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CORRELATING FORMATIVE SELF-ASSESSMENT OF EDUCATION GRADUATE ONLINE PROGRAMS

by

Rebecca Spady

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ABSTRACT

As we become more advanced technologically in our online educational courses, it is imperative that we also incorporate effective research-based practices such as the use of formative assessment. The purpose of this study was to examine the relationship of formative self-assessment to academic achievement and self-efficacy in online graduate courses. The research included a review of online education, formative assessment, self-efficacy, and associated learning theories.

A mixed methods study was used that included quantitative and qualitative data for triangulation of the study results. A correlational research design was used for the quantitative approach and a phenomenological research design was used for the qualitative approach. The correlational research design was chosen to examine the relationships between variables and to describe the current state. The phenomenological research design was chosen because the study was focused on the relationship of a particular phenomenon to the participant's cognitive and dispositional experiences. The subjects included students that were enrolled in Master's in Education or Doctor of Education courses from three universities located in Southern California. The methodology included student self-assessment through a project rubric, a survey to operationalize academic achievement, and a survey and interviews to operationalize student self-efficacy. While the statistical findings did not reflect strong correlations, the non-statistical findings reflected a positive relationship between formative self-assessment as it related to academic achievement and student self-efficacy in online graduate programs. Formative self-assessment provides online educators with a tool to enhance the course effectiveness and the overall learning process.

Key words: Self-efficacy, achievement, and formative self-assessment

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CHAPTER 1: INTRODUCTION

Formative self-assessment has potential educational benefits, whether in a traditional classroom or an online course. According to McMillan and Hearn (2008), "Student self-assessment stands alone in its promise of improved student motivation and engagement, and learning" (p. 40). They go on to state that student self-assessment accomplishes the goals of higher achievement and improved self-efficacy. Instrumental in the study of formative assessment, Black and Wiliam (1998) state that there is substantial evidence that appropriate formative assessment activities relate positively to student motivation and achievement. Additionally, Lally and Wallington (2002) reported in the *The Times Educational Supplement* that "there is growing evidence from research in [e-learning] that certain strategies… will enhance teaching and learning just as certain tactics and strategies do work in face-to-face pedagogy" (p. 23). Pappas (2015) notes in his article, "Formative Assessment In eLearning: What eLearning Professionals Should Know," that "Formative Assessment… focuses on what still needs to be learned instead of what learners should already have mastered. This gives the learner enough time to improve and acquire the necessary information and skill sets during the eLearning course" (p. 1). For higher education courses, it is important to provide opportunities for critical thinking, which is also a benefit provided by formative assessment.

Formative self-assessment involves the capacity to monitor, evaluate, and know what to do to improve performance. According to Stiggins (2013), "When students become involved in the self-assessment process during their learning and they have the opportunity to watch themselves ascending to ever-higher levels of proficiency, their confidence, motivation, engagement, and achievement skyrocket" (p. 6). When conducted properly, formative assessment provides the students with timely feedback that allows the student to evaluate the

status of their achievement in relation to the learning target and then make the necessary adjustment to reach those goals. Stiggins (2013) also states that "Delivering assessment results to intended users in a timely and understandable manner while they are learning helps them stay on track and so improves that learning" (p. 7). This involves critical thinking. Formative assessment involves many methods, but for the purpose of this study, the focus was on formative self-assessment. Students construct meaning, in part, by self-assessing prior to and during learning. Students must connect new knowledge, understandings, and skills with what they have already stored and used.

The theory that provides a framework for formative self-assessment is the metacognition theory. According to Livingston (2003), "The metacognition theory refers to higher order thinking that involves active control over the cognitive processes engaged in learning" (p. 1). "Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task" (p. 1). Metacognition involves the capacity to monitor, evaluate, and know what to do to improve performance. Self-assessment plays a significant role in developing self-perceptions that lead to greater motivation and self-efficacy. Beliefs about one's competence to successfully perform a task can affect motivation, interest, and achievement.

Statement of the Problem

The importance of incorporating formative assessment has been reported as an effective research-based practice for years. Ratzel (2011) states that "Teachers who master the use of formative assessment and feedback will know they are making a difference, and students will understand what they must do to be successful" (p. 3).

Online education allows students to reach their educational goals during times that fit in their schedules. According to the Online Learning Consortium (2016), "The number of students taking online courses grew to 5.8 million nationally, continuing a growth trend that has been consistent for 13 years. More than a quarter of higher education students (28 percent) are enrolled in least one online course" (para. 4). However, as there has been a steady increase in the number of online courses being offered, online educators should be learning from and incorporating effective research-based practices into their courses as well, whether from traditional or online courses. Formative assessment allows teachers to provide timely feedback to students and to adjust teaching and learning to improve students' achievement of academic goals. According to The National Council of Teachers of English (2013), "Formative assessment is the lived, daily embodiment of a teacher's desire to refine practice based on a keener understanding of current levels of student performance" (para. 2).

Self-assessment, as an element of formative assessment, has been essential in increasing academic achievement and self-efficacy in the traditional classroom that can also be applied to online courses in higher education. Self-assessment is a teaching strategy that leads to critical thinking, which is part of 21st century learning. Students monitor and evaluate the quality of their thinking and identify strategies that improve their ability to reach their academic goals. As online education continues to grow, so does the need for valid and reliable assessments that effectively measure critical thinking and transfer of knowledge. Even with the advancements in the technology used to support the online learning environment, we are limited in our ability to effectively assess higher-order thinking through complex assignments. However, the benefits of formative assessment are evident and as part of formative assessment, students conduct self-assessments that allow them to take an active role in their learning.

Purpose of the Study

This study informs educators about the efficiency of self-assessment in formative assessment in higher education. Professors of online higher education courses should consider utilizing effective strategies that have the potential to increase student academic achievement and student self-efficacy.

It is essential that twenty-first century education courses require increased critical thinking skills and creativity. According to The Partnership for 21st Century Skills (2007), "Formative assessments, along with summative assessments should be part of any school or districts' overall assessment strategy because they are integrally tied to teaching and learning" (p. 2). Partnership researchers believe that effective formative assessments can enhance student achievement. Additionally, The Partnership for 21st Century Skills states "Successful formative assessments help educators determine their students' current knowledge, understandings, misconceptions, and thinking processes" (p. 5). Furthermore, self-assessment, which is an element of formative assessment, provides the students the opportunity to develop critical thinking skills by evaluating their progress and determining the next steps to reach their academic achievement goals in higher education. Therefore, the purpose of this study is to determine the relationship of formative assessment to academic achievement and self-efficacy in online higher education courses.

Research Questions and Hypotheses

1. What is the relationship of formative self-assessment to assignments in online graduate education courses?

2. What is the relationship of formative self-assessment to projects in online graduate education courses?

3. What is the relationship of formative self-assessment to student self-efficacy in online graduate education courses?

Null hypothesis 1. There is no relationship between formative self-assessment to assignments in online graduate education courses.

Null hypothesis 2. There is no relationship between formative self-assessment to projects in online graduate education courses.

Null hypothesis 3. There is no relationship between formative self-assessment to student self-efficacy in online graduate education courses.

Theoretical Framework

Students learn from their reflections, learning outcomes, and determining next steps to reach their academic goals, which supports their critical thinking. This impacts their ability to achieve the goals and their belief in their ability to reach the learning outcomes. Formative self-assessment provides the tool for educators to facilitate an effective learning process where students critically think about their learning progress. As students make progress towards reaching their learning targets and academic achievement increases, student beliefs in their academic abilities increase as well.

Bandura's theory of self-efficacy notes a direct correlation between how a person views himself or herself and his or her ability to accomplish a task. How a person perceives himself or herself directly impacts how a person will approach a task. As a student is successful, his or her self-efficacy increases. Perceived self-efficacy affects an individual in all aspects of life, including educational experiences. Beliefs about one's competence to successfully perform a task can affect motivation, interest, and academic achievement.

Significance of the Study

This study will contribute to the knowledge about formative assessment as it positively relates to student academic achievement in online graduate courses, and provide opportunity for professional development for educators. One of the main goals of education is supporting students to achieve academically and reach their education goals. Formative assessment can be an effective tool to increase academic achievement and self-efficacy in students. This study supports the use of formative assessment in not only online higher education courses, but in all courses. Formative assessment provides opportunities for reflection by both the student and professor and the determination of next steps in the educational process.

Ideally, students will be positively impacted from this study if educators in higher education are exposed to the results of this study and choose to incorporate formative assessment into their courses. Students will have support in their academic endeavors by receiving timely feedback in order for them to evaluate where they are academically, and to determine their plan to reach the academic targets that have been presented. This allows students to critically think about their progress and the ability to achieve the student learning objectives. As students see their progress, their self-efficacy is increased as they continue to gain confidence in their abilities to reach their academic goals.

This study provides an opportunity for professional development for the researcher as well as other educators, as it supports the importance of incorporating formative assessment into both online education courses and traditional courses in higher education. Formative assessment takes additional time in preparation and execution within the learning process, but formative assessment provides an effective tool to increase student academic achievement and self-efficacy. There are many forms of formative assessment, but this study focuses on the use of

student self-assessment. The additional time taken to incorporate formative assessment is minimal compared to the potential benefits of helping students to successfully reach their learning targets. Through formative assessment, both educators and students have clear learning targets and a clear path to achievement.

The Researcher

The researcher is able to contribute to the writing of this study as she is a professor of online Master's in Education courses. She helped to develop the online courses offered in the MA program at her university. She received her credential in elementary education and a Master of Arts in Education, and soon after began teaching MA courses online as well as traditionally in a brick and mortar classroom. She has taught online courses for over six years. One of the courses that she teaches focuses on assessment and, within that course, the effectiveness of formative assessment. As online education continues to grow, the researcher sees the importance of incorporating formative assessment and student self-assessment into her courses. As an educator, she is seeking to share her knowledge through her research.

Definition of Terms

This study provides the following definition of terms to clarify understanding of the study's independent and dependent variables. Additionally, terms were also defined that related specifically to this study that are relevant to the field of education.

Formative Assessment: According to The Glossary of Education Reform (2014) "Formative assessment refers to a wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson, unit, or course" (para. 1).

Self-Assessment: Black and Wiliam (1998) state, "Self-assessment contains three elements: recognition of the desired goal, evidence about present position, and some understanding of a way to close the gap between the two" (p. 8).

Self –Efficacy: Bandura (1994) "Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (para. 1). Carey and Forsyth (2017) state "Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment" (para. 1).

Online Education: Morrison (2004) states, "The continuous assimilation of knowledge and skills by adults stimulated by synchronous and asynchronous learning events, which are authored, delivered, engaged with, supported, and administered using internet technologies" (p. 4).

Growth Mindset: Dweck's Growth Mindset (as cited by The Glossary of Education Reform, 2013) states "In a growth mindset, people believe that their most basic abilities can be developed through dedication and hard work…. This view creates a love of learning and a resilience that is essential for great accomplishment" (para. 4).

Metacognition: Awareness and analysis of one's own learning or thinking processes; thinking about thinking. Metacognition is defined in the Oxford Living Dictionaries (2017), as "Awareness and understanding of one's own thought processes" (para. 1).

Limitations

The limitations that have been identified by the researcher are based on areas that were out of the researcher's locus of control. Those limitations included accessibility to student data, the research focus on higher education only and not the K – 12 level, and the use of only three

universities, all in the Southern California area, for data collection purposes. While the researcher had access to data for her students, there was a limitation when accessing data in classes that were not being taught by the researcher. As a teacher of online MA courses who uses formative assessment, it was necessary for the researcher to be aware of and avoid bias towards the study. Additionally, by focusing the research study on higher education only, this was also a limitation as formative assessment is also impactful for all grade levels. Other limitations were conducting the study for only eight weeks as opposed to conducting a longer study and recognizing variances in the course content between universities. Finally, by only using three universities for this study, the sample size was limited. The participants were preselected as students are already enrolled in the courses, as opposed to randomly selecting participants from a larger population of universities.

Delimitations

Currently the researcher is a professor using formative self-assessment in the coursework being taught. Therefore, there is prior knowledge about the benefits of utilizing formative assessment in the online education environment as well as in traditional classrooms. Additionally, as formative assessment has been used for more than several years, there is a great deal of information on the topic in current research. Formative assessment has been proven to be a research-based best practice in traditional brick and mortar settings and further research is being conducted to support the use of formative assessment in online education courses offerings. Finally, as online education continues to grow, the necessity for research in the area of formative assessment is needed to support student learning.

Assumptions

There were assumptions made that encompassed the validity and reliability of this study. It was assumed that responses to the survey and assessment results were accurately recorded. Additionally, it was assumed that the students fully participated in the self-assessment practices as requested by their professors. It was also assumed that the data collection conducted accurately measured the variables of student academic achievement and self-efficacy. Finally, it was assumed that interpretation of the data reflected the participants' perceptions at the time of the study.

Organization of the Study

This research study has been developed in five chapters. Chapter 1 includes the background of the study, a statement of the problem, the purpose of the study, the significance of the study, information regarding the researcher, definitions of terms, a theoretical framework, research questions and hypotheses, limitations, delimitations, and assumptions of the study.

Chapter 2 includes a review of the literature including formative assessment, critical thinking, formative assessment and academic achievement, formative assessment and self-efficacy, self-assessment and academic achievement, cognitive and constructivist theories of learning and motivation, as well as self-assessment and self-efficacy.

Chapter 3 outlines the methodology used to conduct this research study, including selection of participants, instrumentation, data collection, and data analysis procedures.

Chapter 4 is a presentation of the study's results and findings that includes demographic information, research questions and hypotheses, and results of the data analyses for the three research questions.

Chapter 5 summarizes the research study, including a discussion of the findings, implications of the findings for theory and practice, recommendations for future research, and conclusions.

An activities approach logic model has been utilized for the planning and evaluation of this correlational research design. The logical model was modified from Spratt (2011). A logic model provides a frame or visual representation for thinking about the research to be conducted. The logic model includes a clear identification of the research goals, resources, activities, and outcomes for the research study (see Figure 1).

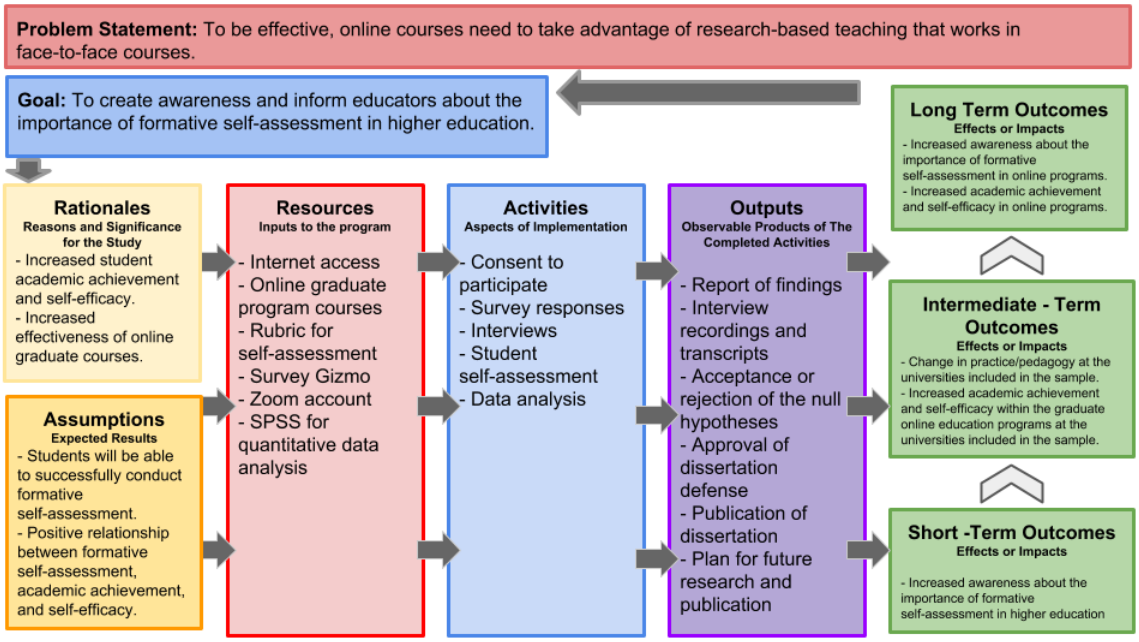

Figure 1. Activities Approach Logic Model.

Summary

As the number of online education programs and courses increases and technology advances, it is important that research-based methods are used to create effective and impactful learning experiences. The purpose of this study was to examine the relationship of formative self-assessment to academic achievement, specifically assignments and projects, as well as self-

efficacy in online graduate programs. Therefore, this research study follows a correlational research design. The subsequent chapter includes a thorough review of the research and theories related to these independent and dependent variables. Formative self-assessment provides online educators with a tool to enhance the course effectiveness and the overall learning process. The long-term outcomes of this study seek to increase awareness about the importance of formative self-assessment and the potential benefits for increased academic achievement and self-efficacy in online programs.

CHAPTER 2: REVIEW OF LITERATURE

This chapter presents the rationale for conducting research to determine the relationship between formative assessment in online education, and academic achievement and self-efficacy within the context of higher education. Formative assessment is not a new term, as the importance of incorporating formative assessment has been reported as an effective research-based practice for years. Online education provides many benefits for students that come from a variety of locations and backgrounds. Additionally, online education allows students to reach their educational goals during times that best fit their schedules. However, as there has been a steady increase in the number of online courses being offered, online educators should be learning from and incorporating effective research-based practices into their courses as well, whether from traditional or online courses. Formative assessment allows teachers to provide timely feedback to students and to adjust teaching and learning to improve students' mastery of academic goals. This study sought to build upon research conducted on the relationship of formative assessment to both academic achievement and self-efficacy to be incorporated into the online environment.

One aspect of formative assessment is formative self-assessment. Formative self-assessment provides a tool for students to utilize in order to evaluate their thinking, monitor their progress, and determine strategies to achieve their academic goals. Self-assessment has been successfully applied to the traditional classroom setting to increase academic achievement, which can also be utilized in higher education and online courses. Today's 21st century learning includes critical thinking, which can be assessed through effective measures that are valid and reliable, whether in a traditional or online classroom. Research indicates that self-assessment is a learning strategy, which promotes critical thinking in students. Students that conduct self-

assessment take an active role in their learning. As online educators reflect and refine their courses, this study shows the positive relationship of incorporating formative assessment strategies into their courses to increase student academic achievement and self-efficacy.

Online higher education needs to use strategies to increase academic achievement and self-efficacy. Twenty-first century education requires increased critical thinking skills and creativity. Formative assessment is a research-based strategy that, when incorporated, can accomplish these educational goals. Therefore, the purpose of this study was to determine the relationship of formative assessment to academic achievement and self-efficacy in online higher education courses. The following review of the literature presents the theory and research that is pertinent to this study including formative assessment, academic achievement, and self-efficacy.

