was explained through the lens of Tabak and Nguyen's (2013) model of self-regulated learning in an online environment, which includes three cyclical phases of self-regulated learning (SRL) and dynamic, mitigating factors influencing two of the cyclical phases. This study took place during the COVID-19 pandemic. In this context, all the instructors taught multiple online courses, and many of the online courses contained large enrollment numbers. During these changing circumstances, instructors demonstrated a dedicated and passionate attentiveness to SRL.

Research Question One: How do instructors understand self-regulated learning?

Forethought: Motivation and Task Analysis

SRL researchers attributed motivation and task analysis as prominent behavioral characteristics of the Forethought phase of SRL (Zimmerman & Bandura 1994; Zimmerman 2002; Zimmerman & Shunk 2012). During the Forethought phase, students

consider and form strategies and goals that fit their learning, decide their interest level and the value of the task, contemplate their expectations about the time and effort needed to complete the task successfully, and how to reach all these outcomes (Tabak and Nguyen, 2013). The findings in this study illustrate that instructor perspectives about SRL align with Forethought phase attributes. For example, instructors provided behavioral descriptors such as interaction with course content, time management, overall course interest, and measured content pacing. However, the most distinguished descriptor professors used that directly aligned with the Forethought phase was “motivation.” All the instructors suggested student motivation as a behavioral characteristic of self-regulation (SR). Professor Jones specifically stated, “to me self-regulation and motivation go hand in hand.” Professor Green further substantiated motivation as a distinguished attribute when he described a student’s motive for being at college being rooted in a “natural curiosity for learning.” This finding affirms that instructors were cognizant of motivation as a primary factor of the Forethought phase.

Moreover, professors in this study also demonstrated their understanding of SRL when they described another prominent behavioral attribute aligned with the theory, freedom. For example, instructors asserted students were afforded freedom to: (a) decide when to complete or not complete assignments, (b) how to regulate their consumption of course materials and lecture videos, (c) set task goals to meet assignment deadlines, and (d) use planning strategies to meet assignment requirements and deadlines. An additional area of freedom for online students was described by Professor Brown, who allowed students the freedom to choose when to turn their cameras on and off and/or have their backgrounds blurred. The freedom to choose when to turn cameras on and off is not

necessarily correlated to Tabak and Nguyen's (2013) SRL components, but it is a form of SRL that appears to be unintended and unanticipated because of the effects of COVID-19 during this study. Overall, the SRL descriptor of freedom is aligned with Tabak and Nguyen's (2013) SRL components because it suggests that students use their freedom as part of a task analysis strategy.

Performance: Self-Control and Self-Observation

SRL researchers attributed Self-Control and Self-Observation as prominent behavioral characteristics of the Performance phase of SRL (Zimmerman & Bandura 1994; Zimmerman 2002; Zimmerman & Shunk 2011). Tabak and Nguyen (2013) described the Performance phase of SRL as "...learners focus[ing] attention to the task and engag[ing] in self-instruction and self-observation of their progress" (p. 118). Instructors' understanding of SRL are aligned with the Performance phase, and instructors described this phase based on: (a) comparative behavioral descriptions of differences between undergraduate and graduate students, (b) positive and negative behaviors, repeated interaction with course material, and (c) students studying in a manner that ensures students are getting the best they can from the course materials. For instance, both Professors Jones and Green specifically attributed the differences between undergraduate and graduate student SRL behaviors to the age and experience of students. Instructors also described SRL behavioral differences as: (a) undergraduates needing added course and content structures to focus attention; (b) undergraduates demonstrating a propensity to binge watch or multitask while watching video lectures; and (c) graduates exhibiting higher capacities with consuming course materials and pacing their progress better. Finally, all instructors acknowledged that generally, students seemed to be better

at SRL as compared to pre-pandemic learning conditions. On the other hand, some instructors noted that some students demonstrated negative SRL behaviors such as: (a) lack of attendance and turning in work, (b) task avoidance and procrastination, and (c) lack of motivation or schedule. Although instructors used comparative behavior descriptions to explain performance aspects of Phase Two, their descriptions aligned with this phase.

Self-Reflection: Self-Judgement and Self-Reaction

Zimmerman (2002) characterized Self-Judgement as a comparison of a self-observed performance to a prior performance or an ideal standard, and it also involves conclusions “about the cause of one’s errors or successes” (p. 68). Tabak and Nguyen (2013) stated Self-Reflection is “...where learners evaluate and make causal attributions about their performance and...[determine their] satisfaction with their performance” (p. 118). Findings in this study indicate that although instructors did not make any explicit remarks about the Self-Reflection phase, per se, they supported and facilitated this phase by providing students opportunities to review prior academic performance to improve future performance. For instance, instructors provided students with opportunities to examine or review past academic performance and consider if they will repeat or improve their performance. Professors Brown, Johnson, Smith, and Jones encouraged and allowed students opportunities to review prior exams. These opportunities assisted students in meeting one or more self-reflection attributes of SRL.

Research Question Two: How do instructors modify course design to increase self-regulated learning?

Student adoption and usage of technology is a key component for student success in an online course. Liu et al. (2010) study verified that when online students are highly satisfied with online course design and their abilities to easily interface with the course because it is designed to be user friendly, students will have stronger feelings about the perceived usefulness and perceived ease of use of the system. In other words, course design and a user's ability to easily navigate the course and the learning management system have determinant effects on user perceptions and intentions to use the system.