Formative Assessment

As defined by Popham (2008), "Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes" (para. 17).

Chappuis (2005) outlined the components necessary for effective formative assessment to take place as follows:

- Formative assessment begins with offering students a clear picture of learning targets.
- Students receive feedback on their work to help them understand where they are with respect to the desired learning target.
- Students engage in self-assessment.
- Formative assessment provides an understanding of specific steps that students can take to improve.

As noted by Chappuis (2005), formative assessment helps students know where they are going, where they are at the point of self-assessment, and how they can effectively reach the

learning goal. Chappuis included a student self-assessment form, which is also utilized as a guide that includes opinions from the student, the teacher or peers, and an action plan. Chappuis outlined research-based best strategies to effectively implement formative self-assessment to encourage students to be active participants in reaching the learning goals and increasing academic achievement.

The application of formative self-assessment can be an overwhelming task for teachers if they have not been properly trained and supported with appropriate resources. Formative assessment can be time consuming due to the increased preparation and feedback required. However, the benefits of formative assessment are clear, and through the process, students can conduct self-assessments that allow them to take an active role in their learning. Andrade (2007) discusses the differences between self-assessment and self-evaluation, with self-assessment being formative and self-evaluation being summative. During self-assessment, students review their work as it compares to the learning goal, they reflect on their progress, and they make revisions to refine their work. To be successful, students need assessment tools that should include rubrics as well as work samples so that students understand what is meant by quality work and what learning goals are to be achieved. Additionally, Andrade (2007) notes the importance of explicitly outlining clear expectations for students so that they are not trying to reach a moving target. The author includes concrete examples with positive results and concludes by noting that self-assessment can be applied to any subject matter to reach improved learning and achievement.

In planning effective lessons that include formative assessment, educators need to begin with the end in mind. McTighe and Wiggins (2014) are known for their work in planning lessons using backward design called Understanding by Design@ (UbD). According to

McTighe and Wiggins, UbD focuses on the enduring understandings that teachers want their students to remember and build upon. Through the use of UbD, students acquire knowledge, they make meaning, and ultimately transfer their knowledge and learning effectively to new situations through authentic performance. Within UbD, there are three stages, first to identify desired results, second to determine assessment evidence, and finally to plan learning experiences and instruction.

Throughout the UbD model, understanding is addressed for which evidence of understanding includes student self-assessment and reflection. Student self-assessment is an effective assessment task to build the enduring understandings of each UbD unit and to promote independent practice and metacognition.

In a recent article by McTighe (2018), the developer of UbD notes three essential questions that educators should be asking themselves in relation to measuring learning:

1) What really matters in a contemporary education?
2) How should we assess those things that matter?
3) How might our assessment enhance learning that matters, not just measure it? (p. 14)

McTighe (2018) notes that for students to reflect transfer of knowledge abilities, performance assessments should be included as a part of the assessment process and in this, students need to be provided with a rubric that is well-developed. In the case of online learning, rubrics are essential for students to be able to measure their progress towards the achievement of the learning objectives. Performance tasks and projects can appear in many forms, but they should be authentic in nature. McTighe (2018) uses an analogy of a snapshot versus a photo album in relation to evidence of student learning. A snapshot does not provide the complete picture;

therefore, we need to be utilizing multiple measures of assessment to gain a complete understanding of what students know and are able to do. Formative assessment is an essential part of the student portfolio.

As part of the collection of assessment measures, McTighe (2018) states that we need to ask the question of ourselves as educators, "Are we currently assessing everything that matters, or only those things that are easiest to test and grade?" (p. 16) In online education, this is an important question to ask when developing online course assessments as the online environment innately creates obstacles for measuring critical thinking that must be overcome. It is important that we measure critical thinking. McTighe (2018) also notes that "Involving learners in creating the assessment portfolio builds students' capacity for self-assessment. The ability to honestly appraise one's performance against established criteria and performance standards is a life-long skill and a sign of intellectual maturity" (p. 17). Students can create authentic performance-based tasks and projects that reflect their learning and transfer of knowledge with application to new situations.

According to Andrews (2011), teachers and administrators perceive formative assessment to be valuable in evaluating student learning versus summative assessment. This qualitative case study followed an elementary school's process in implementing formative assessment into their classrooms. Results showed that professional development helped to change the perceptions of the teachers and administrators in using formative assessment to direct instruction.

Additionally, Henry (2011) conducted a mixed methods study that also supports the use of formative assessment to direct instruction. Principals in this study reported that formative assessment was more important than summative assessment in determining academic

achievement as related to curriculum and instruction. However, they tended to use summative assessment more.

Critical Thinking

Cognitive strategies, including metacognition, address our mental abilities. Flavell (1976) stated that metacognition means thinking about our thinking. According to Flavell (1979), "Metacognitive knowledge consists primarily of knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive enterprises" (p. 907). Additionally, Flavell noted that the factors or variables involve the person's belief about themselves and how they learn, the demands and goals of the task, the evaluation process during the task, and the strategies for which the person has been equipped to approach the task. Metacognition plays an important role in critical thinking and the transfer of knowledge. These must be assessed in an effective manner. Heritage (2013) notes that "Metacognition is an active process, which enables learners to make judgments and take regulative steps with respect to their own learning" (loc. 298). Therefore, formative self-assessment includes the cognitive strategy of metacognition, which is a student thinking about his or her thinking.

As online education continues to grow, so does the need for valid and reliable assessments that effectively measure critical thinking and transfer of knowledge. Research conducted by Jacobs (2014) specifically addresses the inclusion of group projects into online courses as well as formative assessments. The use of these types of research-based best practices that improve achievement and engagement in traditional classrooms also has the potential to improve achievement and engagement in online courses. Group projects provide many benefits such as increased knowledge, critical thinking, collaboration, identification of goals and

objectives, and problem solving skills. Additionally, through group projects, students feel more connected to their online classmates. Guidelines and norms need to be outlined for the students to be successful. Jacobs (2014) also states that students should be allowed to self-reflect on the group project experience to allow the online instructor to make any needed adjustments to improve the learning experience. Finally, the research notes the importance of formative assessments for learning. These types of assessments allow the instructor to check for understanding and to provide timely feedback regarding student progress. Jacobs' research concludes with a list of potential formative assessments including student self-assessment, reflection papers, the minute paper, role-playing, hook questions, and a questions wall. Formative assessments are essential to online learning for both the instructors and students to have a clear picture of student progress toward the learning goal.

According to The Foundation for Critical Thinking (2017), "Critical thinking is thinking that assesses itself. Each step in the process of thinking critically is tied to a self-reflexive step of self-assessment" (para. 2). Darling-Hammond (2014) notes the need to develop assessments that truly reflect higher-order thinking. In addition, the need to use multiple measures in order to obtain valid and reliable data that paints a clear picture of student achievement was also addressed. As part of the multi-measure approach to assessment, the inclusion of student self-assessments allows students to understand the learning targets and to work to improve their work through the use of rubrics. These types of assessments engage students and help them to become more independent learners. The article concludes by stating that as leaders, principals have an important role in facilitating the development of high-quality assessments to improve learning for all stakeholders.

Higher-order thinking has been researched and addressed by many educational leaders over the years. However, assessment of higher-order thinking requires further focus and professional development to be conducted effectively. Brookhart (2010) defines higher-order thinking as having elements of transfer, critical thinking, and problem solving. She goes on to state that student achievement will increase through the use of higher-order thinking assessments, which includes increases in achievement for all students within diverse populations. Additionally, student dispositions become more positive. Brookhart's work outlines basic assessment principles including clearly specifying the learning goal, designing tasks and test items using a blueprint to assess high-order thinking through the levels of Bloom's Taxonomy, and determining acceptable evidence of higher-order thinking. Brookhart also discusses various forms of assessment including formative measures and summative measures. Within the formative assessment measures, she addresses student self-assessment. She states that students exhibit higher-order thinking through self-assessment. However, self-assessment skills must be taught for students to achieve an understanding concerning how to make judgments about their progress and to determine plans to make improvements. Teachers need to provide students with rubrics as well as work samples for effective self-assessment to occur. Brookhart promotes the use of student self-assessments as evidence of higher-order thinking, but these skills need to be taught as well.

In focusing on higher-order thinking, Dweck (2010) discusses the importance of developing a *growth mindset.* Dweck, along with her colleagues, has conducted research regarding how students view intelligence. Those with a fixed mindset believe that they possess a finite amount of intelligence. However, those with a growth mindset believe they have an infinite amount of intelligence, which can be developed. Both mindsets are represented in

today's classrooms and we need to be aware of the variances and associated behaviors. All educational leaders and stakeholders throughout the educational system need to be taking steps to build growth mindsets in students. This includes, as Dweck states, creating a culture of risk taking, focusing on challenge rather than success, fostering an idea of progress that leads to mastery, and grading based on growth. Additionally, she encourages the use of the word "yet," to promote hope, and the word "already," to recognize that students have some understanding. Through the implementation of a growth mindset, teachers develop learning experiences that teach students to be more resilient and to reach more long-term achievement. Students are able to see their growth, they are more motivated to meet the challenges before them, and they view the learning experience as an opportunity to continue their educational growth towards mastery. According to Dyer (2016), "Formative assessment practices give us plenty of opportunity to foster both a growth mindset and metacognition in our students… both set the stage for learning. We change both the culture in our classroom as well as what learning looks like" (para. 9).

In education, as in life, we all experience difficulties that can lead to frustration and potential failure. As educators, we must also use every means possible to help our students develop positive attitudes toward success, including the use of theories and strategies that include Gardner's *Multiple Intelligence Theory* and Dweck's *Growth Mindset.* Hoerr (2012), in addition to focusing on Growth Mindset, notes that it is also important to focus on *grit*. Grit addresses a student's ability to respond to failure, which is essential in achieving success. The author recognizes that it is important for every teacher and child to believe that all students are capable of learning. However, we all experience challenges and frustration and it is important to learn to overcome obstacles and continue on the path of learning. The author mentions Duckworth, the researcher behind grit, and states that grit is a good predictor of success in any endeavor

including academics, athletics, and the arts. Hoerr and his staff are working with all stakeholders to inform them of the rationale behind grit and the importance of implementing this strategy within the culture and learning process of the school. The teachers are sharing information with their students on multiple intelligences to support the students as they recognize their strengths and apply grit to situations they encounter. Grit demonstrates the perseverance and drive to overcome difficulties, which is sometimes attributed to a growth mindset. Students who believe that they can progress will persevere until they do.

Perseverance, which is another word for grit, is essential to reach any long-term goal, including educational goals. Duckworth's research over the past 11 years has shown a positive relationship between grit and achievement. Perkins-Gough (2013) interviewed Duckworth about the significance of her research for all stakeholders and the relationship of grit and resilience. Duckworth notes that bouncing back from adversity, or resilience, is only part of what it means to possess grit. Having grit also means that someone has a deep commitment or focus over a long period of time. Grit also serves as a good predictor of success. Additionally, the interview leads to a connection between Dweck's growth mindset and Duckworth's grit. Dweck and Duckworth are working collaboratively on some projects that include an intervention to help students become aware of the benefits of practice and effort to improve skills. Students can change their reaction to frustrating situations and develop an attitude of not giving up. The interview concludes with Duckworth stating that educators are also recognizing the importance of both cognitive and noncognitive traits. While only cognitive traits are reflected in standardized tests, noncognitive traits add to the view of the whole child. They also state that character education also continues to be of value. There is a relationship between resilience and grit, which are both needed for effective self-assessment and self-regulation.

Formative Assessment and Academic Achievement

Black and Wiliam (1998) discuss the importance of interactive learning environments that include effective assessments, reflection of the assessment results, and modification of instruction accordingly. They state, after the review of the literature, that there is room for improvement of formative assessment. Ways to improve formative assessment included feedback to students, reflection on and adjustments during the learning process, and analysis of the benefits of student self-assessment. Black and Wiliam (1998) state that self-assessment is an essential element of formative assessment. In order to be successful, students need to be taught these skills as well as provided with clear learning targets so that students understand the expectations for achievement. Professional development in conducting formative assessment is also key for successful implementation to increase academic achievement.

In support of the professional development necessary, Stiggins (2018) notes that "A dynamic assessment system is achievable only if everyone involved is assessment literate" (p. 19). He goes on to provide an example that key decision makers "can differentiate among purposes of assessment; insist on and promote the collection of dependable evidence, and understand how to use assessment processes to foster students' growth and awareness of their own learning process" (Sitggins, 2018, p. 19). In order for formative assessment to be successful, educators must be literate about the different types of formative assessment and how to effectively implement the different methods available within the learning environment.

According to an article by Laud, Hirsch, Patel, and Wagner (2010), research findings note that "formative assessment is one of the most powerful methods for enhancing achievement across the disciplines" (para. 1). This should also apply not only across the disciplines, but also across grade levels and into higher education as well as online higher education. They go on to

discuss how implementation of formative assessment yields high results at little to no additional cost, as teachers and students are merely assessing as part of the learning process to reflect on student learning and inform teaching. As students reflect on their own learning, they are better able to determine the next steps toward successfully reaching the learning objectives and gaining higher academic achievement. Laud et al. (2010) identify four important steps for the use of formative assessment that include, "Identify what they need to learn, self-assess, set goals, plan for the next steps to take" (para. 4). They go on to state that, "Instead of simply receiving instruction, students can learn how to use these practices to self-direct their learning, thus maximizing their learning in future classes or other life experiences" (para. 5). Therefore, by incorporating formative assessment into classes and instructing students how to conduct self-assessment, whether in traditional or online classes, students are able to maximize their learning and continue to apply formative assessment practices throughout their education. One of the strategies that the authors discussed was utilizing model papers where students inferred traits of good writing from samples provided by their teacher. This strategy can be incorporated into online formative assessment practices by providing samples for students to refer to for self-assessment purposes.

The use of effective assessments is very important to the education process. However, assessment is far too often a consideration in the later part of the planning process. Stiggins and Chappuis (2012) provide a blueprint for developing valid and reliable assessments through multiple measures including both formative and summative assessments. They discuss learning targets and assessment methods and the alignment of the targets and methods in determining the most effective assessments to measure student academic achievement. The learning targets include knowledge, reasoning, performance skills, products, and dispositions. The assessment

methods include selected response, essay, performance assessment, and personal communication. The main focus of their book is on formative assessments, which include the use of student self-assessments. The use of self-assessments allows the student to see their growth towards the learning targets, which also increases student self-efficacy, engagement, and motivation throughout the learning process. As educators, we need to involve our students in the assessment process and the use of formative assessments or "assessments FOR learning" throughout the learning process. Stiggins and Chappuis (2012) support the use of formative assessments and student self-assessments that lead to positive improvements in teaching and learning; ultimately, yielding positive results in achievement, which is the goal.

Today's learning environments continue to change, becoming more interactive where students are active participants, who construct knowledge, and require metacognitive development. Sackstein (2015) proposes that reflection is a necessary tool that allows students to make judgments about their learning and suggests the use of action plans to reach the intended learning targets. In order to meet the needs of all students within diverse populations, we need to scaffold learning so that students can realize the enduring understandings and participate in meaningful discussions related to the topics being explored. Sackstein (2015) describes the importance of explicitly teaching and modeling reflection as well as self-assessment. Additionally, as we are working with diverse student populations, it is also important to differentiate how students reflect and self-assess. As students reflect on their progress towards the learning targets, they are able to help direct their own learning, and we can modify instruction accordingly. Sackstein (2015) also encourages the use of technology to strengthen students' skills where they have need. The author concludes by noting that teachers need to make time for reflection and self-assessment and states that mastery is determined when students

can transfer their knowledge to new situations. Sackstein's work supports the implementation of student reflection and self-assessment.

The role of assessment has always been a part of the learning process, but formative assessment has become increasingly important to include within a variety of multiple assessment measures, whether the course is taught traditionally or online. In her book, *On Formative Assessment*, Scherer (2016) pulled together several articles about formative assessment to inform educators about ways to use and reflect on assessments to increase learning. Even given the importance of assessment, Guskey (as cited in Scherer, 2016) writes that "Few teachers receive much formal training in assessment design or analysis" (p. 8). He states that to increase learning, teachers need to make assessments useful for both teachers and students. Assessments should be reflective in nature for both teachers and students; for teachers to incorporate instructional alternatives and for students to understand the next steps to take in their progress towards the learning objectives. Guskey (as cited in Scherer, 2016) notes that "Students should have a second chance to demonstrate their new level of competence and understanding. This second chance helps determine the effectiveness of the corrective instruction and offers students another opportunity to experience success in learning" (p. 12). Through second chances, students have the opportunity to reflect and learn how to improve.

Tomlinson (as cited in Scherer, 2016) outlines 10 principles for improving teaching and learning. These 10 principles for effective formative assessment include: 1) Students need to understand that formative assessment reflects growth and progress, 2) Students need learning targets that are clearly defined, 3) We need to allow for differentiation in the types of formative assessment used, 4) Feedback needs to be actionable and user-friendly, 5) Formative assessment should be conducted continually, 6) Students need to reflect on the feedback provided and

determine the next steps towards progress, 7) Teachers need to look for patterns or gaps in learning to effectively plan for instruction that should be centered on the requirements and student needs, and 8) Then we need to continually repeat this process. According to Tomlinson (as cited in Scherer, 2016), "Students need to be involved in thoughtfully examining teacher feedback, asking questions when feedback is not clear, and developing plans that specify how they will use that feedback to benefit their own academic growth" (p. 21). Formative feedback partnered with self-assessment must be understandable and actionable in order for students to determine steps toward improvement and increased growth towards the learning objectives. Wiggins (as cited in Scherer, 2016) states "Whether feedback is just there to be grasped or is provided by another person, helpful feedback is goal-referenced; tangible and transparent; actionable; user-friendly; timely; ongoing; and consistent" (p. 27). He also notes that "Research shows that less teaching plus more feedback is the key to achieving greater learning" (p. 33).

Formative assessments and high-quality feedback have become increasingly difficult to offer within the context of growing class sizes and the online learning environment. Research-based best practices show a positive relationship between student learning and the use of formative assessment and timely feedback. An example of this is an action research project that was conducted by Voelkel (2013) focusing on improving student learning in an online environment by engaging students through self-assessment and timely feedback. The independent variable consisted of two-stage online tests that included self-assessment and timely feedback with the dependent variables presented as student learning and student engagement. The participants included students in an animal physiology module that was taught through 18 lectures over the course of six weeks. Additionally, the tests were carefully designed to test for more complex cognitive skills. Finally, student dispositions towards the tests were also

evaluated through questionnaires and focus groups. The results of the study reflected significant improvement in student performance as demonstrated by an increase in student learning and engagement by receiving regular feedback provided by the two-stage online tests. Voelkel's research is important as it supports the inclusion of formative assessments in the online learning environment to improve student learning.

To further improve student learning, Frey, Fisher, and Hattie (2018) state that we need to develop "Assessment-capable learners" (p. 47). They go on to note, "Assessment-capable learners enact the deep knowledge we now possess about the significant roles that motivation, goal setting, self-regulation, and feedback play in learning" (Frey et al., 2018, p. 48). They also note that "Teachers must make space in the learning day for students to appraise their own work and examine their progress toward goals" (Frey et al., 2018, p. 49). While this would be difficult to conduct online daily, there is a benefit to planning for formative self-assessment to be conducted, which will allow students to self-regulate as they may not do so otherwise. Research has shown that formative self-assessment leads to higher academic achievement and increases dispositional variables as well. Therefore, we should be incorporating formative self-assessment into our online courses as well.

To support these statements, Frey et al. (2018) provide effect size data and note that "Self-questioning, a key part of component of self-regulation, has an effect size of 0.64, meaning it accelerates learning at a rate of nearly one and a half years of growth" (p. 48). They go on to state that:

Effective feedback from teachers to students has an effect size of 0.75, meaning that it is a robust method for spurring learning. But, if feedback is not timely, specific, understandable, and actionable, the promise of feedback will not be realized (Frey et al., 2018, p. 48).

Therefore, students need time to self-assess and to receive timely feedback from their teachers that is not just corrective, but effective within the learning process. Frey et al. (2018) report an effect size of 1.44 for self-regulation. "Students' ability to report thoughtfully on their own performance (another way of saying they are assessment capable) has an effect size of 1.44, meaning that it more than triples the speed of learning" (p. 48). To foster assessment-capable learners, the authors go on to outline parameters as reflected below.

- Students are aware of their current level of understanding
- Students understand their learning path and are confident in taking on the challenge
- Students select tools to guide their learning
- Students seek feedback and recognize that errors are opportunities to learn
- Students monitor their progress and adjust course as needed
- Students recognize their learning and teach others (pp. 48-50)

These parameters can be incorporated into the online learning process by providing opportunities for students to self-assess, by providing students with timely feedback that is formative and not just summative, and by including discussion posts that are reflective about student learning, to name a few. Research has shown that these practices positively relate to achievement in traditional classroom settings; therefore, these practices should also be incorporated into online courses.

Formative Assessment and Self-Efficacy

According to Pajares (1997), self-efficacy is a "context-specific assessment of competence to perform a specific task" (p. 15). In essence, self-efficacy beliefs are the self-perceptions that individuals hold about their capabilities. Perceived self-efficacy affects an

individual in all aspects of life, including educational experiences. Beliefs about one's competence to successfully perform a task can affect motivation, interest, and achievement.

In 1977, Albert Bandura introduced his theory of self-efficacy. According to Weibell (2011), Bandura outlined a theoretical framework "in which the concept of self-efficacy is assigned a central role, for analyzing changes achieved in fearful and avoidant behavior" (p. 193). Weibell (2011) noted Bandura's definition of an outcome expectancy as "a person's estimate that a given behavior will lead to certain outcomes" and an efficacy expectation as "the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 193). Bandura's theory set the foundation for further research into the importance of self-efficacy that can improve academic achievement.

In his article titled "Self-Efficacy," Bandura (1994) states:

> A strong sense of efficacy enhances human accomplishment and personal well-being in many ways. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities. They set themselves challenging goals and maintain strong commitment to them. They heighten and sustain their efforts in the face of failure. They quickly recover their sense of efficacy after failures or setbacks. They attribute failure to insufficient effort or deficient knowledge and skills which are acquirable. They approach threatening situations with assurance that they can exercise control over them. Such an efficacious outlook produces personal accomplishments, reduces stress, and lowers vulnerability:
>
> In contrast, people who doubt their capabilities shy away from difficult

> tasks, which they view as personal threats. They have low aspirations and weak commitment to the goals they choose to pursue. When faced with difficult tasks, they dwell on their personal deficiencies, on the obstacles they will encounter, and all kinds of adverse outcomes rather than concentrate on how to perform successfully. They slacken their efforts and give up quickly in the face of difficulties. They are slow to recover their sense of efficacy following failure or setbacks. Because they view insufficient performance as deficient aptitude it does not require much failure or them to lose faith in their capabilities. (p. 71)

In developing a strong sense of self-efficacy, students understand what it takes to be successful and they are able to understand the steps to achieve success. Using formative assessment as part of the learning process builds self-efficacy in students, which leads to improved academic achievement.

According to Ruland (2011), formative assessment has a positive relationship to student affect. A quasi-experimental study, in grades six through eight, was conducted that included a correlation between teachers who attended professional development and their use of formative assessment. Surveys were used during the study with both quantitative Likert questions and qualitative or short answer questions. A strong significant correlation was found between the independent variable of formative assessment and the dependent variable of student affect.

In effectively measuring student dispositions or knowledge, educators should consider following the *Three Moves for Assessment-System Success* as discussed by Borgioli (2018). She asserts that for assessment methods to succeed and be sustainable, there is a need for assessment alignment, a growth mindset, and student input. Borgioli (2018) notes

that “When we start to assess other outcomes, like dispositions or habits of mind, it gets complicated because of their qualitative nature” (para. 3). She suggests that students be provided with an illustration or image that depicts the disposition to be measured. This supports the definition of what is being measured and aligns assessment. As Borgioli (2018) notes, “Disciplined clarity through language or images understood by everybody can help cut through the noise to support non-negotiable priorities” (para. 9). Additionally, she suggests that rubrics be evaluated to ensure that they are measuring the desired outcomes and to consider moving from a number system ranging from 1 – 4, to a system that would include text descriptors for communication of a growth mindset and to avoid misunderstandings. Finally, she suggests the inclusion of students’ perspectives regarding assessment. As educators, we need to be open to assessments that are meaningful to our students as well. We must be intentional about assessing dispositions such as self-efficacy. Therefore, we need to develop multiple and effective assessments that include formative assessment.

Self-Assessment and Academic Achievement

As defined by McMillan and Hearn (2008), “Self-assessment is more accurately defined as a process by which students 1) monitor and evaluate the quality of their thinking and behavior when learning and 2) identify strategies that improve their understanding and skills” (p. 40).

Cognitive and Constructivist Theories of Learning and Motivation

Students construct meaning, in part, by self-assessing prior to and during learning. One study explored the impact of student self-assessment on learning. Bruce (2001) provides a list of elements that students need in order to self-assess that includes a clear target, involvement in defining quality work, timely feedback, and the ability to reflect and revise their work. During the process of defining quality work, students gained a deeper understanding of the achievement

standards and the expectations. Students received timely feedback from both their teacher and peers as well. During the course of the experiment, the teachers showed positive results, in student learning, from the implementation of student self-assessment. They also found that the use of student self-assessment also addressed the many concerns that standards-based reform brought about and that were shared by many stakeholders. These teachers were proactive in implementing the research-based strategy of student self-assessment and became teacher leaders through the process as they explored the impact on learning.

A study conducted by McGuire and Castle (2010) showed positive results from including student self-assessment in online courses. This research looked at student self-assessment of learning within an online university. The researchers focused on a statistical analysis to determine the relationship between student self-assessment of learning and the type of online learning methods used. Interestingly, the highest satisfaction scores were linked to traditional courses, then hybrid courses, and finally the lowest satisfaction scores were for online methods. The methodology included 4,038 course assessments with an average of 25 to 30 students per course. The assessments consisted of 30 questions on a four-point Likert scale. The researchers concluded by stating that we need to connect with students and look to continually upgrade online course content and materials. The research reflected students having a higher satisfaction with their traditional learning experiences versus purely online courses.

The online learning environment can take many forms, from being completely online with no face-to-face interaction, to online courses that include synchronous class meetings. Research conducted by Barber, King, and Buchanan (2015) examined the relationship between the role of the community, problem based learning, and authentic assessment. Digital stories were utilized to develop authentic learning and assessments in an online environment. Results

included the improvement of self and peer assessments, student engagement, and student motivation. Authentic assessments are essential in the traditional classroom; therefore, these types of methods should also be included in the online environment. Barber et al. (2015) used Digital Moments to create a more interactive learning community. The methodology included 35 participants over a 12-week course. Qualitative data was collected through Adobe Connect in the form of chat rooms, anecdotal notes, and recordings. The researchers noted that it is important that students are given the appropriate tools to self-assess as well as being taught the skills of self-assessment. In conclusion, they state that digital stories provided a strategy to develop authentic learning environments and assessments online. This allows for a shift in the traditional roles and students take on more of an active role in learning. This study provides important information towards the use of self-assessment in the online learning environment to develop authentic learning experiences.

Another study conducted by Admiraal, Huisman, and Van de Ven (2014) also showed a positive relationship between academic achievement and student self-assessment. Their research study explored the quality and use of self-assessments as well as peer-assessments in three Massive Open Online Courses (MOOCs) as a possible solution. Three research questions included: 1) What is the reliability of self- and peer assessment implemented in MOOCs?: 2) What is the relationship between self- and peer assessment and quizzes?: and 3) To what extent do self- and peer assessment and quizzes explain differences in students' final exam scores? The methods included 5 to 8 week courses, using multiple-choice quizzes, a final exam, and self- and peer-assessments through essays. Procedures were provided to the students as well as a rubric. Students assessed their own work as well as the work of two other students. Thousands of students were registered in the courses, but only a small percentage participated in the self- and

peer-assessments. The conclusions stated that the quality of the self- and peer-assessments was determined to be moderate.

Richardson (2010) reported on a collaborative case study regarding the implementation of formative assessment in the classroom. The study found that collaboration changed teachers' perceptions and understandings of formative assessment and the importance of including formative assessment in their classroom. Through collaboration, teachers experienced a supportive environment to discuss their experiences as they implemented formative assessment practices into their classrooms.

According to Sherbinko's (2011) holistic case study, he found that there were particular factors that promoted sustained use of formative assessment in the classroom. Influential factors included collegiality, district support, principals' commitment, and the teachers' vision related to formative assessment. Therefore, it is important that teachers are not left to implement formative assessment on their own, but in order to be sustained they must have the support of the school and district.

Formative assessment takes many forms, but self-assessment is a key element. Fisher and Frey (2018) discuss the importance of formative assessment in the form of frequent feedback and self-assessment in their article "A Map for Meaningful Learning." They report that "…teacher clarity, has an effect size of 0.75 in terms of lifting achievement" (Fisher & Frey, 2018, p. 82). Therefore, to begin, teachers and students need clear learning outcomes and criteria for success so that they can both measure progress and growth. Additionally, frequent formative feedback should be provided during the measurement of progress and growth. They state that "Formative feedback allows students to make adjustments when they're off-track and accelerate their progress as they gain momentum" (Fisher & Frey, 2018, p. 83). Students need time to

conduct formative self-assessment. Many students may not participate in self-assessment without a requirement. Self-assessment can take many forms, such as students gauging their progress against a rubric, reviewing results from a practice quiz, or reflecting on their learning. Fisher and Frey (2018) write that "It's essential to use feedback to guide students toward internalizing success criteria so they can measure their own success" (p. 83). Formative feedback and self-assessment, when both included in the formative assessment process, are a powerful combination for student success.

As teachers practice and become more proficient at using formative assessment practices, including formative self-assessment, they are able to improve student academic success. Duckor and Holmberg (2017) write that "Teachers on the path to becoming formative assessors know that by consciously enacting multiple combinations of moves—over time and with practice—they get better at doing formative assessment, and consequently at improving student learning outcomes" (loc. 5,649). A thorough understanding of formative self-assessment benefits both teachers and students.

Self-Assessment and Self-Efficacy

Self-assessment plays a significant role in developing self-perceptions that lead to greater motivation. Additionally, education is extremely data driven and teachers need solid rationales for their lesson planning and assessments. Today's students are expected to reach deeper understandings through more complex critical thinking and as a result, educators need to be using assessments that appropriately measure these learning goals. Research conducted by Logan (2015) asked 45 pre-service teachers to respond to a personal self-assessment essay where they were asked the following two questions.

1. What do you now realize about self-assessments and will you use self-assessment essays in your future classroom?

2. Why or why not?

Additional methods included completing a checklist and an interview of eight of the participants. Previously, research has shown positive correlations between self-assessments and student motivation, engagement, the ability to reflect and self-critique, and more. Self-assessments also align well with Common Core State Standards through the use of rubrics and higher-order thinking. The results from this research were consistent with others in that they stated the importance of teaching students self-assessment skills and using rubrics. The study concludes that self-assessments promote intellectual growth and the development of life-long learners.

Teaching and learning can both be improved through the use of formative assessment, including self-assessment. Formative assessment supports the student in building meaning and advancing through the levels of Bloom's taxonomy. Greenstein (2010) aligned formative assessment with the levels of Bloom's taxonomy and self-assessment was aligned with synthesizing/evaluating. If formative assessment methods are implemented throughout the learning process and at all levels of Bloom's taxonomy, the content becomes more meaningful. Through their educational experiences, students form a sense of their academic self-efficacy. Margolis and McCabe (as cited in Greenstein, 2010) state that "Formative assessment and its accompanying use of goal setting, scaffolding, positive feedback, and self-assessment can improve students' self-efficacy, thus boosting their confidence in their ability to achieve" (p. 140). Student academic achievement and their dispositions, such as self-efficacy are related. Stiggins and Popham (2008) write that since formative assessment is student centered, "Students become personally involved in monitoring and adjusting how they are attempting to learn, this achievement enhancing strategy is almost certain to have an impact on student's affect, meaning their personal perceptions and predispositions about their learning" (p. 78). Educators,

regardless of whether traditional or online, need to balance the cognitive and dispositional aspects of learning for their students.

One dispositional aspect to consider is a growth mindset. According to Dermody (2012), it is important to foster a *growth mindset* in all students so that they believe that they have the capacity to learn and reach mastery. Dermody (2012) uses a wonderful analogy of a fixed mindset represented by the amount of water held in a glass versus a growth mindset represented by water used to grow grass. According to Dermody (2012), many students within our diverse populations, lack the confidence they need to be successful. Some people even equate finances with academic achievement rather than understanding the effort that students are exhibiting. By sharing the knowledge of a growth mindset with students, they are empowered and begin to understand that effort will lead to progress. Students need to believe that they can learn and grow their intellect. The author continues by noting the importance of feedback to students and the practice of student self-assessment. She states that her students understand that the rewards will come from their efforts in the form of progress in their learning.

In order for students to conduct effective self-assessment, it is important that they have clear learning targets including rubrics. Brookhart (2013) describes and evaluates the advantages and disadvantages of various types of rubrics including analytic versus holistic rubrics, general versus task-specific rubrics, writing and performance criteria, assessing creativity, and more. There is an opportunity for educators to more closely align instruction and assessment. Within her book, she focuses a chapter on the use of rubrics to promote student self-reflection and self-assessment. Through self-assessments, students are able to monitor their work and plan for improvements. As it is important to teach self-assessment skills, Brookhart (2013) notes that to support instruction of these skills, strategies that can be used include quick-checks, journaling,

and think-pair-don't share. She also states that is it important for students to chart their progress so that they can see their growth and self-reflect by asking effective questions about their work. Ultimately, the strategic development and use of rubrics will lead to increased achievement and dispositions. Brookhart's (2013) work provides an array of resources for teachers in developing effective formative assessments including student self-reflection and self-assessment that will promote overall educational improvements.

Another proponent of formative assessment, Heritage (2013), discusses the concept of learning how to learn, which provides an overview of student reflections, self-monitoring, and self-regulation to show progress towards the learning outcomes as well as an increase in self-efficacy. She states that "Students who participate in the assessment process develop the capacity to reflect on where they are in their learning, to understand where they need to go next, and to work out what steps are needed to get there" (loc. 1,626). She supports earlier research that notes that students need clear learning targets as well as an understanding of the learning process. She differentiates self-monitoring from self-regulation by noting that self-monitoring is internal feedback, whereas self-regulation is determining the next steps and knowing how and where to seek assistance, if necessary. The steps along the path of the learning process should be clearly outlined for the students so that they evaluate their progress and growth. Heritage (2013) also provides examples of tools that students can use for self-assessment that can include such elements as exit tickets, graphic organizers, rubrics, and more. These formative assessment tools must be used on a consistent basis with effective formative feedback. Heritage (2013) writes that "Teachers who assist their students to develop metacognitive skills bring to their classrooms a growth mindset" (loc. 1,877). She goes on to write that "Students also need to develop and apply a growth mind-set to their own learning. They must believe that they can learn and that

their own intellectual capacity can grow" (Heritage, 2013, loc. 1,877). Self-assessment effectiveness is dependent upon these ideas. A student's self-efficacy is also impacted through the effective use of self-assessment as the student develops these lifelong skills. Heritage (2013) states that when teachers support self-monitoring and self-regulation within students, "…they intrinsically support an incremental view of learning, and the student stance of proactive self-efficacy associated with it" (loc. 1,901).

A key insight that is shared by Stiggins (2017) related to assessment and dispositions is that "A student's emotional response to assessment results will determine what that student decides to do about those results: keep working, or give up" (p. 85). He goes on to state that students require clear learning targets, an understanding of where they are in relation to achieving those targets, and knowledge of the steps needed to close the gap. If these elements are in place, Stiggins (2017) states that "This helps them maintain a strong internal sense of control over their chances of success. They are active empowered, participants in their own learning" (p. 86). He further discusses the importance of elevating student understanding over time so that they are able to take descriptive teacher feedback and transform that information into self-assessment abilities. According to Stiggins (2017), "Over time, responsibility for formative assessment shifts from the teacher to the individual student. If the foundation for this transition is properly laid, students will embrace this new responsibility with great enthusiasm, and learning will skyrocket" (p. 88). As we consider student dispositions such as self-efficacy, Stiggins additionally notes that while we are considering the positive impact effective formative self-assessment has on student self-efficacy, we also need to consider the negative impact that can occur from assessment that is conducted in a poor manner. Therefore, we educators must be taught about not only the potential benefits of formative self-assessment, but also must be taught

about the most effective means to incorporate formative self-assessment into learning environments.

Summary

The theory and research presented in Chapter 2 supports the focus of this study that there is a positive relationship between formative assessment in online education, to academic achievement and self-efficacy within the context of higher education. There has been a steady increase in the number of online courses being offered; online educators should be learning from and incorporating effective research-based practices into their courses as well, whether from traditional or online courses. Formative assessment allows teachers to provide timely feedback to students and to adjust teaching and learning to improve students' achievement of academic goals. Self-assessment, as an element of formative assessment, has been essential in increasing academic achievement and self-efficacy in the traditional classroom and can also be applied to online courses in higher education. Through formative self-assessment, students monitor and evaluate the quality of their thinking and identify strategies that improve their ability to reach their academic goals. Formative assessment helps students know where they are going, where they are at the point of self-assessment, and how they can effectively reach the learning goal. Chappuis (2005) outlines research-based best strategies to effectively implement formative self-assessment to encourage students to be active participants in reaching the learning goals and increasing academic achievement.