Course Design Modifications Supporting SRL

This study revealed instructors made course design modifications for three major reasons: (a) internet and weather disruptions; (b) content delivery improvements; (c) preventative maintenance. Simply, instructors made course modifications as necessary to aid student learning and to increase SRL. For instance, Professor Green made content delivery improvements by organizing online course content using weekly or unit modules containing course reading material, lectures, lecture notes, or other relevant content so information would not get so “lost.” Additionally, Professor Brown organized content in modules for congruency because if, “...that is what [students] are used to doing, they can go there and see everything that is due in any given week.” Focus group members assisted and supported instructors in creating a concrete, coherent organizational system to facilitate a student’s abilities to efficiently manage the course work as well. In essence, all these facets allowed each professor to intentionally design their course by creating systems addressing student issues or needs that essentially influenced students’ perceived ease of use, perceived use, and attitude towards the learning management system (LMS).

Course Design Features Supporting SRL

This study also revealed course design features available in the LMS supported SRL if the course design features were implemented. Instructors used various course settings in the LMS to regulate the content and pacing of the course by setting release dates and end dates. Additionally, all the courses contained course navigation menu links, and instructors used these links in a variety of ways. Some instructors did not adjust the navigation menu links and merely allowed the preset menu links by Canvas to exist. Students would discover whether or not content existed for each link by clicking on it. However, Professors Smith, Green, and Johnson intentionally enabled specific buttons on the course navigation bar. This approach was a very specific, effective way to support and increase student SRL. This course of action taken by instructors is a clear instance of instructors intentionally modifying course design features available in the LMS that correlate to influencing students' perceived ease of use, perceived use, and attitude towards the LMS.

Research Question Three: How do instructors modify student learning factors to increase self-regulated learning?

Instructors' purposeful facilitation and manipulation of various factors contained in an online learning environment (OLE) can affect learners' achievement, engagement, and retention in an OLE (Oncu & Cakir, 2011; Keengwe & Kidd, 2010). Tabak and Nguyen (2013) specified online learner's beliefs about the availability of and ease of access to technical support, technical training, and equipment accessibility on and off campus all serve as contributing factors to the students' willingness, "...to more easily engage in task analysis, goal setting, planning, and other self-motivating mechanisms" (p. 122).

Modifications for Intrinsic Factors

This study reflects instructors used a myriad of instructional practices and strategies exemplifying support for and facilitation of the intrinsic factors identified in Tabak and Nguyen's (2013) model. Instructors were strategic with their content delivery which could activate a student's conscientiousness and general self-efficacy. Instructors accomplished this through intentional usage of specific internal functions within the LMS. For instance, Professors Smith, Green, Brown, Johnson, and Jones strategically used the LMS by posting assignments and exam reminders, using the course calendar function, and posting course comments offering assignment feedback, clarification, and further instructions. Instructors also recognized that students managing all their courses online was a new experience for many. Instructors' mindful awareness of this new experience demonstrated their understanding of supporting and facilitating students' openness to new experiences and risk propensities because they accommodated and created alternate procedures for students if students tried to accomplish a task in the LMS and it did not work. Modifications made by instructors were supportive of these new experiences and risks students encountered and increased student's opportunities for SRL. For instance, Professor Smith allowed students alternative methods of taking an exam if they were unable to successfully access and participate in the online test proctoring software. Professor Green also indicated he assisted students who were unable to access the course ebook. Professor Brown encouraged and normalized the usage of backgrounds and turning cameras off if students needed to feel protected during such an overwhelming, relentless new experience. Professor Johnson allowed for an extended deadline on an assignment requiring students to learn and use new technology. These

actions taken by instructors are clear instances of instructors intentionally modifying learning factors that correlate to student intrinsic factors in Tabak and Nguyen's conceptual model.

Modifications for Extrinsic Factors: MWSU

The findings in this study indicated that MWSU's administrators recognized the importance of institutional support for facilitating extrinsic factors because of their expansive network of internal resources available for students and instructors. Also, leaders at MWSU demonstrated a high commitment to facilitating and supporting instructors with the extrinsic factors during COVID-19 because they supplied instructors with "crash" courses about Canvas and allowed instructors to purchase necessary technology. MWSU's Office of Technology and Teaching Excellence (OTTE) support personnel indicated their commitment to helping instructors expand their abilities to understand the LMS, as well as provided instructors with information to help direct students with technical training, support, and equipment accessibility.

Modifications for Extrinsic Factors: Instructors

The findings in this study reflect instructors' use of a myriad of instructional practices and strategies exemplifying support and facilitation of the extrinsic factors: technical support, technical training, and equipment accessibility. Instructors demonstrated an extensive breadth and depth of knowledge about extrinsic factors supporting student SRL. The courses contained different types of external course specific applications necessary for students to use to gain required skills. The modifications instructors implemented included the following: tutorial availability for external applications, technical support for external applications, handbooks and manuals for

external applications, and a course introduction with explicit LMS instructions. All the instructors added, modified, and controlled a variety of support features for extrinsic factors along with necessary materials for students connected to computing support. These modifications acted as sources of SRL support for students. These approaches were very specific, effective ways to support and increase student SRL.

Modifications for Additional Factors

The findings in this study also reflect instructors used instructional practices and strategies exemplifying support and facilitation of additional extrinsic factors like American Disabilities Act (ADA) requirements and language barriers. For instance, Professor Green discussed ADA requirements. Professor Green exhibited an awareness of the necessary modifications for this specific subset of students in online courses. Professor Green also acknowledged his considerations for technical support necessary for students with ADA accommodations. He described how students with ADA needs have equipment accessibility issues that are different from students without disabilities. Although he addressed their need by transcribing his lectures, he could also address the need by turning on subtitles for his lectures and supplying the technical support for that approach to his students. Professor Green's comments and actions support his knowledge and awareness of the extrinsic factors of equipment accessibility needs for ADA compliance issues.