Metacognition also plays a key role, as noted by Flavell (1979). Metacognition involves the person’s belief about themselves and how they learn, the demands and goals of the task, the evaluation process during the task, and the strategies for which the person has been equipped to

approach the task. Metacognition plays an important role in critical thinking and the transfer of knowledge.

As online education continues to grow, so does the need for valid and reliable assessments that effectively measure critical thinking and transfer of knowledge. Darling-Hammond (2014) notes that there is a need to develop assessments that truly reflect higher-order thinking. As part of the multi-measure approach to assessment, the inclusion of student self-assessments allows students to understand the learning targets and to work to improve their work through the use of rubrics. These types of assessments engage students and help them to become more independent learners.

Regarding self-efficacy, Albert Bandura introduced his theory of self-efficacy in 1977. According to Bandura (1977) self-efficacy is one's belief in their ability to apply particular behaviors to reach a desired goal. Bandura's theory provided the foundation for further research into the importance of self-efficacy that can improve task-oriented academic achievement.

This research study demonstrates further evidence that supports incorporating formative self-assessment strategies to increase academic achievement and self-efficacy during online, higher education courses.

CHAPTER 3: METHODOLOGY

The primary goal of this study was to test the research questions related to formative self-assessment, academic achievement, and self-efficacy in online education as noted in Chapter 1. Both quantitative and qualitative measures were used to operationalize these variables. The methodology to assess the research questions is outlined in this chapter. The chapter that follows is organized into categories of research design, setting and participants, instrumentation and measures, data collection, data analysis, and ethical issues.

Research Design

The purpose of this study was to examine the relationship of formative self-assessment to academic achievement and self-efficacy in online graduate education courses. While many research studies have been conducted on the effectiveness of formative assessment in traditional K – 12 classrooms, there is a need to study the effectiveness of formative assessment as it relates to online higher education courses and create awareness about the results. Both quantitative and qualitative data was used for triangulation of the study results. A correlational research design was used for the quantitative approach and a phenomenological research design was used for the qualitative approach. The correlational research design was chosen to examine the relationship between the independent and dependent variables. The phenomenological research design was chosen because the study focused on the relationship of a particular phenomenon to the participant's cognitive and dispositional experiences.

The methodology has been focused on answering the study's research questions which include: 1) What is the relationship of formative self-assessment to assignments in online graduate education courses?, 2) What is the relationship of formative self-assessment to projects

in online graduate education courses?, and 3) What is the relationship of formative self-assessment to student self-efficacy in online graduate education courses?

Setting and Participants

The study's purposive sample included 45 students enrolled in online Master's in Education (M.A. and M.S.) or Doctor of Education (Ed.D.) courses from three universities in the Orange County area of Southern California. To protect the integrity of the study and privacy of the universities, the actual names of the universities will not be used. For the sake of the study, the universities will be referred to as University A, University B, and University C. Random sampling was not possible as students were pre-assigned to the courses. All three online programs utilized a blended model with both asynchronous and synchronous sessions. All students were included from the courses that were chosen for the research study. Additionally, all M.A. and M.S. online fall and spring courses were included from the participating universities. The demographics and course offerings from the three universities are outlined below.

University A: A private Christian university, which focuses on liberal arts and professional studies. The university is Western Association of Schools and Colleges (WASC) accredited. The program demographics include 27% male and 73% female. The ethnicity of the students enrolled in the program include 34% Hispanic/Latino, 82% White, and 4% mixed ethnicity students. The M.A. Education courses included Issues in Education, Educational Research, Curriculum Design, as well as Assessment and Evaluation.

University B: A liberal arts and professional studies private Christian university. The university is accredited by the Western Association of Schools and Colleges (WASC). The program demographics include 46% male and 54% female. The ethnicity of the students

enrolled in the program include 22% Hispanic/Latino, 32% White, 20% Asian/Pacific Islander, and 26% Black students. The Doctorate of Education courses that were included were Strategic Human Resources Management and Development, Instructional Leadership and Assessment, as well as Applied Quantitative Methods for Educational Leaders.

University C: A public university that offers over 100 degree programs, which include a Master's Program within a Charter College. The university is accredited by the Western Association of Schools and Colleges (WASC). The program demographics include 12% male and 88% female. The ethnicity of the students enrolled in the program include 57% Hispanic/Latino, 16% White, 12% Asian/Pacific Islander, 5% Black, 1% American Indian, and 9% Unknown/International students. The M.S. Educational Administration course included Advanced Issues in Mild/Moderate Disabilities.

Instrumentation and Measures

For the purpose of this study, both quantitative and qualitative instruments were used for triangulation to enhance validity and reliability. According to Mertler and Charles (2009), "Triangulation is the process of relating multiple sources of data in order to establish their trustworthiness" (p. 249). In this study, *Formative Self Assessment* was the independent variable, and *Academic Achievement* and *Self-Efficacy* were the dependent variables. A total of six measures were used to operationalize the relationship of formative self-assessment to academic achievement and self-efficacy in online graduate education courses. Three quantitative instruments were used and two qualitative instruments were used to collect data for research analysis (refer to Table 1).

Table 1

Research Instrumentation

Instrument	Description	Variables	Type	Data Analysis
Project Rubric	Rubrics used for student assessment	Academic achievement	Quantitative	Central tendencies Pearson r,
Survey (Survey Gizmo)	20 item Likert survey with a 4-point scale to measure attitude toward the subject being learned.	Academic achievement Self-efficacy	Quantitative	Central tendencies Pearson r
Survey (Survey Gizmo)	Likert survey with 3 open ended questions	Self-efficacy	Qualitative	Domain analysis
Interviews (recorded on Zoom)	5 question individual interviews to be conducted.	Academic achievement Self-efficacy	Qualitative	Domain analysis

The first quantitative instrument operationalized academic achievement. The Project Rubric (see Appendix C) from each course was used to measure students' academic achievement through a student self-assessment as well as a professor assessment based on the rubric.

The second and third instrument operationalized academic achievement and self-efficacy. The survey (See Appendix B), a quantitative instrument containing 20 Likert-type items on a four-point scale, reflected a range of feelings (*4-strongly agree, 3-agree, 2-disagree,* and *1-strongly disagree*) to measure the students' academic achievement and self-efficacy towards the graduate course content. The survey was also used as a qualitative instrument by including three open-ended questions to measure the students' self-efficacy towards the graduate course content.

The fourth instrument was an interview to operationalize self-efficacy. This was a qualitative instrument as it provided narrative data regarding the phenomenon being studied. The individual interviews (See Appendix D) consisted of seven students responding to five

questions. Student selection was based on those students who agreed to be interviewed at the end of the survey. The interviews were recorded using an online platform called Zoom, and later transcribed.

Data Collection

Prior to any data collection being completed, a Letter of was provided and secured for each participant, including the professors and the graduate students (See Appendix A).

The role of the researcher was both as a participant observer in the courses that the researcher taught as well as a non-participant observer in the courses that were not taught by the researcher.

In the initial weeks data was collected regarding academic achievement and self-efficacy. The online course materials and content were provided and taught through a Learning Management System (LMS). A survey was completed to operationalize academic achievement and self-efficacy, which included three open-ended questions, a four-point Likert scale, and demographic questions. The survey was distributed and completed confidentially through Survey Gizmo.

During the second phase of data collection, online course materials continued to be provided and taught using a LMS. A Project Rubric was used as a quantitative instrument to operationalize academic achievement, which students utilized to complete a formative self-assessment. The researcher provided the participants with the rubric.

During final phase of data collection, online course materials continued to be provided and taught using a LMS. The interviews operationalized self-efficacy from a qualitative perspective. The interviews were conducted online through Zoom conferencing. The interviews were transcribed and sent to the participant to confirm accuracy and to further validate the study.

Final receipt of the interview transcripts marked the completion of the data collection for this study.

The proposal for this dissertation was presented on September 1, 2017, which was followed by data analysis and development of the conclusions and recommendations. The data collection was completed during the months of November, 2017 through early February, 2018. Data analysis and validation was then completed during January and February, 2018. Finally, the research study finalized in March, 2018.

Budget Considerations

Budget considerations included the costs for the data analysis programs, gift cards for participants and committee members, the cost for university editing, and final binding of the research study. The costs for the study are outlined below.

- SPSS: No cost
- Gift cards for interviewees, professors, and committee members: $150.00
- University editing (5 hours): $150.00
- Binding: $70.00

Reliability

To ensure reliability of the quantitative instruments, a Cronbach's Alpha test was run in SPSS against the Likert survey and self-assessment rubric data. An acceptable level of reliability of .70 was used, which is a generally accepted value.

The effect size was noted as the variance explained for each correlation calculated. Additionally, the qualitative data was recorded, transcribed, and approved by the participant, to ensure reliability.

Validity

In order to validate the findings, the methods used were triangulated to include both quantitative and qualitative data. The instruments were valid, as they provided data that were aligned to the research questions. The Likert survey was coded for the variables of self-efficacy and assignments. Researcher bias was also clarified to add to the validity of the study. Where possible, instruments were included that were previously used by other researchers, as those measures were already proven to be valid instruments for the purpose of conducting interviews and self-efficacy attitude surveys. Finally, for the interviews, after the transcription was completed, follow up was conducted to confirm accurate representation of narrative data.

Data Analysis

For the purpose of this study, descriptive statistics, inferential statistics, and domain analysis were used. The quantitative statistical software used was SPSS. Descriptive and inferential statistics were used to analyze the quantitative data collected during the study. Descriptive statistics provided frequency distribution percentages; measures of central tendencies were calculated, including mean, median, and mode; measures of dispersion were used, including range and standard deviation. For statistical data analysis, Pearson r correlations were conducted for performance and attitude data. Relationships between variables were analyzed to determine associations and to make predictions. Correlations with an absolute value over .70 were considered strong and correlations between .30 and .70 were moderate. An alpha level of $p<.05$ was used to determine significance.

The narrative data was analyzed from transcripts and open-ended responses. The researcher read through and coded the data using axial coding procedures. Reflexivity was

considered by the researcher in reference to the interpretation of the data. Qualitative data provided themes and patterns through the use of domain analysis.

Narrative Structure

As the qualitative data followed a phenomenological design, the narrative structure also followed phenomenological writing structure. Moustakas' narrative structure (as cited by Creswell, 2013) notes "The analysis steps—identifying significant statements, creating meaning units, clustering themes, advancing textural and structural descriptions, and ending with a composite description of the essential invariant structure (or essence) of the experience" (p. 226). While this represents the overall structure, the embedded structure also follow Moustakes (1994). Moustakes' suggestion (as cited by Creswell, 2013) is to "Write a brief creative close that speaks to the essence of the study and its inspiration to you in terms of the value of the knowledge and future directions of your professional personal life" (p. 226). The researcher's own experience with the phenomenon were incorporated into the narrative.

Expected Outcomes

The expected outcomes were the rejection of the null hypothesis, stating that there was a positive relationship between formative self-assessment, academic achievement, and self-efficacy. Another expected outcome was professional development experienced by the researcher from the process of conducting the research study.

Ethical Issues

In order to address ethical issues, several precautions were incorporated into the study. IRBs were requested and approved, a Protection of Human Rights Research Committee (PHRRC) course was completed, and letters of consent were provided and secured from all participants. In addition, research bias was taken into consideration, and participant and

university confidentiality were maintained throughout the study through the use of alias names. Finally, participants understood the purpose of the study as well as how the study results would be reported.

Summary

This study sought to reflect a positive relationship between formative self-assessment, academic achievement, and self-efficacy. Therefore, a correlational research design was used, and the data was triangulated through the inclusion of quantitative and qualitative instruments and data. The subjects included students that were enrolled in Master's in Education or Doctor of Education courses from three universities located in Southern California. The methodology included student self-assessment through a project rubric and a survey to operationalize academic achievement, as well as a survey and interviews to operationalize student self-efficacy. The subsequent chapters will provide the quantitative and qualitative data analysis. The use of formative assessment in online higher education courses has not been studied to this extent. The goal is to increase awareness of the potential educational benefits that the use of formative self-assessment can bring to online educational programs and courses.

CHAPTER 4: FINDINGS

The purpose of this correlational study was to explore the relationship between formative self-assessment and academic achievement, as well as to study the possible positive relationship between formative self-assessment and student self-efficacy related to their graduate education courses. Quantitative data was gathered through a Likert survey as well as a Self-Evaluation Rubric. Qualitative data was gathered through open-ended questions in the Likert survey, interviews, and online discussion posts. For each of the three hypotheses, the statistical analysis is presented first that includes descriptive statistics as well as correlational analyses. The statistical analyses are followed by non-statistical analyses that include themes and patterns that emerged.

In proceeding with the findings, it is important to note key definitions as they were defined in this study. Formative assessment was defined by The Glossary of Education Reform (2014) as "A wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson, unit, or course" (para. 1). For the purpose of this study, the graduate students used a self-assessment rubric that was provided to them by the researcher. Self-assessment was defined by Black and Wiliam (1998) as, "Containing three elements: recognition of the desired goal, evidence about present position, and some understanding of a way to close the gap between the two" (p. 8). Self-efficacy was defined by Bandura (1994) as "Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (para. 1). Carey and Forsyth (2017) further defined self-efficacy by stating, "Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment" (para. 1). This correlational research study sought

to answer three research questions: 1) What is the relationship of formative self-assessment to assignments in online graduate education courses?, 2) What is the relationship of formative self-assessment to projects in online graduate education courses?, and 3) What is the relationship of formative self-assessment to student self-efficacy in online graduate education courses?

Subjects

The participants in this study included a total purposive sample of forty-five students from three self-contained graduate education programs in Southern California. The graduate students participating in this study were given the opportunity to participate through informed consents that were given to the students by their professors or program director. The demographics of the graduate students who participated included 16.7% (seven) males and 83.3% (35) females, which is typical of the educational field with a higher percentage of women than men. Ages of the participants ranged from 20 to 60; 45.2% (age 20 – 30), 31.0% (age 31 – 40), 11.9% (age 41 – 50), 9.5% (age 51 – 60), and 2.4% (age 60+). The participants represented a range of years in their teaching profession with 66.7% (0 – 5 years), 11.9% (6 – 10 years), 2.4% (11 – 15 years), 14.3% (16 – 20 years), 2.4% (21 – 25 years), and 2.4% (26 – 30 years). There was also a range of type of teaching credential represented within the participants as well with 16.7% Elementary, 14.4% Secondary Education, 57.1% Special Education, and 11.8% Other. The graduate programs that the students were enrolled in were from three universities in the Southern California area and the courses included 88.1% categorized as blended with both online and face-to-face meetings and 11.9% categorized as fully online. The tables that follow clearly depict the demographics of the subjects who participated in this research study.

Findings for Hypothesis One: Relationship Between Formative Self-Assessment to Assignments

Statistical Findings

The first hypothesis stated that there would be a positive relationship between the formative self-assessment and assignments in online graduate education courses. Likert surveys were first analyzed using descriptive statistics.

Table 2 represents the age of the participants including a histogram that depicts the average age of participants being 34 years of age. For this study, age ranges were delineated in 10-year increments.

Table 2

Frequency: Likert Survey: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25.00	20	44.4	47.6	47.6
	35.00	12	26.7	28.6	76.2
	45.00	5	11.1	11.9	88.1
	55.00	4	8.9	9.5	97.6
	60.00	1	2.2	2.4	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

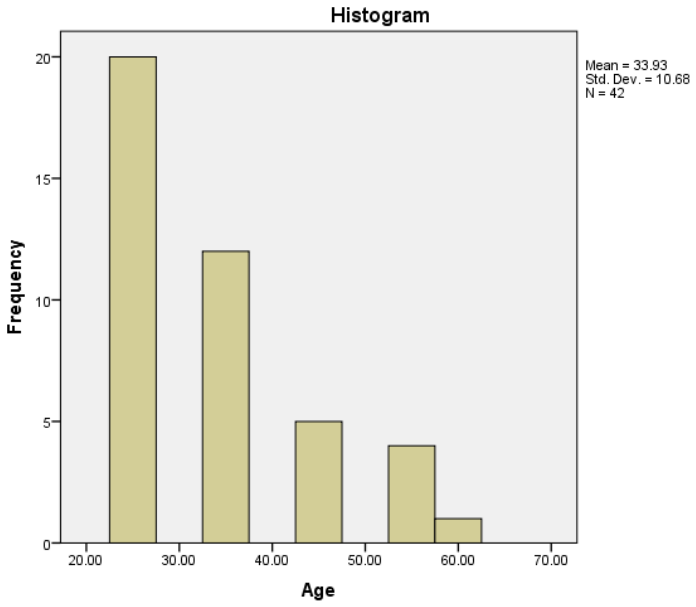

Figure 2. Histogram: Likert Survey: Age distribution of sample (N=42).

Table 3 represents the gender of the participants. The majority of participants were female, with 35 out of 45 participants, or 83%, being female. Seven participants, or 17% of participants, were male. This follows the norm for the field of education.

Table 3

Frequency: Likert Survey: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	7	15.6	16.7	16.7
	Female	35	77.8	83.3	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

Table 4 represents the years that the participants have been teaching. The majority of participants have been teaching for 5 years or less, which represents 67% of all participants. As many credential programs have graduate degrees embedded, many teachers are seeking graduate

degrees within 5 years of completing their credentials. For this study, ranges were delineated in 5-year increments.

Table 4

Frequency: Likert Survey: Years Taught

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.50	28	62.2	66.7	66.7
	8.00	5	11.1	11.9	78.6
	13.00	1	2.2	2.4	81.0
	18.00	6	13.3	14.3	95.2
	23.00	1	2.2	2.4	97.6
	28.00	1	2.2	2.4	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

Table 5 and the bar chart in Figure 3 represent the years that the participants have been teaching. The majority of participants hold a special education credential, which represents 57% of all participants. This is due to those universities and students who agreed to participate in the study.

Table 5

Frequency: Likert Survey: Credential

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary	7	15.6	16.7	16.7
	Secondary-English	2	4.4	4.8	21.4
	Secondary-Math	1	2.2	2.4	23.8
	Secondary-Social Studies	1	2.2	2.4	26.2
	Secondary-Science	1	2.2	2.4	28.6
	Secondary-Other	1	2.2	2.4	31.0
	Special Education	24	53.3	57.1	88.1
	None	5	11.1	11.9	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

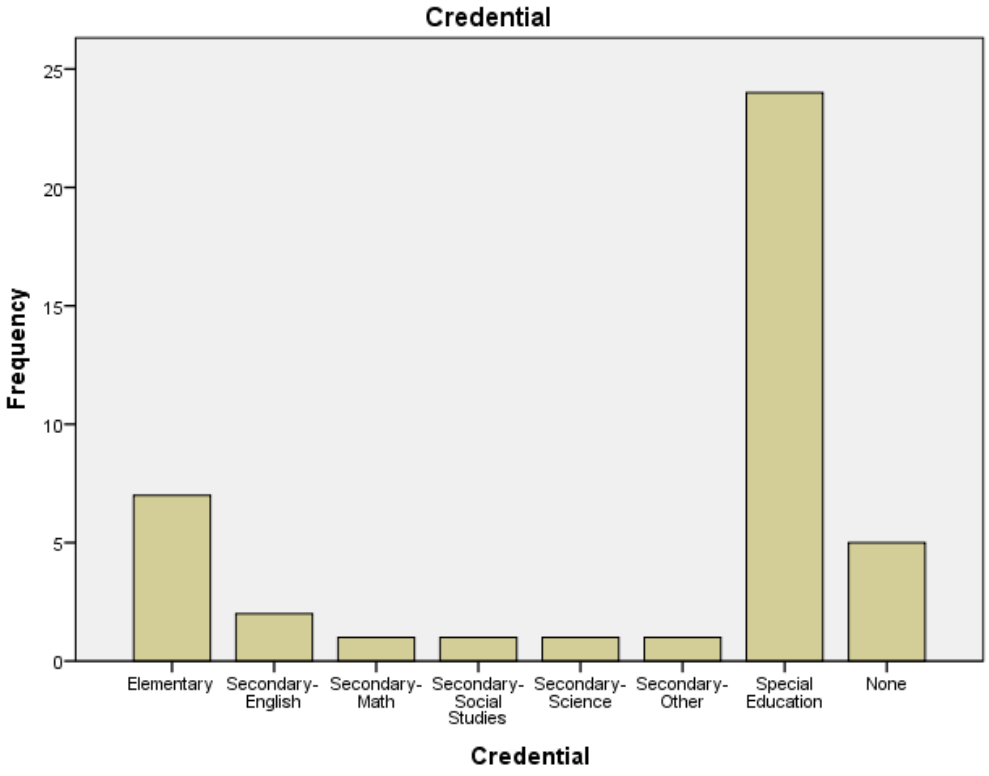

Figure 3. Bar Chart: Likert Survey: Type of credential held by participants.

Table 6 and the bar chart in Figure 4 represent the number of courses the participants have completed within their online graduate programs. Thirteen of the participants have

completed more than ten courses, which represents 32%. Additionally, ten of the participants have completed three to four courses, which represents 24%. The remaining percentage reflects 6 participants having completed five to six courses, or 15%, another 6 participants having completed seven to eight courses, or 15%, 5 participants just beginning their program with one to two courses completed, or 12% and 1 participant having completed nine to ten courses, which represents two percent.

Table 6

Frequency: Likert Survey: Courses Done

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One-Two	5	11.1	12.2	12.2
	Three-Four	10	22.2	24.4	36.6
	Five-Six	6	13.3	14.6	51.2
	Seven-Eight	6	13.3	14.6	65.9
	Nine-Ten	1	2.2	2.4	68.3
	More than Ten	13	28.9	31.7	100.0
	Total	41	91.1	100.0	
Missing	System	4	8.9		
Total		45	100.0		

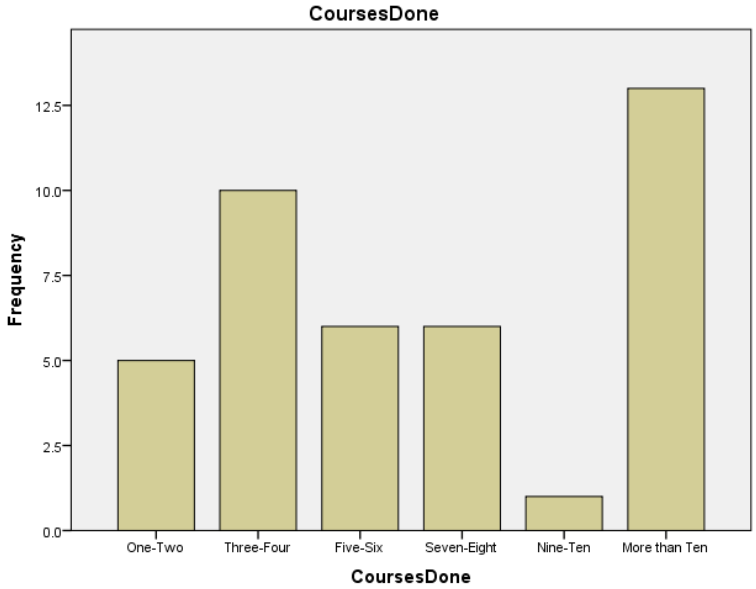

Figure 4. Number of courses completed in the graduate program.

Table 7 represents the type of online graduate program in which the participants are enrolled. The majority of participants are enrolled in a blended program, which means that while mainly taught online, occasionally they will meet in a traditional setting. Eighty-eight percent of all participants were enrolled in a blended program and 12% were enrolled in a program that was taught fully online.

Table 7

Frequency: Likert Survey: Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fully Online	5	11.1	11.9	11.9
	Blended	37	82.2	88.1	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

Participants were asked if they were required to complete formative self-assessments in their online graduate programs. The responses are represented in Table 8 below. Twenty-one of the participants, or 50%, responded that their professor did require formative self-assessment, and the other 50% responded that their professor did not require formative self-assessment during their course. This question within the Likert Survey was used to operationalize the independent variable of formative self-assessment. As the resulting response was 50%, a relevant base was evident to test for relationships between the independent variable of formative self-assessment and assignments.

Table 8

Frequency: Likert Survey: Self-Assessment Required

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self-Assessment Not Required	21	46.7	50.0	50.0
	Self-Assessment Required	21	46.7	50.0	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

As shown in Table 9, student responses ranged from strongly agree to strongly disagree depending upon the question asked. The highest level of positive feelings (*strongly agree* and *agree*) were found relevant to graduate student responses to three survey items. The first was relevant to believing that formative feedback from their professor aids in their academic achievement, reflecting 69.0% stating strongly agree and 26.2% stating agree. The second was found relevant to graduate student responses to finding their professors accessible to provide feedback, reflecting 50.0% stating strongly agree and 45.2 stating agree. The third survey item that yielded high levels of positive feelings was relevant to finding their graduate program challenging, which reflected 40.5% stating strongly agree and 54.8% stating agree.

Table 9

Frequency: Likert Survey: Assignments

Likert Item	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
I regularly utilize rubrics to self-assess my assignments before completing them…	47.6%	40.5%	4.8%	7.1%
I receive formative feedback from my professor, which is not graded…	19.0%	61.9%	16.7%	2.4%

I believe that formative feedback from my professor aids in my academic achievement…	69.0%	26.2%	2.4%	2.4%
I find my graduate program to be challenging…	40.5%	54.8%	4.8%	0.0%
I find my professors accessible to provide feedback…	50.0%	45.2%	2.4%	2.4%

N=40

A Cronbach's Alpha analysis was run to determine a scale of reliability (see Table 10). Given a general acceptable level of reliability of .70, and 45 participants, it was determined that the Likert survey was reliable at .628.

Table 10

Cronbach's Alpha: Likert Survey

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.628	.641	12

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' nominal scores on the Self-Assessment Requirement and participants' scaled scores regarding Assignments (see Table 11). A weak correlation that was not significant was found ($r(40) = -.055$, $p<.05$). Self-assessment requirement is not related to assignments.

Table 11

Pearson r Correlation: Likert Survey: Self-Assessment Required to Assignments

		SelfAssessReq	Assignment_mean
SelfAssessReq	Pearson Correlation	1	.152

	Sig. (2-tailed)		.337
	N	42	42
Assignment_mean	Pearson Correlation	.152	1
	Sig. (2-tailed)	.337	
	N	42	42

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I receive formative feedback from my professor, which is not graded…* and participants' responses to the Likert item, *I believe that formative feedback from my professor aids in my academic achievement...* A moderate, positive correlation was found ($r(40) = .468$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 12). Therefore, approximately 22% of the variance in students' responses toward whether they receive formative feedback from their professor is accounted for by the variance in students' belief that formative feedback from their professor aids in their academic achievement. Students who received formative feedback from their professor were more likely to believe that the formative feedback received would aid in their academic achievement.

Table 12

Pearson r Correlation: Likert Survey: Professor Feedback to Academic Achievement

		I receive formative feedback from my professor, which is not graded...	I believe that formative feedback from my professor aids in my academic achievement...
	Pearson Correlation	1	.468**
	Sig. (2-tailed)		.002

I receive formative feedback from my professor, which is not graded...	N	42	42
I believe that formative feedback from my professor aids in my academic achievement...	Pearson Correlation	.468**	1
	Sig. (2-tailed)	.002	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I receive formative feedback from my professor, which is not graded…* and participants' responses to the Likert item, *I find my graduate professors accessible to provide feedback…* A moderate, positive correlation was found ($r(40) = .560$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 13). Therefore, approximately 31% of the variance in students' responses toward whether they receive formative feedback from their professor is accounted for by the variance in students' belief that their graduate professors are accessible to provide feedback. Students who received formative feedback from their professor were more likely to believe that their professors were accessible to provide feedback.

Table 13

Pearson r Correlation: Likert Survey: Professor Feedback to Professor Accessibility

		I receive formative feedback from my professor, which is not graded...	I find my graduate professors accessible to provide feedback...
	Pearson Correlation	1	.560**
	Sig. (2-tailed)		.000

I receive formative feedback from my professor, which is not graded...	N	42	42
I find my graduate professors accessible to provide feedback...	Pearson Correlation	.560**	1
	Sig. (2-tailed)	.000	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I regularly utilize course rubrics to self-assess my assignments before completing…* and participants' responses to the Likert item, *I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives…* A moderate, positive correlation was found ($r(40) = .317$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 14). Therefore, approximately 10% of the variance in students' responses toward whether they regularly utilize course rubrics to self-assess their assignments before completing them is accounted for by the variance in students' belief that self-assessment allows them to determine the necessary steps to successfully achieve the course objectives. Students who regularly used rubrics were more likely to believe that self-assessment allows them to determine the necessary steps to successfully achieve the course objectives.

Table 14

Pearson r Correlation: Likert Survey: Rubrics for Self-Assessment to Achieving Course Objectives

		I regularly utilize course rubrics to self-assess my assignments before completing...	I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...
I regularly utilize course rubrics to self-assess my assignments before completing...	Pearson Correlation	1	.317*
	Sig. (2-tailed)		.041
	N	42	42
I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...	Pearson Correlation	.317*	1
	Sig. (2-tailed)	.041	
	N	42	42

*. Correlation is significant at the 0.05 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I regularly utilize course rubrics to self-assess my assignments before completing…* and participants' responses to the Likert item, *I am satisfied with the amount of self-assessment I undertake…* A moderate, positive correlation was found ($r(40) = .367$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 15). Therefore, approximately 13% of the variance in students' responses toward whether they regularly utilize course rubrics to self-assess their assignments before completing them is accounted for by the variance in students' satisfaction with the amount of self-assessment they undertake. Students who regularly utilized rubrics were more likely to be satisfied with the amount of self-assessment that they undertook.

Table 15

Pearson r Correlation: Likert Survey: Rubrics for Self-Assessment to Amount of Self-Assessment Undertaken

		I regularly utilize course rubrics to self-assess my assignments before completing...	I am satisfied with the amount of self-assessment I undertake...
I regularly utilize course rubrics to self-assess my assignments before completing...	Pearson Correlation	1	.367*
	Sig. (2-tailed)		.017
	N	42	42
I am satisfied with the amount of self-assessment I undertake...	Pearson Correlation	.367*	1
	Sig. (2-tailed)	.017	
	N	42	42

*. Correlation is significant at the 0.05 level (2-tailed).

Non-Statistical Findings

Open-ended responses were received from the graduate students related to formative assessment and assignments. Specifically, students were asked about the process that they used in completing their course assignments. One pattern that emerged was referring to the rubrics and syllabus was the most common process used in completing course assignments (see Tables 16 – 20). A second pattern that emerged was completing work in advance. A third pattern in the open-ended survey responses showed that students highlight syllabus details and chapter readings.

Table 16

Likert Survey Open Ended Question #1 Responses: Students Completed One – Two Courses in Program: Please share the process that you use in completing your course assignments?

Participant Responses Fitting the Pattern "Refer to Rubrics and Syllabus"
"It really depends on the course assignment. Some assignments were done after reading chapters and summarizing what has been read. Other assignments were ongoing where feedback was provided for necessary changes."
"The process I am using to complete course assignments is primarily: use of the course syllabus, rubrics and any samples coupled with time management strategies. For example, once I understand the scope and expectations of the work, I calendar time to complete it."
"In order to complete course assignments, I initially review all part being asked of me in the instructions. Next, by following directions I complete the assignment and finish by reviewing my work."
"I usually skim through the assignment or assigned readings to get an idea of how much work I have to do. Then I come back and focus on the ones that are almost due and make sure I reference back to the assignment prompt to make sure I have the correct information."
"When completing online course assignments I begin by reading the syllabus and prompt very closely. I follow the directions try to answer the prompt correctly. If I have any questions I ask peers or email my professor for clarification."

N=40

Table 17

Likert Survey Open Ended Question #1 Responses: Students Completed Three-Four Courses in Program: Please share the process that you use in completing your course assignments?

Participant Responses Fitting the Pattern "Refer to Rubrics, Syllabus, and Work in Advance"
"The course assignments involved many activities where the professor provided formative feedback. When completing the course project, the instructor always provide an abundance of formative feedback to help ensure students final submission was not missing any necessary component. Additionally, giving formative feedback after the completion of each chapter helped students to better understand what was needed in the chapters that would follow. Nonetheless, there were also independent assignments in which students did not receive feedback. When completing the chapter reading, students would submit the assignments, which would mainly insured that students were prepared for what would be talked about during future meetings."
"Reading the syllabus to see what my professors require."
"I read what the assignment is and then I read the chapters during the week and highlight information that I see valuable. During the weekend, when I have time to sit down and type, I respond to the reflection questions and other work that we may have. I don't like waiting till the last minute to do my work so I spread it out throughout the week and weekend so that I am not overwhelmed."
"I complete course assignments for my courses by first reviewing the syllabus with the list of required assignments. I read the rubric for each assignment on the first day of the class. I complete the assigned reading and watch online video modules before completing discussion posts or assignments. I use Google

documents to brainstorm ideas and capture evidence from written and online sources. I use Microsoft Word to write research papers."

"For small assignments such as discussion boards, I just do them. For high point value assignments, I read through the rubric to make sure I am hitting all of the components."

"I like to backwards map when I am in courses. I will look at the assignments and try to have an assignment completed at least three days before it is due. This allows me the opportunity to re-read the assignment/paper, walk away from it, think about it and then ultimately revise before it is turned in. Depending on my engagement in the class, and how well I am intrigued by the course content, I may procrastinate. However, if the material is extremely interesting to me, assignments are done well in advance."

"First I look at the syllabus. Then I review the assignments and when they are due. Next, I look at the assignment rubric and reread the exception of each assignment with the rubric next to it. Finally, I schedule time to work on the assignments, a little each day, so I don't get overwhelmed."

"I use the course outline and input my assignments and due dates into my monthly calendar."

"I go to class on campus and a few classes online."

"There are a couple things I like to do even before beginning an assignment. To ensure that I fully understand what the assignment is asking of me, I read the instructions and/or thoroughly go over the rubric. I also write the due dates of all of my assignments in my calendar at work, so I am reminded throughout the week that I have assignments to complete. While doing the assignment, I find a place that is distraction-free, so I can focus and an uncomfortable seat, so I don't get too comfortable and doze off. If the assignment requires a response to articles, I read the questions/prompt first, so I know what to put a little more of my focus on while reading lengthy texts."

N=40

Table 18

Likert Survey Open Ended Question #1 Responses: Students Completed Five-Six Courses in Program: Please share the process that you use in completing your course assignments?

Participant Responses Fitting the Pattern "Refer to Rubrics, Syllabus, and Work in Advance"
"I read the required readings during the first weeks of class. Then, I tackle the written assignments. I tend to complete them by Week 6 or 7. Finally, on the final couple of weeks, I leave enough time to work on my dissertation."
"I usually just take a look at my syllabus or wait for an instructor to email me, after which I would take mental notes of deadlines."
"For online classes, I usually go through the Moodle website to check for course assignments. From there, the professor would usually attach an assignment like a forum in which we respond to questions from assigned readings. There are also quizzes and papers that aren't uploaded. As papers are uploaded...the professor would usually respond with feedback and notes on my documents."
"The process that I use in completing my course assignments entails a routine I try to stick to. This involves setting aside a couple of hours throughout the week to work on my assignments. Often times, I go to the library to avoid distractions. I look at the rubric that is often provided to guide my readings. Often times, I revise my written work to ensure that I answer all the required information on each assignment."

"I complete the assigned readings needed early in the week (Monday-Wednesday) depending on how much is assigned. I typically complete most of my homework on the weekends. If I don't finish the assigned work, I work on it Tuesday and Wednesday evenings."

N=40

Table 19

Likert Survey Open Ended Question #1 Responses: Students Completed Seven-Nine Courses in Program: Please share the process that you use in completing your course assignments?

Participant Responses Fitting the Pattern: "Refer to Rubrics, Syllabus, Completing Readings, and Highlighting"
"I usually start by reading the assignment description, making sure I understand what needs to be done. If I am responding to a reading, I will take notes or write my reflections as I read. If I am reading, but not answering questions, I highlight salient details as I go. When I am finished, I try to return to the assignment description or syllabus if provided to ensure that I have met the goals of the assignment."
"I usually have a quick look at the assignment and the rubric to know what the expectations are. I then read the course material for that week, noting down or highlighting important points which I think will be helpful for the assignment. I then complete the assignment-i usually do a quick review before submitting."
"Read the instructions, find relevant information, complete the assignment, and submit it."
"I review the syllabus and highlight all of the important due dates. I then schedule them into my planner. This process assists me with staying organized since the class is not meeting weekly. I also exchange my information with one peer that is in the class. I make sure that I keep up on all of the readings and assignments by checking them off as I complete each item. I also keep track of the points that I am earning through Moodle on assignments/quizzes. I also refer to the rubrics to guide me in completing assessments."
"To complete assignments I read the directions several times and break the assignment in sections. Also, I use a rubric if is available for the assignment."
"When completing course assignments, I usually follow a timeline that teachers provide. I like to have my assignments completed before the due date, so that I am able to ask questions if needed. Once I complete the assignments I submit them either via email or upload to the Moodle page. I then wait for feedback and/or response."
"The process that I used in completing course assignments is a usually wait to the last minute. I began the assignment the day before it's due and work on the assignment for about 2 days, then I turn it in."