Additionally, Professor Jones described language barriers as another type of extrinsic factor influencing SRL. Professor Jones discussed the difficulties English Language Learners encounter while enrolled in online courses. He thought that perhaps English Language Learners are proficient enough with language to pass the Teach of

English as a Foreign Language (TOEFL) test, but they may not be proficient enough with their written and spoken communication skills to perform well with his courses. Professor Jones acknowledged an extensive need to assist these students by supplying them with modifications to help them succeed, but that these modifications were unavailable.

Research Question Four: How do instructors modify student learning processes to increase self-regulated learning?

When students examine their actual performance and receive individualized feedback, students are able “to evaluate their own performance and make judgments and causal attributions, such as little time allocated to studying, lack of an alignment between the instructor's style and the student's learning style, lack of resource availability, unfair grading, or course difficulty” (Tabak & Nguyen, 2013, p. 123).

Instructional Modifications

The data reflects instructors used instructional modification strategies exemplifying support for and facilitation of learning processes, so students were able to assess their performance more accurately and perform well. Frequently, instructors supported learning processes through explicit comments or communication through course documents and provided students with clear, direct verbal comments about assignment expectations, planning, and goal setting, so that students understood how to adjust themselves and succeed. For instance, Professor Brown offered an extensive checklist students could use before turning in a final draft thus enabling students to meet assignment outcomes. Professor Jones aided students by using explicit remarks that set the stage for expected student performance.

Instructors facilitated the learning processes, so students were able to assess their performance more accurately and perform well. For example, Professors Brown, Johnson, Smith, and Jones encouraged and allowed students opportunities to review prior exams. Professor Smith created homework assignments and students could use them as a study aid for exams. Professor Smith administered exams through the LMS, and test answers were released for student review. He encouraged students to review answers, so they had a study aid for the final exam. Also, Professor Jones created an assignment that students could practice an unlimited number of times as an exam preparation means. He used this assignment along with the Quizzes function of the LMS to facilitate an exam preparation learning process for students.

Additionally, instructors notified students about direct interaction opportunities with them, so students received valuable information about assignments, exams, or other important aspects of the course. Approximately half of the courses contained opportunities for instructor appointments and instructors used internal functions such as announcements and email to notify students about opportunities for instructor appointments and exam feedback. Over three quarters of the courses contained a discussion board FAQ page to facilitate student instructor interaction about generalized course or assignment information. All these instructional modifications aided and helped students increase their SRL because they offered students opportunities to reflect on and improve their performance.

Research Question Five: How does Tabak and Nguyen's self-regulated learning in an online environment theory explain the above research questions?

Instructional Practices

In this study, instructors initially converted their courses and continuously sustained learning in an online format over the course of three semesters. Instructors recognized that online learning and implementing new software into their courses introduced students to new experiences and learning new technology. Instructors also recognized that students managing all their courses online was a new experience for many as well. Instructors demonstrated further awareness and empathy for students with these new experiences during this study because they accommodated and created alternate procedures for students if these new experiences with technology failed. Tabak and Nguyen (2013) theory supports this approach because they posited, “when individuals are faced with new technology or experiences, those with high risk propensity...can be expected to perceive less risk and have more positive outcome expectations” (p. 121). Further, Tabak and Nguyen (2013) believed that during the Forethought stage, students with high risk propensity were more likely “to make strategic long term plans inherently involving more risk and to plan and set goals when faced with uncharted waters or new technology in online learning environments” (p. 121).

All the instructors added, modified, and controlled a variety of support features for extrinsic factors specific to their courses. The modifications instructors implemented were external applications necessary for the course, tutorial availability for external applications, technical support for external applications, and a course introduction with explicit LMS instructions. All 20 courses contained extrinsic modifications and they were sources of SRL support for students. Also, instructors in this study used various course design features that acted as sources of SRL support for students. For instance, most courses contained a course introduction video specifically providing students with a

guided tour of the course layout in Canvas, important instructor insights about course pacing, student participation, course content, and other significant information. Also, all courses used course signposts to guide students with the actions they should take or the path they should follow each week, each unit, or with specific assignments.

Tabak and Nguyen (2013) suggested, “The iterative process of self-regulated learning is crucial in calibrating students in an online learning environment” (p. 124). Instructors supported learning processes to increase SRL through an intentional usage of the LMS to create coherent learning processes for students or through explicit comments or communication through course documents, announcements, course discussion posts, or other various means. Some instructors used specific internal functions within the LMS to use a learning process available, and other instructors used a combination of the LMS along with a course assignment to create a student learning process for the course. Also, instructors provided students with clear, direct verbal comments about assignment expectations, planning, and goal setting, so that students understood how to adjust themselves and succeed. Instructors offered checklists, explicit remarks about expected student performance, and opportunities for feedback. Further, instructors provided students opportunities to review prior academic performance. Some instructors implemented additional opportunities for student and instructor interaction by including instructor appointments, exam feedback opportunities, and a FAQ Page or Course Questions Page. These opportunities allowed students to interact with the instructor to learn valuable information and further their learning experiences with assignments, exams, or other important aspects of the course. These specific instructional practices

allowed students to “calibrate” themselves with the online environment to meet expected academic outcomes, as well as improve academic performance.