N=40

Table 20

Likert Survey Open Ended Question #1 Responses: Students Completed More Than Nine Courses in Program: Please share the process that you use in completing your course assignments?

Participant Responses Fitting the Pattern: "Refer to Rubrics, Syllabus, Completing Readings, and Highlighting"
"I read the rubrics to see what is required. Then, I do the assignments."
"First I read the syllabus. I read the assignments and the expectations for the course. I loosely hold onto the information. Weekly, I read the expectations - usually the week before due dates and start with the Christian message, the videos, the readings, the discussion board, and finally the assignment. I do this work on the weekends (Friday night, Saturday, and Sunday). During the week, I will respond to classmates as they post. Sometimes I read during the week. I complete all assignments early if professors have the week up."
"It depends on what the assignment is... I typically set aside blocks of time throughout the week to work on my assignments. I typically start by reading the assigned reading assignments, then work on answering the questions assigned."
"Logon to blackboard to read assignment complete readings, follow rubric complete assignments sometimes collaborate on assignment submit."
"When completing course assignments, I will typically scan through the assignment and decide how much time I will need to set aside. Once that time comes, I will re-read my assignment and break it down into sections (a prompt, question, project, etc…). Let's say that I am writing a paper in response to a prompt. I would break the prompt down into sections to ensure that I address all areas. I utilize any resources that are available to me (articles, videos, etc.) and sift through the information looking for material that will help me address the first part of the prompt. I would continue to use this method for the remainder of the assignment."
"When in doubt about the task at hand, I email professor to get clarification. If professor doesn't respond within a certain time, I seek out colleagues to clarify. Otherwise, I try my best. I also look at sample works that professors post to see what they are looking for in terms of acceptable work."
"The process I use is to make sure to download the syllabus and keep it in a folder that can be easily accessed to be able to constantly refer back to the assignments due dates. Then every week make sure to get all the readings and assignments on hand to get to them in a timely manner. And repeat this process weekly to stay on top of the work that is needed to be completed."
"I complete course assignments utilizing a personal planner along with the course syllabus. I will typically write down important due dates into my planner and map out when I should be working on any given assignment."
"I begin by reading the syllabus to gain a full understanding of the expectations of a course assignment, highlighting the most important aspects and dates. When I begin working on an assignment, I keep the requirements in mind to ensure I address each area of the assignment. If a rubric is provided, I compare my assignment to the expectations and edit my writing if necessary to meet the requirements of the assignment."
"I typically try to do just a little bit at a time. It's very overwhelming to try and accomplish all of it at once so I try to give myself as much time as I can to complete everything well."

(continued)

Participant Responses Fitting the Pattern: "Refer to Rubrics, Syllabus, Completing Readings, and Highlighting"
"I go over the guidelines for the assignment and make sure that each part of the rubric is met. I usually give myself enough time to complete the assignment and read over my work before submitting it. If there are sample assignments available, I review them to get an idea of what is expected for the assignment. In case I have questions I typically will contact other colleagues in the course before emailing the professor for clarification."
"When completing course assignments, I will usually first read the directions and then determine how to allocate my time to complete it. Depending on how much time I have available, I'll do the prep work in parts if there are readings required or multiple prompt questions; or I may complete it all in one sitting if there isn't much prep work involved."
"I complete course assignments dedicating basically my entire weekend writing and revising the assignments before turning them in."

N=40

Open-ended responses were received from the graduate students related to formative assessment and assignments. Specifically, students were asked to share what type of formative feedback they received from professors prior to completing assignments. One pattern that emerged was formative feedback is needed from professors prior to submitting final assignments (see Tables 21 – 25). A second pattern that emerged was that the formative feedback that has been provided has been in incremental stages. A third pattern in the open-ended survey responses showed that students often utilized rubrics to evaluate their progress.

Table 21

Likert Survey Open Ended Question #3 Responses: Students Completed One – Two Courses in Program: Please share what type of formative feedback you receive from your professors, prior to completing assignments.

Participant Responses Fitting the Pattern: "Refer to Rubrics"
"I have not received formative feedback in my undergraduate program like I have in the Credential and Masters program. I have received verbal and written formative feedback that has been extremely effective and beneficial."
"The feedback I've received before completing assignments has primarily occurred at our synchronous and face to face sessions. I've received clarification, direction, and answers to questions. I've also received answers to direct questions posed through email."

(continued)

Participant Responses Fitting the Pattern: "Refer to Rubrics"
"In the classroom teachers generally ask questions to check for understanding. Monitor whole class reaction/facial expressions. They, also have rubrics and feedback before submission of assignments."
"Sometimes teachers make a post online to give a little bit of a reminder or brief prompt so that we know what is expects."
"The formative feedback that I receive from professor prior to completing assignments is a rubric that specifies the components of the assignment."

N=40

Table 22

Likert Survey Open Ended Question #3 Responses: Students Completed Three – Four Courses in Program: Please share what type of formative feedback you receive from your professors, prior to completing assignments.

Participant Responses Fitting the Pattern: "Feedback in Incremental Steps"
"Prior to the final submission of each chapter, the instructor would leave comments on the document that was submitted and return it to the students. When necessary, she would make herself available to provide verbal feedback in order to further clarify the changes that needed to be made on the documents."
"While doing the course project, I received feedback on corrections that needed to be done. The comments were about varied things such as: formatting, grammar, and sentence structure. There were other comments for suggestions on how to reword certain sentences and missing concepts."
"I email them my ideas or thoughts and they usually email me back with positive feedback and suggestions for improvement or guidance about the direction or content of the assignment."
"Other than an explanation of the syllabus on the first day of class, I haven't seen much feedback prior to completing assignments. The feedback in discussion boards is helpful for answering future posts, but for major assignments there is usually not much formative feedback unless specifically inquired about."
"I would like to say that I receive a great deal of feedback, however, this has not always been the case. I have received little to no feedback prior to the completion of assignments."
"Professors have shared examples/samples as well as referring you to review the rubric. They also provide time in class to ask any questions or concerns and share that they are available to give you feedback on your personal assignment if needed."
"The assignments are turned in-in parts and feedback makes it easier to get a better grade at the end."
"My professors have opened a discussion in class about the assignments to see if we have any questions or comments. Professors have sent out emails and on an online forum, professors have an open discussion that students can post should we have questions or comments about assignments."
"A lot of my professors will give opportunities to turn in our semester-long assignments in increments throughout the semester and gives feedback. This is helpful because it not only keeps me from falling behind, but I know if my assignment is meeting my professor's expectations or not. I have had some professors who check in with us periodically throughout the semester and give us verbal formative feedback."

N=40

Table 23

Likert Survey Open Ended Question #3 Responses: Students Completed Five – Six Courses in Program: Please share what type of formative feedback you receive from your professors, prior to completing assignments.

Participant Responses Fitting the Pattern: "Feedback in Incremental Steps"
"Formative feedback is key, especially for written assignments. The feedback I get lets me make corrections as well as direct my work in the direction the professor would like me to go in."
"I usually receive feedback once I ask a question on an assignment. Professors usually provide feedback on my teaching strategies."
"Usually I would just get notes or comments on assignments on what needs to be changed or suggestions they may have. I also have emailed with professors back and forth and set up appointments to help with assignments."
"I find that usually comes in the form of responses during discussions or feedback when we submit drafts."
"I have been able to work with amazing professors who often times provided formal and informal feedback with regards to my papers and projects. Often times, they break the reports into several sections throughout the semester, allowing time for feedback and reflection to take place."

N=40

Table 24

Likert Survey Open Ended Question #3 Responses: Students Completed Seven – Nine Courses in Program: Please share what type of formative feedback you receive from your professors, prior to completing assignments.

Participant Responses Fitting the Pattern: "Feedback in Incremental Steps"
"In several of my classes, I have been able to submit questions to my professors or get early feedback regarding large assignments."
"Oral feedback about areas of improvement in completed assignments. Professors also ask pertinent questions during class discussions and give us feedback on our responses."
"Sometimes they provide samples, sometimes they give brief comments, or site the readings."
"Instructors will post notes via the online Moodle site about expectations or clarifications in regards to assignments. Instructors will also have students submit their major assignments in parts. By submitting the assignment in parts the student is able to receive feedback during each step of the assignment process."
"Formative feedback received form the professors is directions of the assignments and rubrics to follow. They make themselves available during office hours incase students need helps or some clarifications of assignments."
"Normally when turning in assignments on online the teacher will provide feedback on your work after they've graded it. Although, I have had classes were no feedback was given and you're left wondering if the assignment is done correctly."

N=40

Table 25

Likert Survey Open Ended Question #3 Responses: Students Completed More Than Nine Courses in Program: Please share what type of formative feedback you receive from your professors, prior to completing assignments.

Participant Responses Fitting the Pattern: "Feedback in Incremental Steps"
"We receive formative feedback approximately every 2-3 weeks. This is helpful to see how we are doing and any possible changes we need to make."
"Sometimes our professors ask us to talk about our assignments and the direction we are going. Sometimes our professors check for understanding to make sure we know what to do; however, most of the time they do not in my program. It is one of my concerns about college professors. It is an automatic with elementary teachers - best teaching practice says to check for understanding prior to assigning anything. The professors could use some teaching in this area."
"This has varied, some professors have been very active and given a lot of feedback, others not as much."
"None"
"The type of formative feedback I typically receive from my professors is informal. This happens during class discussions, informal surveys, and in class activities."
"When we are asked to submit our written assignments in 'parts', the teachers usually return them with comments in areas of strength and with areas that need to be worked on. Usually, by the end of the assignment, if I have worked on it according to the feedback, I expect to get an A."
"Some type of formative feedback is being told the expectant length of the assignment. In some classes it is very helpful when teachers post an example of a big assignment or essay to go by. It gives a much clearer understanding of what the assignment or paper may look like for the final product. Other types of feedback is when we have short discussions about any material or text we are learning about in class at the moment. The teacher will usually ask questions and guide the discussion to get the main points essential to our class topics."
"Teachers usually provide rubrics and samples to guide us. I prefer in person classes so that I can ask questions to clarify concepts or due dates. Professors are usually easy to reach by email so I also use that quite often when things are unclear. I am always striving for an A in my classes so if possible I don't take a full load to manage time and stress better."
"There is variability when it comes to feedback from professors. Whereas some professors provide useful corrective and/or specific and encouraging feedback to help us understand how well we are progressing toward completion of an assignment, others simply provide simple and vague responses, such as 'good' or 'keep doing what you're doing'."
"In one of my online classes we had to turn in a project that was due at the end of the semester. Throughout the semester the professor had us submit parts of the project and gave us detailed feedback on ways to improve our work. It was really useful to know what my strengths and weaknesses were so that I could meet the requirements of the project. Typically, in other courses I rely on feedback such as class discussions and quizzes."
"The formative feedback I've received is usually on written assignments through comments highlighting specific parts of my drafts, or rubrics that are used for scoring purposes when assignments are completed in parts."

(continued)

Participant Responses Fitting the Pattern: "Feedback in Incremental Steps"
"Some professors who have larger writing assignments will have us turn in sections of the assignment in checkpoints. This allows the professor to provide feedback on our progress and clarification on the assignment if we may be missing the objective."
"When turning in semester-long projects, I will receive notes and suggestions on drafts of my work."
"I was provided written feedback from my professor about what was good about my assignments, and what needed to be changed or rearranged in order to receive a good mark on my final papers. I also was able to speak with my professor individually on two separate occasions in order to receive constructive feedback on ideas I was struggling with."

N=40

Findings for Hypothesis Two: Relationship Between Formative Self-Assessment to Projects

Statistical Findings

The second hypothesis stated that there would be a positive relationship between formative self-assessment and projects in online graduate education courses. A self-assessment rubric was first analyzed using descriptive statistics. The same self-assessment rubric was utilized for all participants to self-assess themselves relative to their main course project (see Appendix C).

Table 26 represents the gender of the participants. The majority of participants were female with 39 out of 48 participants, or 81% being female. Nine participants, or 19% of participants were male. This follows the norm for the field of education.

Table 26

Frequency: Self-Assessment Rubric: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	9	18.8	18.8	18.8
	Female	39	81.3	81.3	100.0
	Total	48	100.0	100.0	

Table 27 represents the type of online graduate program in which the participants are enrolled. The majority of participants are enrolled in a blended program, which means that while mainly taught online, occasionally they will meet in a traditional setting. Eighty-five percent of all participants were enrolled in a blended program and 15% were enrolled in a program that was taught fully online.

Table 27

Frequency: Self-Assessment Rubric: Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fully Online	7	14.6	14.6	14.6
	Blended	41	85.4	85.4	100.0
	Total	48	100.0	100.0	

Table 28 represents the participant's expected project grade including a histogram (Figure 5) that depicts the average expected grade of 3.7. For this study, a standard 4.0 grading scale was used. The majority of participants are expecting an A for their project grade. For graduate programs, students must achieve an overall course grade of an A or a B to continue in the program. Sixty-eight percent of all participants expected to receive an A or a 4.0 on the projects for which they were self-assessing.

Table 28

Frequency: Self-Assessment Rubric: Expected Grade

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	2	4.2	4.9	4.9
	3.00	7	14.6	17.1	22.0
	3.50	3	6.3	7.3	29.3
	3.60	1	2.1	2.4	31.7
	4.00	28	58.3	68.3	100.0
	Total	41	85.4	100.0	
Missing	System	7	14.6		
Total		48	100.0		

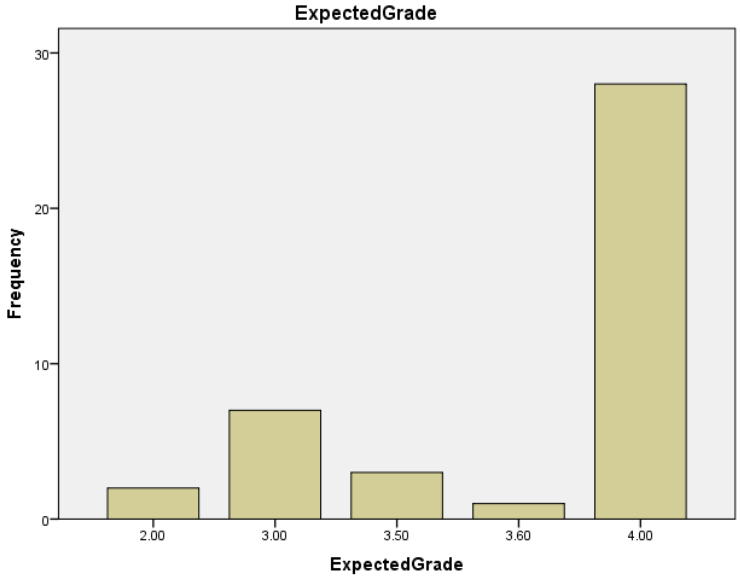

Figure 5. Bar Chart: Expected Grade.

Table 29 represents the stage of the project within their online graduate course in which the participants are self-assessing. The majority of participants were self-assessing based on a project that had been completed. Sixty-one percent of all participants had completed their project.

Table 29

Frequency: Self-Assessment Rubric: Stage of Course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Just Beginning	9	18.8	22.0	22.0
	Half Way Through	7	14.6	17.1	39.0
	Completed	25	52.1	61.0	100.0
	Total	41	85.4	100.0	
Missing	System	7	14.6		
Total		48	100.0		

Participants were asked if they were required to complete formative self-assessments in their online graduate programs. The responses are represented in Table 30 below. Fourteen of the participants, or 31%, responded that their professor did require formative self-assessment, and 31, or 69%, responded that their professor did not require formative self-assessment during their course. This question was used to operationalize the independent variable of formative self-assessment. The percentage of participants who responded that formative self-assessment was not required increased from the Likert Survey as some participants requested a definition of formative self-assessment. The percentage increased for those not being required to complete formative self-assessment with clarification of their understanding of formative self-assessment.

Table 30

Frequency: Self-Assessment Rubric: Self-Assessment Required

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self-Assessment Not Required	31	64.6	68.9	68.9
	Self-Assessment Required	14	29.2	31.1	100.0
	Total	45	93.8	100.0	
Missing	System	3	6.3		

Total	48	100.0

As shown in Table 31, student responses ranged from exemplary to unacceptable on the self-assessment rubric. The highest percentage of grades were all found relevant to student responses within (*meets standard*). The student responses relevant to meeting the standard reflected 58.5% for understanding of project guidelines, 41.5% for personal progress, 68.3% for project deadlines, 46.3% for project content, and 58.56% for organization and APA format. The highest percentage of grades within (*exemplary*) was relevant to project content, which represented 43.9%.

Table 31

Frequency: Self-Assessment Rubric

	Unacceptable	**Needs Work**	**Meets Standard**	**Exemplary**
Understanding of Project Guidelines	0.0%	7.3%	58.5%	34.1%
Personal Progress	2.4%	19.5%	41.5%	36.6%
Project Deadlines	0.0%	2.4%	68.3%	29.3%
Project Content	0.0%	9.8%	46.3%	43.9%
Organization and APA Format	0.0%	12.2%	58.5%	29.3%

N=43

A Cronbach's Alpha analysis was run to determine a scale of reliability (see Table 32). Given a general acceptable level of reliability of .70, it was determined that the Likert survey was reliable at .775.

Table 32

Cronbach's Alpha: Self-Assessment Rubric

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.775	.783	5

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' nominal scores on the Self-Assessment Requirement and participants' scaled scores regarding Expected Project Grades (see Table 33). A weak correlation that was not significant was found ($r(40) = .289$, $p<.05$). Self-assessment requirement is not related to project grades.

Table 33

Pearson r Correlation: Self-Assessment Rubric: Self-Assessment Required to Expected Grade

		SelfAssessReq	ExpectedGrade
SelfAssessReq	Pearson Correlation	1	.289
	Sig. (2-tailed)		.071
	N	45	40
ExpectedGrade	Pearson Correlation	.289	1
	Sig. (2-tailed)	.071	
	N	40	41

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' nominal scores on the Self-Assessment Requirement and participants' scaled scores regarding Personal Progress . A moderate, positive correlation was found ($r(40) = .370$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 34). Therefore, approximately 14% of the variance in students' personal progress scores on their

project is accounted for by the variance in whether formative self-assessment was required. Students who were required to conduct formative self-assessment were more likely to score higher relative to personal progress.

Table 34

Pearson r Correlation: Self-Assessment Rubric: Personal Progress to Self-Assessment Required

		Personal progress	SelfAssessReq
Personal progress	Pearson Correlation	1	.370*
	Sig. (2-tailed)		.019
	N	41	40
SelfAssessReq	Pearson Correlation	.370*	1
	Sig. (2-tailed)	.019	
	N	40	45

*. Correlation is significant at the 0.05 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' scaled scores on the self-assessment rubric. A moderate, positive correlation was found for each as shown below, indicating a significant linear relationship between the two variables (see Table 35). The only exception was found between project content and personal progress.

- Understanding of project guidelines and personal progress reflects ($r(40) = .450$, $p<.05$). Therefore, approximately 20% of the variance in students' responses relative to understanding of project guidelines is accounted for by the variance in students' responses relative to personal progress.
- Understanding of project guidelines and project deadlines reflects ($r(40) = .425$, $p<.05$). Therefore, approximately 18% of the variance in students' responses relative

to understanding of project guidelines is accounted for by the variance in students' responses relative to project deadlines.

- Understanding of project guidelines and project content ($r(40) = .466$, $p<.05$). Therefore, approximately 22% of the variance in students' responses relative to understanding of project guidelines is accounted for by the variance in students' responses relative to project content.
- Understanding of project guidelines and organization and APA format ($r(40) = .411$, $p<.05$). Therefore, approximately 17% of the variance in students' responses relative to understanding of project guidelines is accounted for by the variance in students' responses relative to organization and APA format.
- Personal progress and project deadlines ($r(40) = .347$, $p<.05$). Therefore, approximately 12% of the variance in students' responses relative to personal progress is accounted for by the variance in students' responses relative to project deadlines.
- Personal progress and organization and APA format ($r(40) = .546$, $p<.05$). Therefore, approximately 30% of the variance in students' responses relative to personal progress is accounted for by the variance in students' responses relative to organization and APA format.
- Project deadlines and project content ($r(40) = .399$, $p<.05$). Therefore, approximately 16% of the variance in students' responses relative to project deadlines is accounted for by the variance in students' responses relative to project content.
- Project deadlines and organization and APA format ($r(40) = .327$, $p<.05$). Therefore, approximately 11% of the variance in students' responses relative to project deadlines

is accounted for by the variance in students' responses relative to organization and APA format.

- Project content and organization and APA format ($r(40) = .522$, $p<.05$). Therefore, approximately 27% of the variance in students' responses relative to project content is accounted for by the variance in students' responses relative to organization and APA format.

Table 35

Pearson r Correlation: Self-Assessment Rubric

		Understanding of project guidelines	Personal progress	Project deadlines	Project content	Organization and APA format
Understanding of project guidelines	Pearson Correlation	1	.450**	.425**	.466**	.411**
	Sig. (2-tailed)		.003	.006	.002	.008
	N	41	41	41	41	41
Personal progress	Pearson Correlation	.450**	1	.347*	.295	.546**
	Sig. (2-tailed)	.003		.026	.061	.000
	N	41	41	41	41	41
Project deadlines	Pearson Correlation	.425**	.347*	1	.399**	.327*
	Sig. (2-tailed)	.006	.026		.010	.037
	N	41	41	41	41	41
Project content	Pearson Correlation	.466**	.295	.399**	1	.522**
	Sig. (2-tailed)	.002	.061	.010		.000
	N	41	41	41	41	41
Organization and APA format	Pearson Correlation	.411**	.546**	.327*	.522**	1
	Sig. (2-tailed)	.008	.000	.037	.000	
	N	41	41	41	41	41

**. Correlation is significant at the 0.01 level (2-tailed).

Non-Statistical Findings

Interviews were conducted during the research study to operationalize student academic achievement and self-efficacy. The following questions were asked: *1) Are you required to*

complete formative self-assessment in your online graduate courses? If so, how is that conducted? If not, do you believe that this would be a benefit to you academically?, 2) Even if not required, do you conduct any form of formative self-assessment?, 3) Do you conduct any form of peer-reviewed assessment?, 4) Do you believe that formative assessment builds your confidence in your ability to complete your online graduate course assignments successfully?, and 5) What do you believe would be the most effective form of formative assessment to be conducted during your online graduate courses? Frequencies of responses were calculated from the interviews. Responses to question four have been recorded under hypothesis three. There was a 96% participation rate on the interviews. The interviews were recorded via an online program called Zoom. The researcher transcribed the interviews and forwarded the transcriptions to the participant for their approval, to add validity to the qualitative data secured.

Complete interview responses reflect significant trends (see Table 36). The trend that emerged during the study was a general feeling that formative assessment does build confidence in student's abilities to complete their online graduate course assignments successfully and that formative assessment is needed from professors prior to the submission of final assignments. Another significant trend was that formative self-assessment was not required in the majority of graduate courses, but students believed that this would benefit them academically. Additionally, the majority of graduate students do conduct some form of formative self-assessment on an informal basis; but they often utilize the course rubric.

Table 36

Frequency: Interview Question #1: Are you required to complete formative self-assessment in your online graduate courses?

Responses	**Frequency**
No	31
Yes	14

N = 43

Highlights of participants' one-on-one interview responses when asked, *Are you required to complete formative self-assessment in your online graduate courses…,* are reflected below. For complete interview responses, see Appendix E.

Table 37

Interview Response: Question #1: Are you required to complete formative self-assessment in your online graduate courses?

"I have completed a self-assessment. Yes, depending on the course, yes. I have done some assessment for my doctoral program classes."
"Not self-assessments."
"I don't think it's ever been a formal requirement. Yeah, I think maybe it's been implied, or maybe some tools have been suggested, but it's never been required."
"Formative self-assessments. No."

N=43

Table 38

Frequency: Interview Question #1a: If so, how is that conducted?

Responses	**Frequency**
Rubrics	3
Reflecting	5
Written response/Discussion questions	3
Part of the process	1

N = 43

Highlights of participants' one-on-one interview responses when asked, *If so, how is that conducted…,* are reflected below. For complete interview responses, see Appendix E.

Table 39

Interview Responses: Question #1a: If so, how is that conducted?

"A written response to an assignment."

"Like mostly little quizzes and we've had like self-reflections like an online diary for one of our courses as well, which was kind of a nice thing to do. It helps us reflect a little bit about our learning. Yeah, so, mainly these two. I can't think of any others right now."
"I've only taken one class so far. And, we were provided with a rubric and we were instructed to utilize the rubric to help us to complete the assessment as well as to know how to complete the assessment. So, I would say that a rubric counts as a formative assessment."

N=43

Table 40

Frequency: Interview Question #1b: If not, do you believe that this would be a benefit to you academically, if it were required?

Responses	**Frequency**
Yes	25
Might be helpful/Not necessarily/Not sure	4
Yes, in an MA program	1
No	1

N = 43

Highlights of participants' one-on-one interview responses when asked, *If not, do you believe that this would be a benefit to you academically, if it were required…,* are reflected below. For complete interview responses, see Appendix E.

Table 41

Interview Responses: Question #1b: If not, do you believe that this would be a benefit to you academically, if it were required?

"Yeah, because when I do it for myself, you know, I do see the benefits of it. So, if it was required, then I'd do it more often maybe."
"It probably would be, but I think, I think since we're all adults, at this level of education that hopefully we can all put the onus on ourselves to do it and not necessarily be mandated. So, rather than it being. I think it would be really good in a master's program for it to be mandated, but not necessarily here."
"I'm not sure because I think either way, we have to do it on our own. So, like to keep up with all the assignments and everything."
"I think so. I think any type of like reflection, or like thinking back on our own work, or everything we've done is definitely good for everyone. Especially, with everything we're learning. Yeah."
"I think it would. I know that I try to use it just myself. I try to implement it, but I think if it were required, then I would actually do it more often and I think it would help out a lot."

N=43

Table 42

Frequency: Interview Question #2: Even if not required, do you conduct any form of formative self-assessment on your own?

Responses	**Frequency**
Yes	2
No	14
Rubrics	14
Feedback	3
Research partner/Other classmates	3
Syllabus	2
Checklists	1
Examples	1
Reflections	1
Monitoring myself	1
Strategies modeled	1
Quizzes	1
Survey at the end of the course	1
Application to teaching practice	1

N = 43

Highlights of participants' one-on-one interview responses when asked, *Even if not required, do you conduct any form of formative self-assessment…,* are reflected below. For complete interview responses, see Appendix E.

Table 43

Interview Responses: Question #2: Even if not required, do you conduct any form of formative self-assessment on your own?

"Yes. The first thing I will always do is download a copy of the rubric that's provided and basically make a bullet point check list, right. "Here's where we need to be. Here's where I am." Starting from a blank slate, "Here's where I want to be. Let's make sure we check off all those boxes in an academic way." But, you know, obviously not making it so non-personal, you know, in writing and those types of things. This as a guide."
"Absolutely. I don't personally think that anybody in an online program would be successful if they weren't considering their own learning and assessing how they're progressing, and making sure they're looking at rubrics to assess where they stand. And, making sure that they're looking at the syllabus to look forward, see what's in front of them, reviewing what they already knew. So, in an online program, you wouldn't be successful without self-assessment."
"I definitely look at my teacher comments, and I look at the rubric, and I try and determine what they're trying to think when they wrote the comments down and then how do I view the rubric, you know. And, I

just try to do that comparative analysis to see kind of how I'm doing and then, I also too look at previous papers from the beginning of the program to know where I am now. So, I definitely see a little bit of difference."
"No, but I probably should. Then maybe my life wouldn't be so difficult."
"Not really. I mean, kind of, I make like checklists for myself and things like that, but nothing super formal."
"No, not on my own. Just for fun, no."

N=43

Table 44

Frequency: Interview Question #3: Do you conduct any form of peer-reviewed assessment?

Responses	**Frequency**
Yes	16
No	15
Research partner	3
Check for understanding/Share ideas with classmates	6
Meet weekly with a few cohort members	1
Discussion boards	2
No, except writing a book together in one course	1

N=43

Highlights of participants' one-on-one interview responses when asked, *Do you conduct any form of peer-reviewed assessment…,* are reflected below. For complete interview responses, see Appendix E.

Table 45

Interview Responses: Question #3: Do you conduct any form of peer-reviewed assessment?

"Yes, we have a partner that we work with and we send our assignments back and forth for review and to read them as far as like the research papers. Is that what you're referring to? And, then we give each other recommendations or what we think that would flow better and that sort of thing."
"Peer-reviewed assessment. Well, what happens is that in some of our classes, but not all of them, we've been required to make comments on discussions that have been posted. So, in a sense, that's kind of like peer-reviewed. In some of the classes we've also had projects where we have to do grade items and then we discuss one another's projects. Either things that you've done on your own and then you present it to your class and they give you feedback or we've been put into groups and then you work that was as well. So, I would say that we have done that, yeah."

"No, the only peer-review we would do is in our, discussion posts. So, I don't know if they're really assessments or reviewing, but other than that, that would be the only official thing we do. Like, I'll share my work with people in the cohort, but it's definitely not official, but we do give each other feedback on that."
"Not so much, but if it's required in the class, then I've done that, but personally, I haven't done that."

N=43

Table 46

Frequency: Interview Question #5: What do you believe would be the most effective form of formative assessment to be conducted during your online graduate courses?

Responses	**Frequency**
Feedback (professor/peers/project stages)	24
Rubrics	7
Samples	2
Mid-course survey on understanding and progress	1
Pre and post survey to show growth	1
End of course survey/reflection	5
Discussion posts	2
Synchronous time for questions	2
Grades kept current	1
Unsure	1

N=43

Highlights of participants' one-on-one interview responses when asked, *Do you conduct any form of peer-reviewed assessment…,* are reflected below. For complete interview responses, see Appendix E.

Table 47

Interview Responses: Question #5: What do you believe would be the most effective form of formative assessment to be conducted during your online graduate courses?

"I think the most effective is just the ongoing feedback and being able to turn in a portion of the assignment early, get the feedback, and then be able to have the chance to revise it. I've never done a paper like we've done in this last class and I was really scared going through it, but really proud of myself at the end. So, just that kind of feedback really helped me a lot."
"I would say the exact format of last semester's course with the research paper. I was 100% overwhelmed in the very beginning looking at the amount of pages, the amount of work, I didn't know what a literature review was. I thought it was the same as an annotated bibliography, and throughout the weeks of having those deadlines to turn them in, and then to get the feedback. There were things that were being caught

that I didn't myself catch. There's so much. And, I was even getting my dates wrong just with APA and my bibliography. So, I was with different dates, when my professor pointed it out, I was like, 'How did I not know that?' And, so something that I overlooked because I was analyzing the grammar or looking at the little pieces. So, it was really helpful to have another eye to look at it. And, the feedback of, 'Okay, I can improve from here.' It wasn't just, 'This is your grade and you're done.' I am blown away, 'cause for me, like I didn't think that I was ever gonna get my masters just because I'm not a good test taker. If you've noticed my test, the one exam we had in our last course, I think I got like a low C. 'Cause it's the multiple choice where I go, "Oh, I can choose this or this could be this." And, my mind goes back and forth and I argue for both answers. And, so, to be in the program and to feel like I'm actually finally, like in the beginning, I feel like when I talked to you, I was kind of nervous like about what to expect, 'Is this hard?' Like, 'Is it doable?' And, I feel more confident in my ability that I'm like even thinking maybe one day I'll go further than this in school, which never crossed my mind. This is really a game changer for how this formative assessment has been for me."

"I think an effective formative assessment would be to receive feedback from the professor on the assignment. Feedback where they give you one area of praise on an assignment and one area for growth. So, I think having the ability and being encouraged to share a portion or all of an assignment prior to its due date to receive feedback from the professor. Maybe one area of strength and one area of growth I think would be really beneficial, and especially in the early parts of a course. Let's say in the first three weeks. It has been offered by a professor, I would say, anecdotally. If that makes sense. Or, just like as her policy and not necessarily a university policy to encourage that. I think specifically with something like, let me give you an example, like APA when students are entering a graduate program. I think it would be really beneficial in the early coursework if students could have individual feedback on APA related issues or corrections early on. It helps the learning process more than a guidebook or a website."

N=43

Findings for Hypothesis Three: Relationship Between Formative Self-Assessment to Self-Efficacy

Statistical Findings

The third hypothesis stated that there would be a positive relationship between formative self-assessment and self-efficacy in online graduate education courses. Likert surveys were first analyzed using descriptive statistics.

Table 48 and a histogram (Figure 6) represent the age of the participants; the average age of participants was 34 years of age. For this study, age ranges were delineated in 10-year increments.

Table 48

Frequency: Likert Survey: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25.00	20	44.4	47.6	47.6
	35.00	12	26.7	28.6	76.2
	45.00	5	11.1	11.9	88.1
	55.00	4	8.9	9.5	97.6
	60.00	1	2.2	2.4	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

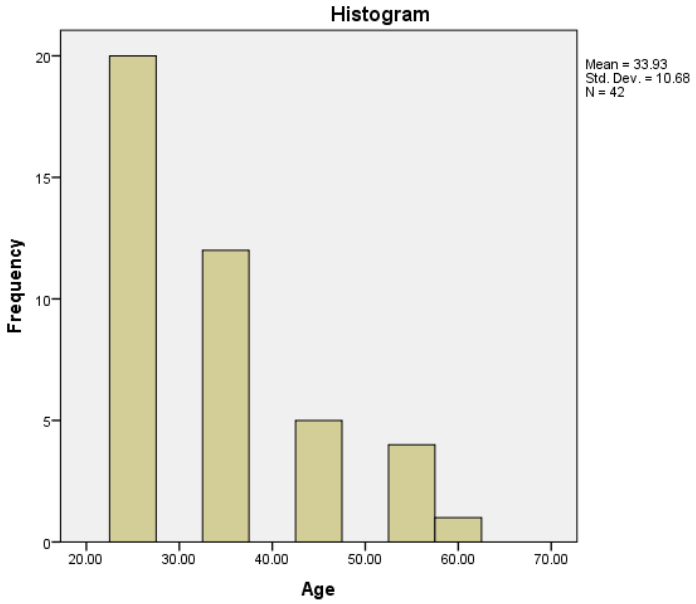

Figure 6. Histogram: Likert Survey: Age distribution of sample (N=42).

Table 49 represents the gender of the participants. The majority of participants were female, with 35 out of 45 participants, or 83% being female. Seven participants, or 17% of participants were male. This follows the norm for the field of education.

Table 49

Frequency: Likert Survey: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	7	15.6	16.7	16.7
	Female	35	77.8	83.3	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

Table 50 represents the years that the participants have been teaching. The majority of participants have been teaching for 5 years or less, which represents 67% of all participants. As many credential programs have graduate degrees embedded, many teachers are seeking graduate degrees within 5 years of completing their credentials. For this study, ranges were delineated in 5-year increments.

Table 50

Frequency: Likert Survey: Years Taught

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.50	28	62.2	66.7	66.7
	8.00	5	11.1	11.9	78.6
	13.00	1	2.2	2.4	81.0
	18.00	6	13.3	14.3	95.2
	23.00	1	2.2	2.4	97.6
	28.00	1	2.2	2.4	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

Table 51 and a bar chart (Figure 7) represent the years that the participants have been teaching. The majority of participants hold a special education credential, which represents 57%

of all participants. This is due to those universities and students who agreed to participate in the study.

Table 51

Frequency: Likert Survey: Credential

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary	7	15.6	16.7	16.7
	Secondary-English	2	4.4	4.8	21.4
	Secondary-Math	1	2.2	2.4	23.8
	Secondary-Social Studies	1	2.2	2.4	26.2
	Secondary-Science	1	2.2	2.4	28.6
	Secondary-Other	1	2.2	2.4	31.0
	Special Education	24	53.3	57.1	88.1
	None	5	11.1	11.9	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

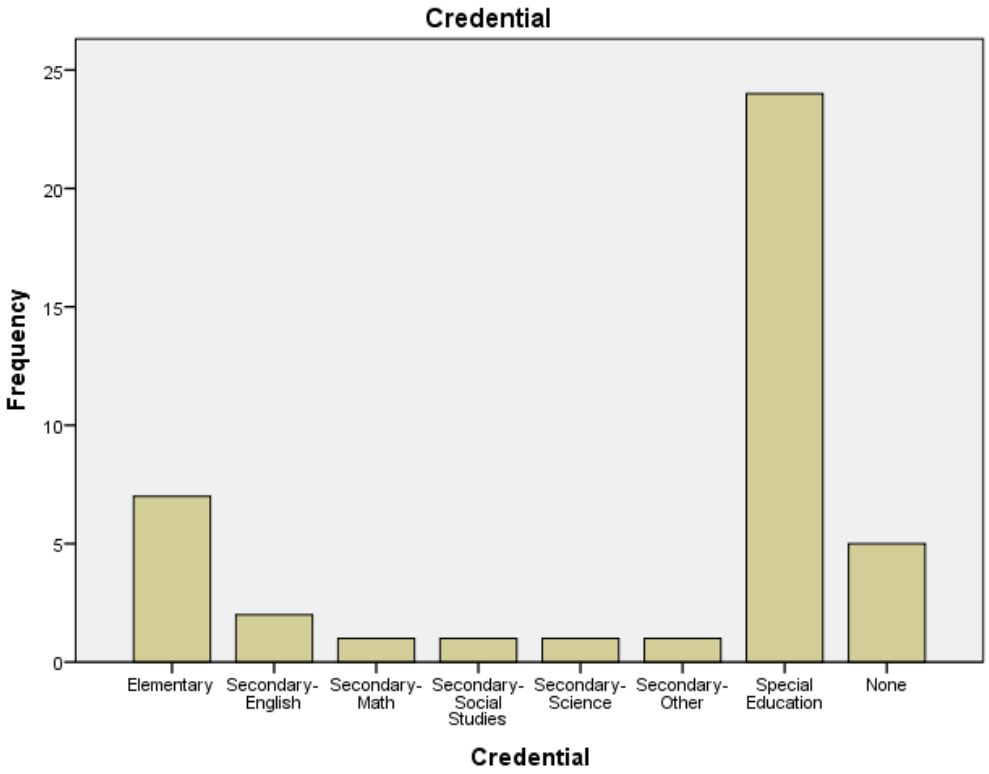

Figure 7. Bar Chart: Likert Survey: Type of credential held by participants.