Institutional Focus

Tabak and Nguyen (2013) associated high degrees of risk propensity within students to high degrees of student’s usage of technology and the LMS. They stated, “As student risk propensity increases, students will tend to view online learning technology as more controllable and manageable, leading to outcome expectations and high utility associated with the system” (p. 121). In this study, the components of intrinsic and extrinsic factors, perceived usage, perceived ease of use, and attitude towards the LMS explains how MWSU’s faculty and staff responded to an extended crisis to initiate, support, and sustain online learning and SRL for the entire university. The effects of COVID-19 mandated all MWSU students and instructors participate in online learning, and this created a wide variety of opportunities for students to utilize and exhibit all the intrinsic factors. MWSU’s university officials allocated university personnel and resources to act as built-in features supporting students and instructors' willingness to gain new experiences, learn new technology, and embrace the uncertainty of using new technology.

Tabak and Nguyen (2013) associated high degrees of risk propensity within students to high degrees of student’s usage of technology and the LMS. They stated, “As student risk propensity increases, students will tend to view online learning technology as more controllable and manageable, leading to outcome expectations and high utility associated with the system” (p. 121). Overall institutional support for the extrinsic factors of technical support, technical training, and equipment accessibility were provided by

MWSU and were available through MWSU's OTTE offices, the business college's Online Distinction Centre offices, the I.T. department, help desks, and desk-side assistance. An expansive network of support existed for students and instructors through these internal resources because MWSU's administrators recognized the importance of facilitating and supporting these factors. Students and instructors were able to access many of these resources 24/7, which allowed for the facilitation and support of SR for both parties. MWSU's OTTE support personnel demonstrated a high commitment to facilitating and supporting instructors with extrinsic factors because of COVID-19 as they prepared for forced distance learning by supplying instructors with "crash" courses for putting course content on Canvas and by allowing instructors to purchase necessary technology. These steps helped expand instructors' capacities for and capabilities with online learning.

Also, MWSU's OTTE support personnel demonstrated their commitment to helping instructors expand their abilities to utilize the LMS, as well as provide instructors with information to help and direct students with technical training, support, and equipment accessibility. Tabak and Nguyen (2013) acknowledged the availability of intra-organizational resources for technology support were critical incentives affecting users' attitudes for perceived ease of use and usefulness of the new technology and attitudes towards the LMS. MWSU's support personnel's approach facilitated both the instructors and students' perceived usage, perceived ease of use, and attitude towards the LMS. Their department exhibited an acute focus in supporting instructors with the LMS because they offered webinars, video tutorials, professional development courses, and weekly emails. Also, MWSU's OTTE support personnel considered their role in aiding instructors with

course design and developing coherent learning processes a high priority. They were keenly aware of guiding and supporting instructors with course design and learning processes. MWSU's OTTE support personnel demonstrated a well-developed depth of knowledge about how extrinsic factors, perceived usage, perceived ease of use, and attitude towards the LMS support or deter students' SRL.

Conclusions

Best online teaching practices include instructor online presence, effective assessment techniques integrating instructor to student feedback opportunities, and facilitating positive interaction and engagement strategies (Oncu & Cakir, 2011; Ogange et al., 2018). These practices allow instructors to guide and assess student learning processes in order to influence "learners' engagement, achievement, and retention in online learning environments" (Oncu, & Cakir, 2011, p. 1100).

Instructors in this study appeared to understand SRL from an organic or intuitive perspective, as opposed to a theoretical perspective in which instructors intentionally applied direct theoretical knowledge to their online courses in order to derive specific SRL results. The instructors in this study demonstrated a foreknowledge and understanding of their necessary role as a course facilitator to increase SRL. As a result, instructors worked to increase SRL through their organizational practices, cognizance and awareness of student learning obstacles and thresholds, and through their immediate and explicit verbal feedback.

Instructor modifications for student learning processes were meant to improve student learning. They were mindful of implementing easy to access and easy to use learning processes and made modifications when necessary to increase student capacities

for SRL. Instructors relied more heavily on their prior professional experiences and practices with online learning which allowed them to problem solve and generate a continuous learning experience that met course goals and objectives when they encountered disruptions requiring modifications. This was clear by reviewing each course syllabus and then comparing it to the modifications made and the course learning activities. Instructors did not rely very much on the institutional resources available as a source for modification strategies while they were in the midst of teaching and learning. Institutional resources were used more as a means for professional growth and development, rather than a resource to solve an immediate problem. Instead, instructors relied on their experience and knowledge of the LMS to problem solve. Then, in the future, they might access institutional resources to use for modifications, to problem solve, and to prepare for future classes.

Instructor modifications for student learning factors were meant to improve student learning as well. Instructors exhibited instructional practices reflecting that choices for modifications were student meant for student growth and learning. Instructors made modifications when students experienced disruptions in learning outside of their control. These modifications were meant to increase student SRL and aid students in academic achievement.

The instructors in this study were effective online educators because their prior knowledge and online teaching experiences enabled them to understand online learning and online student needs. Their prior knowledge, experience, and understanding of the LMS allowed instructors to make modifications that allowed students to increase their abilities for SRL and support students in other important ways as well. The instructors in

this study modeled effective practices and decisions for modifications that increased SRL for students in an online environment.

Implications

“[The] case study plays an important role in advancing a field’s knowledge base...Educational processes, problems, and programs can be examined to bring about understanding that in turn affect and perhaps even improve practice” (Merriam, 1998, p. 41). The context of this case is important because as new variants of COVID-19 spread, instructors and university officials may be able to learn from the observations made about teaching and learning online as students and instructors exist and function during times of unpredictable duress. This study has findings that have implications for research, theory, and practice. However, the implications are not generalizable to broad populations contexts. Transferability of some elements may exist based on similarities in context.

To Practice

This study has implications for educational practice to the discipline of self-regulated learning, online teaching, and beyond. The results of this study could provide key insights for online educators and higher education institutions to better support student self-regulation in online courses. The results may also provide educators and institutions with possible improvements in course construction, academic support, institutional support, and time and money saving measures connected to online students and online courses.

To Research

Self-regulation in online courses needs further examination. A large body of work exists discussing attributes of self-regulation in academic learning in face-to-face

contexts. It is necessary to add updated research focusing on self-regulated learning factors and processes inherent in online courses because these may enhance or inhibit student academic performance, which is especially important because universities have to rely on delivering course content in an online learning environment because of the current COVID-19 pandemic or future natural disasters. The results from this study could enhance the body of knowledge that already exists by providing a new focus on how instructors modify course design, student learning factors and processes, and how those modifications increase student self-regulation. This is especially important for university instructors and students since online instruction is now standard practice.

A mixed methods approach to the issue in this study may be useful as well. A mixed method approach could allow researchers to not only observe how teachers modify courses to increase SRL, but it could allow researchers to quantitatively measure how those modifications influence student performance. For example, researchers could focus on specific, observable teacher modifications and create a measurement tool gauging the extent to which those modifications increased student SRL.

To Theory

Tabak and Nguyen's (2013) theoretical framework was effective for use in this case study. Exploration of the five factors influencing self-regulated learning provided a strategic process for organizing and understanding phenomena in online courses at MWSU. Tabak and Nguyen's important work has provided a self-regulation model specifically for online contexts and accounts for the interaction of student learning factors and processes specifically related to online learners and their academic outcomes.

A limitation of the model is that it does not account for how high or low levels of dialogue and interaction between the student and the instructor could be an influencing factor that aids students in overcoming antecedents influencing SRL. Moore's Transactional Distance Theory (1973) could also be a useful lens to examine this issue. Moore (1973) proposes a model for Distance Learning and Teaching classified by Dimension of Distance which is referred to as Moore's Transactional Distance Theory. This lens could be useful because it accounts for the learning distance between learning and structure. This model could aid in illuminating how the gap between learning distance and learning structures influence how effective online instructors modify their course structures and course design to induce student learning or SRL.

Summary

A new precedent was set for online learning because of the outbreak of COVID-19. This study explores how effective selected instructors of successful online courses understood and facilitated self-regulated learning in their online courses during a highly complicated and complex learning environment created by COVID-19. Tabak and Nguyen's (2013) conceptual model of SRL in online learning environments was a lens to discover how instructors understood self-regulated learning, instructors modified course design to increase self-regulated learning, instructors modified student learning factors to increase self-regulated learning, and instructors modified student learning processes to increase self-regulated learning.

Chapter II reviewed literature exploring the reasons for the online learning surge, online academic performance, emerging reasons for increased online enrollments, online academic performance, and supporting self-regulated learning in online courses. Chapter

It also introduced Tabak and Nguyen's (2013) conceptual model of self-regulation in online learning environments and its components that originated from three theories: Self-Regulation Model from Bandura's Social Cognitive Theory (1991), Technology Acceptance Model (Davis, 1989), and the Five Factor Model of Personality (Barrick & Mount, 2005).

Chapter III described the qualitative case study methodology selected for this study. Data collection occurred from January 2020 to May 2021, and included interviews, observations, document review, website information, and artifact collection. Interviews were conducted with five online instructors, MWSU's OTTE director, and a focus group containing three online support personnel. I observed 20 online courses, collected documents and artifacts from the courses and the university. To make sure the "results are consistent with the data collected," I used these techniques: the investigator's position, triangulation, audit trail (Merriam 1998). Tabak and Nguyen's (2013) conceptual framework of self-regulation in online learning environments was used as a lens for data analysis. The epistemological perspective used to guide this study was constructionism, which allowed for exploring and analyzing the participants' interactions and relationship to their learning environment.

Chapter IV offered a narrative description of the setting and participants. Chapter V analyzed the data from interviews, observations, and artifacts through the lens of Tabak and Nguyen's (2013) conceptual model. This analysis included how effective online instructors modify intrinsic and extrinsic factors, student learning factors, student learning process, and course design to increase SRL.

The findings in the study revealed that a strong framework, infrastructure, and personnel support structure existed for online learning before the COVID-19 pandemic. MWSU's online instructors' mindsets, instructional skills, and professional practices were well formed. During this study, these effective instructors revealed how they modified their courses for intrinsic and extrinsic factors, perceived use, perceived ease of use, and student's attitudes towards the LMS. The instructors demonstrated a high-level commitment to supporting, facilitating, and modifying courses so that the factors influencing SRL were not overbearing factors interfering with academic achievement. Also, MWSU's faculty and staff demonstrated a high level of focus for supporting and facilitating intrinsic and extrinsic factors, perceived use, perceived ease of use, and attitudes towards the LMS too. This study presented questions about the future of online learning and teaching during unprecedented times, as well as during normal educational operations.

Chapter VI answered each research question and illustrated how Tabak and Nguyen's (2013) theory can explain how effective online teachers modify various aspects of online courses in order to increase student SRL. Chapter VI concluded with implications for practice, research, and theory in SRL in online courses.

Researcher's Comments

I chose MWSU as the site for this study because of its size, the availability of outstanding online instructors as deemed by specific standards, and the ready availability of online courses across various disciplines and classifications rather than just distance education courses. I was interested in the site because I felt it offered all the factors

necessary to produce robust data and a striking illustration of instructors' experience with SRL while teaching online courses.

I expected to learn that the phases of SRL were common knowledge and instructors were highly intentional with their course design, student learning processes, and student learning factors choices in order to increase SRL. I discovered that instructors were not as aware of all the phases of SRL based on their verbal descriptions. However, based on observing their choices for their course modifications and their explicit comments encouraging direct actions for students to take, I learned that instructors are subconsciously aware of SRL and work to facilitate higher levels of SRL in students so students are able to succeed. In other words, instructors demonstrated their deep care for student learning and well-being through their actions and choices, even if they were not able to fully describe SRL or their intentionality with increasing SRL.

Zimmerman and Schunk (2011) asserted that the self-regulation process is one in which self-regulated learners activate and maintain their thoughts, behaviors, and emotions in such a manner that they attain a targeted goal and occur in three different phases (Zimmerman & Schunk, 2011). Tabak and Nguyen's (2013) model explains self-regulated learning in an online learning environment as a continuous looping system that contains variables that act as antecedents that influence student self-regulation. These antecedents can work positively or negatively for SRL. This study revealed that instructors were the frontline responders and supporting actors for students and their interactions with the antecedents influencing their SRL. I was aware of this before I began the study because of my experiences with online teaching and learning; however, I was able to widen my perspective and understanding because of the insights instructors

revealed, or the experiences they mentioned. It was a pleasure for me to watch instructors demonstrate professionalism in their courses and exhibit a deeply held practice of helping students succeed.

As I conducted the study, although I was teaching secondary students, I also experienced many of the same challenges these instructors faced with their students. The COVID-19 pandemic exposed all teachers and students to a wide range of similar experiences. In many ways, all teachers were in the same boat of learning how to overcome and cope with unexpected and unforeseeable hurdles daily. Literally, everyone was learning online and everyone navigated uncharted waters. Although nothing was predictable, usual, or standard for online instructors, teaching, and courses during the time of this study, this study found that there are key features of online courses and SRL that embed and sustain a predictability, usualness, and standardized sense of “business as usual” for online students based on an instructor’s choices for course design, student learning factors, and student learning processes contained within a LMS.

It is important to note literature is emerging about online learning during the COVID-19 pandemic and researchers are making distinctions between online learning and crisis online learning. Although the data for this study were gathered during a crisis period, instructors acknowledged that some of their experiences were not normal educational operating procedures, but they were clear about their perspectives of SRL based on their length of experience teaching online. For example, all of the instructors had taught online for a minimum of two years before being forced to teach all their courses online because of forced social distancing requirements of COVID-19. Therefore,

it could be said that these results do have some transferability to SRL during normal educational operating procedures and crisis online learning.

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APPENDICES

APPENDIX A

Instructor Interview Questions

1. Let's discuss your background information.
 - a. What are your credentials (i.e. degrees earned, vocational background, professional background, background and training with learning management systems, and professional development in online learning)?
 - b. How long have you worked with online courses or online students?
 - c. What are the various capacities have you worked with online coursework?
 - d. Have you ever taken an online course? If so, did you bring any practices from that experience into your course?
 - e. What is your current position?
 - f. How long have you worked in this current position?
2. When you hear the term self-regulation, what does that mean to you?
3. What specific types of self-regulation behaviors have you noticed that students display in online courses?
4. Can you think of a time when a student did well with self-regulation in an online course and describe that?

5. Can you think of a time when a student did not do well with self-regulation in an online course and describe that?
6. In your opinion, what intrinsic factors in students promote self-regulation?
7. When you hear the term student learning factors, what does that mean to you?
8. In your opinion, what extrinsic factors in the learning environment can promote students' self-regulation?
9. In your opinion, what might be barriers to extrinsic factors that promote or hinder student self-regulation?
10. How do you modify course design, if any, to increase self-regulated learning?
11. When you hear the term student learning processes, what does that mean to you?
12. How do you modify student learning processes, if any, to increase self-regulated learning?
13. How could online teachers or course designers improve online courses by encouraging more self-regulation behaviors in students?
14. How does your institution support you with online teaching? In what ways?
15. Do they provide you what you need to effectively teach online?
16. Is there anything else you need to effectively teach online?

APPENDIX B

Focus Group Interview Questions

1. Let's discuss your background information.
 1. What are your credentials (i.e. degrees earned, vocational background, professional background, background and training with learning management systems, and professional development in online learning)?
 2. How long have you worked with online courses or online students?
 3. What are the various capacities have you worked with online coursework?
 4. Have you ever taken an online course? If so, did you bring any practices from that experience into your course?
 5. What is your current position?
 6. How long have you worked in this current position?
2. When you hear the term self-regulation, what does that mean to you?
3. In your opinion, what intrinsic factors in students promote self-regulation?
4. When you hear the term student learning factors, what does that mean to you?
5. In your opinion, what extrinsic factors in the learning environment can promote students' self-regulation?
6. In your opinion, what might be barriers to extrinsic factors that promote or hinder student self-regulation?
7. When you hear the term student learning processes, what does that mean to you?

8. How could online teachers or course designers improve online courses by encouraging more self-regulation behaviors in students?
9. How does your institution support you with online teaching? In what ways?

APPENDIX C

Table 5

Overall Student Body Enrollment Fall 2020

Student Body Enrollment Demographics	Total Approximations
Overall enrollment	
Student body	25,000
Undergraduates	20,400
Graduates	4,100
Female	13,000
Male	12,000
Full-Time	19,200
Part-Time	5,200
New Freshman	4,200
Transfers	2,400
All other students (Continuing, Concurrent, Readmitted)	18,000

APPENDIX D

Table 6

Online Course Profiles

Course Title	Semester	Number of Weeks	Course Characteristics			
			Division	Level	Students Enrolled	Class Meeting Type
Course A	Spring 2021	16 Weeks	Upper	3000	35	Asynchronous
Course B	Spring 2021	16 Weeks	Masters	5000	7	Synchronous: 1 day/week/Zoom
Course C	Fall 2020	16 Weeks	Upper	4000	73	Synchronous: 3 day/week/Zoom
Course D	Fall 2020	16 weeks	Upper	3000	23	Asynchronous
Course E	Fall 2020	16 weeks	Lower	1000	99	Asynchronous
Course F	Spring 2020	16 weeks	Upper	4000	41	10 weeks Synchronous/6 weeks Asynchronous
Course G	Spring 2020	16 weeks	Upper	4000	11	10 weeks Synchronous/6 weeks Asynchronous
Course H	Spring 2021	16 weeks	Lower	2000	244	Asynchronous

Course Title	Semester	Number of Weeks	Division	Level	Students Enrolled	Class Meeting Type
Course I	Spring 2021	16 weeks	Lower	2000	131	Asynchronous
Course J	Spring 2021	16 weeks	Upper	3000	34	Asynchronous
Course K	Spring 2021	16 weeks	Upper	4000	84	Asynchronous
Course L	Spring 2021	16 weeks	Upper	4000	29	Asynchronous
Course M	Spring 2021	16 weeks	Upper	4000	23	Asynchronous
Course N	Spring 2021	16 weeks	Masters	5000	5	Asynchronous
Course O	Spring 2021	16 weeks	Masters	5000	12	Asynchronous
Course P	Spring 2021	16 weeks	Masters	5000	21	Asynchronous
Course Q	Spring 2021	8 weeks	Masters	5000	21	Asynchronous
Course R	Spring 2021	16 weeks	Upper	3000	51	Asynchronous
Course S	Spring 2021	16 weeks	Upper	4000	50	Asynchronous
Course T	Fall 2020	16 weeks	Doctoral	6000	18	Asynchronous

APPENDIX E

Table 7

Interview Participants Profile Summary

Participant	Gender	Role	Department	Years of Teaching Experience		Training Type		LMS Experience	
				Higher Ed.	Online	For Online Learning	For LMS	Canvas	Other systems
Julie Brown	Female	Instructor	Political Science	4	2	On the job	Modules by OTTE, ebook training	Canvas Only	No
Joe Smith	Male	Instructor	Microbiology and Molecular Genetics	3	2	On the job	OTTE, Colleague's Help, Google	Canvas Only	No
Jeff Green	Male	Instructor	Entomology and Plant Pathology	22	18	On the job	Modules by and contact with OTTE staff	Yes	Multiple Systems

Participant	Gender	Role	Department	Higher Ed.	Online	For Online Learning	For LMS	Canvas	Other systems
Jerry Johnson	Male	Instructor	Management Science and Information Systems	20	20	On the job	Specialized	Yes	Multiple Systems
Julius Jones	Male	Instructor	Aviation and Space	9	9	On the job	Modules by and contact with OTTE staff, ebook training	Yes	Multiple Systems
Kelly	Female	Support Personnel	OTTE	1	1	On the job	Modules by OTTE, Professional Development, Self-discovery while on the job	Yes	Multiple Systems
Kim	Female	Support Personnel	OTTE	1	1	On the job	OTTE, Professional Development, Self-discovery while on the job	Yes	Multiple Systems
Kurt	Male	Support Personnel	OTTE	0	0	On the job	Professional Development, Self-discovery while on the job	Yes	Multiple Systems
Kerry	Female	Support Personnel Director	OTTE	25	unknown	On the job	Modules by OTTE, Professional Development, Self-discovery while on the job	Yes	Multiple Systems

APPENDIX F

Table 10

Course Design Features

Course Feature	Number of Courses Using the Feature
Course Introduction	18
Course Signposts	20
Course Settings Regulating Content Pacing	12
Course Navigation Menu Links Used	
Home	20
Announcements	19
Assignments	18
Discussions	16
Pages	7
Syllabus	19
Outcomes	0
Rubrics	2
Quizzes	10
Modules	19
Conferences	0
Collaborations	0
Studio	6
Files	6



CONSENT/PARTICIPANT INFORMATION FORM

Faculty Perceptions of Facilitating Self-Regulation in Online Coursework at a Public University: A Case Study

Background Information

You are invited to be in a research study of faculty perceptions of facilitating self-regulation in online courses. We ask that you read this form and ask any questions you may have before agreeing to be in the study. Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time. You can skip any questions that make you uncomfortable and can stop the interview at any time. Your decision whether or not to participate in this study will not affect your employment.

This study is being conducted by: Lynette Burchfield, under the direction of Dr. Ed Harris, Education and Human Sciences, Oklahoma State University.

Procedures

If you agree to be in this study, we would ask you to do the following things: Participate in an interview, provide examples of documents or communication that may be pertinent to the study, and allow the investigator to view any online courses taught from January 2020-May 2021 in order to observe the course.

Participation in the study involves the following time commitment: 1. a one hour interview session; 2. a brief follow up interview if necessary to clarify information.

Compensation

You will receive no payment for participating in this study.

Confidentiality

The information that you give in the study will be handled confidentially. Your information will be assigned a code number/pseudonym. The list connecting your name to this code will be kept in a locked file. When the study is completed and the data have been analyzed, this list will be destroyed. Your name will not be used in any report.

We will collect your information through online interviews (e.g. Zoom, Google Meet, Email). This information will be stored in a locked drawer with restricted access and a restricted access folder on my Google Drive. When the study is completed and the data have been analyzed, the code list linking names to study numbers will be destroyed. This is expected to occur no later than December 2020. The audio/video recording will be transcribed. The recording will be deleted after the transcription is complete and verified. This process should take approximately four months.

The research team works to ensure confidentiality to the degree permitted by technology. It is possible, although unlikely, that unauthorized individuals could gain access to your responses because you are responding online. However, your participation in this online survey involves risks similar to a person's everyday use of the internet. If you have concerns, you should consult the video conferencing provider privacy policy at <https://support.google.com/a/answer/9822731> or <https://zoom.us/docs/en-us/schools-privacy-statement.html>.

Contacts and Questions

The Institutional Review Board (IRB) for the protection of human research participants at Oklahoma State University has reviewed and approved this study. If you have questions about the research study itself, please contact the Principal Investigator at xxxxxxxxxxxxxxx. If you have questions about your rights as a research volunteer or would simply like to speak with someone other than the research team about concerns regarding this study, please contact the IRB at (405) 744-3377 or irb@okstate.edu. All reports or correspondence will be kept confidential.

Statement of Consent

I have read the above information. I have had the opportunity to ask questions and have my questions answered. I consent to participate in the study.

Indicate Yes or No:

I give consent to be audiotaped during this study.
 Yes No

I give consent to be videotaped during this study:
 Yes No

I give consent for my identity to be revealed in written materials resulting from this study:
 Yes No

I give consent for my data to be used in future research studies:
 Yes No

I give consent to be contacted for follow-up in this study or future similar studies:
 Yes No

Signature: _____ Date: _____

Signature of Investigator: _____ Date: _____



CONSENT/PARTICIPANT INFORMATION FORM

Faculty Perceptions of Facilitating Self-Regulation in Online Coursework at a Public University: A Case Study

Background Information

You are invited to be in a research study of faculty perceptions of facilitating self-regulation in online courses. We ask that you read this form and ask any questions you may have before agreeing to be in the study. Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time. You can skip any questions that make you uncomfortable and can stop the interview at any time. Your decision whether or not to participate in this study will not affect your employment.

This study is being conducted by: Lynette Burchfield, under the direction of Dr. Ed Harris, Education and Human Sciences, Oklahoma State University.

Procedures

If you agree to be in this study, we would ask you to do the following things: Participate in a focus group interview and provide examples of documents that may be pertinent to the study for any online courses taught from January 2020-May 2021.

Participation in the study involves the following time commitment: 1. a one hour interview session; 2. a brief follow up interview if necessary to clarify information.

Compensation

You will receive no payment for participating in this study.

Confidentiality

The information that you give in the study will be handled confidentially. Your information will be assigned a code number/pseudonym. The list connecting your name to this code will be kept in a locked file. When the study is completed and the data have been analyzed, this list will be destroyed. Your name will not be used in any report.

We will collect your information through online interviews (e.g. Zoom, Google Meet, Email). This information will be stored in a locked drawer with restricted access and a restricted access folder on my Google Drive. When the study is completed and the data have been analyzed, the code list linking names to study numbers will be destroyed. This is expected to occur no later than December 2020. The audio/video recording will be transcribed. The recording will be deleted after the transcription is complete and verified. This process should take approximately four months.

The research team works to ensure confidentiality to the degree permitted by technology. It is possible, although unlikely, that unauthorized individuals could gain access to your responses because you are responding online. However, your participation in this online survey involves risks similar to a person's everyday use of the internet. If you have concerns, you should consult the video conferencing provider privacy policy at <https://support.google.com/a/answer/9822731> or <https://zoom.us/docs/en-us/schools-privacy-statement.html>.

Contacts and Questions

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Indicate Yes or No:

I give consent to be audiotaped during this study.

Yes No

I give consent to be videotaped during this study:

Yes No

I give consent for my identity to be revealed in written materials resulting from this study:

Yes No

I give consent for my data to be used in future research studies:

Yes No

I give consent to be contacted for follow-up in this study or future similar studies:

Yes No

Signature: _____ Date: _____

Signature of Investigator: _____ Date: _____

Oklahoma State University Institutional Review Board

Date: Thursday, April 12, 2018
IRB Application No ED17116
Proposal Title: A Qualitative Study on Self-Regulation in Online Coursework for Higher Education
Reviewed and Exempt
Processed as:

Status Recommended by Reviewer(s): Approved Protocol Expires: 4/11/2021

Principal Investigator(s):

Lynette Burchfield Edward Harris
308 Willard
Stillwater, OK 74078 Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

- 1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,
Hugh Crethar, Chair
Institutional Review Board

VITA

Lynette Burchfield

Candidate for the Degree of

Doctor of Education

Dissertation: FACULTY PERCEPTIONS OF FACILITATING SELF-REGULATION
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Completed the requirements for the Doctor of Education in School
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