Table 52 and a bar chart (Figure 8) represent the number of courses the participants have completed within their online graduate program. Thirteen of the participants have completed more than ten courses, which represents 32%. Additionally, ten of the participants have completed three to four courses, which represents 24%. The remaining percentage reflects 6 participants having completed five to six courses, or 15%, another 6 participants having completed seven to eight courses, or 15%, 5 participants just beginning their program with one to two courses completed, or 12% and 1 participant having completed nine to ten courses, which represents 2%.

Table 52

Frequency: Likert Survey: Courses Done

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One-Two	5	11.1	12.2	12.2
	Three-Four	10	22.2	24.4	36.6
	Five-Six	6	13.3	14.6	51.2
	Seven-Eight	6	13.3	14.6	65.9
	Nine-Ten	1	2.2	2.4	68.3
	More than Ten	13	28.9	31.7	100.0
	Total	41	91.1	100.0	
Missing	System	4	8.9		
Total		45	100.0		

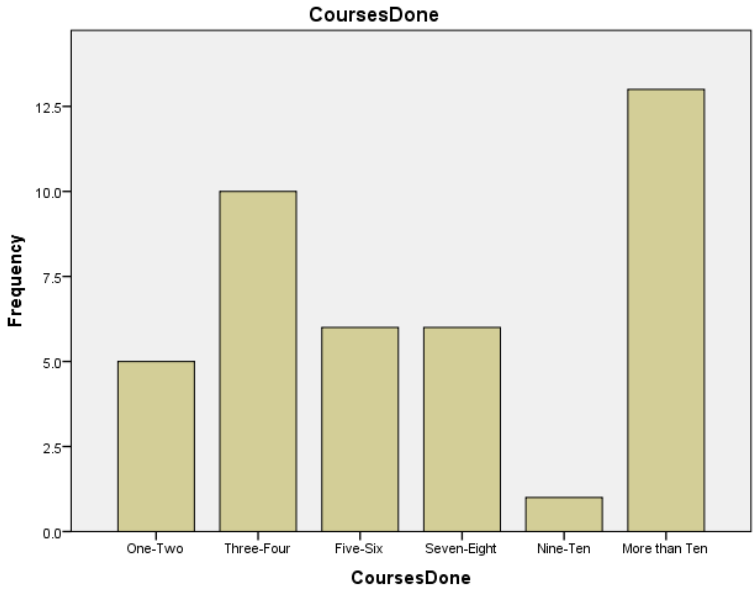

Figure 8. Number of courses completed in the graduate program.

Table 53 represents the type of online graduate program in which the participants are enrolled. The majority of participants are enrolled in a blended program, which means that while mainly taught online, occasionally they will meet in a traditional setting. Eighty-eight percent of all participants were enrolled in a blended program and 12% were enrolled in a program that was taught fully online.

Table 53

Frequency: Likert Survey: Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fully Online	5	11.1	11.9	11.9
	Blended	37	82.2	88.1	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

Participants were asked if they were required to complete formative self-assessments in their online graduate programs. The responses are represented in Table 54 below. Twenty-one of the participants, or 50%, responded that their professor did require formative self-assessment,

and the other 50% responded that their professor did not require formative self-assessment during their course. This question within the Likert Survey was used to operationalize the independent variable of formative self-assessment. As the resulting response was 50%, a relevant base was evident to test for relationships between the independent variable of formative self-assessment and assignments.

Table 54

Frequency: Likert Survey: Self-Assessment Required

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self-Assessment Not Required	21	46.7	50.0	50.0
	Self-Assessment Required	21	46.7	50.0	100.0
	Total	42	93.3	100.0	
Missing	System	3	6.7		
Total		45	100.0		

Likert surveys were first analyzed using descriptive statistics. As shown in Table 55, student responses ranged from strongly agree to strongly disagree depending upon the question asked. The highest level of negative feelings (*strongly disagree and disagree)* were found relevant to graduate students disagreeing with not being satisfied with the amount of self-assessment they undertook reflecting 57.1% stating disagree and 9.5% stating strong disagree. The highest level of positive feelings (*strongly agree and agree*) were found relevant to graduate student beliefs that by conducting self-assessment that they can grow in their capabilities with 69.0% stating strongly agree and 28.6% stating agree. Additional positive feelings were found relevant to graduate student beliefs that self-assessment allowed them to determine the necessary steps to successfully achieve the course objectives with 59.5% stating strongly agree and 38.1% stating agree; that their ability grows with effort with 61.0% stating strongly agree and 39.0%

stating agree; and that they are confident that they will achieve their goals that they set for themselves with 73.8% strongly agree and 26.2% stating agree.

Table 55

Frequency: Likert Survey: Self Efficacy

Likert Item	Strongly Agree	Agree	Disagree	Strongly Disagree
My professors do not require formative self-assessment during their course…	4.8%	42.9%	42.9%	9.5%
I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives…	59.5%	38.1%	2.4%	0.0%
I believe that by conducting self-assessment that I can grow in my capabilities…	69.0%	28.6%	2.4%	0.0%
I am not satisfied with the amount of self-assessment I undertake…	7.1%	26.2%	57.1%	9.5%
I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well...	47.6%	42.9%	9.5%	0.0%
I believe that my ability grows with effort...	61.0%	39.0%	0.0%	0.0%
I am confident that I will achieve the goals that I set for myself...	73.8%	26.2%	0.0%	0.0%
When I am struggling with my course content, I focus on my progress rather than feeling discouraged...	19.0%	73.8%	7.1%	0.0%

N=42

A Cronbach's Alpha analysis was run to determine a scale of reliability (see Table 56). Given a general acceptable level of reliability of .70, and 45 participants, it was determined that the Likert survey was reliable at .628.

Table 56

Cronbach's Alpha: Likert Survey

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.628	.641	12

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' nominal scores on the Self-Assessment Requirement and participants' scaled scores regarding Self-Efficacy (see Table 57). A weak correlation that was not significant was found ($r(40) = -.154$, $p<.05$). Self-assessment requirement is not related to assignments.

Table 57

Pearson r Correlation: Likert Survey: Self-Assessment Required to Self-Efficacy

		SelfAssessReq	SE_mean
SelfAssessReq	Pearson Correlation	1	-.154
	Sig. (2-tailed)		.329
	N	42	42
SE_mean	Pearson Correlation	-.154	1
	Sig. (2-tailed)	.329	
	N	42	42

SE = Self-Efficacy

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives…* and participants' responses to the Likert item, *I believe that by conducting self-assessment that I can grow in my capabilities...* A moderate, positive correlation was found ($r(40) = .424$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 58). Therefore,

approximately 18% of the variance in students' belief that self-assessment allows them to determine the necessary steps to successfully achieve the course objectives is accounted for by the variance in students' belief that conducting self-assessment can grow their capabilities. Students are more likely to have similar beliefs about self-assessment growing their capabilities and determining the necessary steps to successfully achieving their course objectives.

Table 58

Pearson r Correlation: Likert Survey: Achieving Course Objectives to Conducting Self-Assessment Grows Capabilities

		I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...	I believe that by conducting self-assessment that I can grow in my capabilities...
I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...	Pearson Correlation	1	.424**
	Sig. (2-tailed)		.005
	N	42	42
I believe that by conducting self-assessment that I can grow in my capabilities...	Pearson Correlation	.424**	1
	Sig. (2-tailed)	.005	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives…* and participants' responses to the Likert item, *I believe that my ability grows with effort...* A moderate, positive correlation was found ($r(40) = .366$, $p<.05$), indicating a significant linear relationship between

the two variables (see Table 59). Therefore, approximately 13% of the variance in students' belief that self-assessment allows them to determine the necessary steps to successfully achieve the course objectives is accounted for by the variance in students' belief that their ability grows with effort. Students are more likely to have similar beliefs about self-assessment determining the necessary steps to successfully achieving their course objectives and that their ability grows with effort.

Table 59

Pearson r Correlation: Likert Survey: Achieving Course Objectives to Ability Grows Effort

		I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...	I believe that my ability grows with effort...
I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...	Pearson Correlation	1	.366*
	Sig. (2-tailed)		.019
	N	42	41
I believe that my ability grows with effort...	Pearson Correlation	.366*	1
	Sig. (2-tailed)	.019	
	N	41	41

*. Correlation is significant at the 0.05 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I believe that my ability grows with effort…* and participants' responses to the Likert item, *I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well…* A moderate, positive correlation was found ($r(40) = .524$, $p<.05$), indicating a significant linear relationship

between the two variables (see Table 60). Therefore, approximately 27% of the variance in students' belief that their ability grows with effort is accounted for by the variance in students' satisfaction with the amount of effort they are putting forth to complete assignments well. Students are more likely to have similar beliefs about their ability growing with effort and their satisfaction with the amount of effort they are putting forth to complete their assignments well.

Table 60

Pearson r Correlation: Likert Survey: Ability Grows Effort to Amount of Effort Towards Completing Assignments Well

		I believe that my ability grows with effort...	I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well...
I believe that my ability grows with effort...	Pearson Correlation	1	.524**
	Sig. (2-tailed)		.000
	N	41	41
I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well...	Pearson Correlation	.524**	1
	Sig. (2-tailed)	.000	
	N	41	42

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I believe that my ability grows with effort…* and participants' responses to the Likert item, *I believe that by conducting self-assessment that I can grow in my capabilities…* A moderate, positive correlation was found ($r(40) = .338$, $p<.05$),

indicating a significant linear relationship between the two variables (see Table 61). Therefore, approximately 11% of the variance in students' belief that their ability grows with effort is accounted for by the variance in students' belief that conducting self-assessment can grow their capabilities. Students are more likely to have similar beliefs about their ability growing with effort and growing their capabilities by conducting self-assessment.

Table 61

Pearson r Correlation: Likert Survey: Self-Assessment Grows Capabilities to Ability Grows Effort

		I believe that by conducting self-assessment that I can grow in my capabilities...	I believe that my ability grows with effort...
I believe that by conducting self-assessment that I can grow in my capabilities...	Pearson Correlation	1	.338*
	Sig. (2-tailed)		.031
	N	42	41
I believe that my ability grows with effort...	Pearson Correlation	.338*	1
	Sig. (2-tailed)	.031	
	N	41	41

*. Correlation is significant at the 0.05 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives…* and participants' responses to the Likert item, *I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well…* A moderate, positive correlation was found ($r(40) = .462$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 62). Therefore, approximately 21% of the variance in students' belief that self-

assessment allows them to determine the necessary steps to successfully achieve the course objectives is accounted for by the variance in students' satisfaction with the amount of effort they are putting forth to not only complete the assignments, but to complete them well. Students are more likely to have similar beliefs about the use of self-assessments to successfully achieve course objectives and their satisfaction with their efforts to complete assignments well.

Table 62

Pearson r Correlation: Likert Survey: Achieving Course Objectives to Effort Towards Completing Assignments Well

		I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...	I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well...
I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives...	Pearson Correlation	1	.462**
	Sig. (2-tailed)		.002
	N	42	42
I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well...	Pearson Correlation	.462**	1
	Sig. (2-tailed)	.002	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I am confident that I will achieve the goals that I set for myself…* and participants' responses to the Likert item, *I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them*

well… A moderate, positive correlation was found ($r(40) = .513$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 63). Therefore, approximately 26% of the variance in students' confidence that they will achieve the goals that they have set for themselves is accounted for by the variance in students' satisfaction with the amount of effort they are putting forth to not only complete the assignments, but to complete them well. Students are more likely to have similar beliefs about their confidence in achieving their goals and their satisfaction with their efforts to complete assignments well.

Table 63

Pearson r Correlation: Likert Survey: Effort Towards Completing Assignments Well to Achievement of Goals

		I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well...	I am confident that I will achieve the goals that I set for myself...
I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well...	Pearson Correlation	1	.513**
	Sig. (2-tailed)		.001
	N	42	42
I am confident that I will achieve the goals that I set for myself...	Pearson Correlation	.513**	1
	Sig. (2-tailed)	.001	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I believe that formative feedback from my*

professor aids in my academic achievement… and participants' responses to the Likert item, *When I am struggling with my course content, I focus on my progress rather than feeling discouraged…* A moderate, positive correlation was found ($r(40) = .359$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 64). Therefore, approximately 13% of the variance in students' belief that formative feedback from their professor aids in their academic achievement is accounted for by the variance in students' responses stating that when they are struggling with course content, they focus on progress rather than feeling discouraged. Students are more likely to have similar beliefs about formative assessment aiding in their academic achievement and their focus on progress when struggling with course content.

Table 64

Pearson r Correlation: Likert Survey: Professor Feedback to Focus on Progress

		I believe that formative feedback from my professor aids in my academic achievement...	When I am struggling with my course content, I focus on my progress rather than feeling discouraged...
I believe that formative feedback from my professor aids in my academic achievement...	Pearson Correlation	1	.359*
	Sig. (2-tailed)		.019
	N	42	42
When I am struggling with my course content, I focus on my progress rather than feeling discouraged...	Pearson Correlation	.359*	1
	Sig. (2-tailed)	.019	
	N	42	42

*. Correlation is significant at the 0.05 level (2-tailed).

A Pearson r correlational coefficient was calculated to determine potential relationship between participants' responses to the Likert item, *I regularly utilize course rubrics to self-assess my assignments before completing…* and participants' responses to the Likert item, *I am satisfied with the amount of self-assessment I undertake…* A moderate, positive correlation was found ($r(40) = .367$, $p<.05$), indicating a significant linear relationship between the two variables (see Table 65). Therefore, approximately 13% of the variance in students' belief that formative feedback from their professor aids in their academic achievement is accounted for by the variance in students' responses stating that when they are struggling with course content, they focus on progress rather than feeling discouraged. Students are more likely to have similar beliefs about formative assessment aiding in their academic achievement and their focus on progress when struggling with course content

Table 65

Pearson r Correlation: Likert Survey: Rubrics for Self-Assessment to Amount of Self-Assessment Undertaken

		I regularly utilize course rubrics to self-assess my assignments before completing...	I am satisfied with the amount of self-assessment I undertake...
I regularly utilize course rubrics to self-assess my assignments before completing...	Pearson Correlation	1	.367*
	Sig. (2-tailed)		.017
	N	42	42
I am satisfied with the amount of self-assessment I undertake...	Pearson Correlation	.367*	1
	Sig. (2-tailed)	.017	
	N	42	42

*. Correlation is significant at the 0.05 level (2-tailed).

Non-Statistical Findings

Interviews were conducted during the research study to operationalize student academic achievement and self-efficacy. The following question was asked related to self-efficacy, *Do you believe that formative assessment builds your confidence in your ability to complete your online graduate course assignments successfully.* Frequencies of responses were calculated from the interviews (see Table 66). The overall trend that emerged from this question was that the majority of students believe that formative self-assessment builds their confidence in their ability to complete their graduate course assignments successfully.

Table 66

Frequency: Interview Question #4: Do you believe that formative assessment builds your confidence in your ability to complete your online graduate course assignments successfully?

Responses	**Frequency**
Yes	38
No	1
Yes, if done well.	1
Maybe/It would depend	4

N = 43

Table 67

Interview Responses: Question #4: Do you believe that formative assessment builds your confidence in your ability to complete your online graduate course assignments successfully?

"Absolutely, because you know that you're on the right path by getting the feedback and it definitely improves confidence in your final project or your final work."
"100%. I was a student that in my undergrad, I got Cs and Ds. I was told I couldn't start the program, because my grades were so low. And, in my credential program, I pushed myself to graduate with a 3.99. And, I think I got a C in like a .5 class and then, even now, I feel like I am excelling more than I thought I could."
"Yes, the answer is 100% yes. It's a necessity. It's an interesting concept because I don't think that any of the online courses have taught or brought up formative self -assessment and, I'm thinking, I'm guessing that the weekly discussion boards and the weekly assignments are the professor's formative assessment on

the level of success that we are doing throughout the week. I personally haven't been failing or failed a class, but I did have one class where I struggled, that was really hard for me and I needed a lot of extra support, and I just felt like I wasn't getting the support that I needed from the professor because he didn't get back to me. So, the answer to the question - is formative assessment helpful for an online person, yes. So, as far some self-formative assessment, it's imperative. I would like a little bit more formative assessment, checking for understanding, and feedback from the professors. To help me to be more successful in an online program."
"I think it depends. I think it can. It certainly can. Yeah, I think if it's done well and it's done right, then yes, it definitely can help you."
"Yes. I think that it sets clear expectations. I know I've been surprised when I follow the rubric and somehow I get a different grade. So, I think having that sets clear expectations on both ends."
"Yeah, I think it does. I think it's a good way to monitor my own progress. I think it makes it very clear to see, you know, what I still need to work on or what I've already accomplished."

N=43

Open-ended responses were received from the graduate students related to formative assessment and assignments. Specifically, students were asked about the process that they used in completing their course assignments (see Tables 68 – 72). One pattern that emerged was referring to formative assessment being critical and crucial. A second pattern that emerged was formative assessment to check for and clarify understandings. A third pattern in the open-ended survey responses showed that students believe that formative self-assessment allows students to monitor their progress and learning.

Table 68

Likert Survey Open Ended Question Responses: Students Completed One-Two Courses in Program: Please share your beliefs about the use of formative assessment.

Participant Responses Fitting the Pattern: "Formative Assessment is Critical and Crucial"
"I believe that self-assessment is effective and a tool that all students should implement in their studies. The first draft of any assignments should be revised before turning it in."
"I believe that formative assessments are critical, timely data/information which allows for immediate intervention or enrichment."
"Allows you have appropriate data to make decisions."
"It's very important because it can guide you in making sure the goals or objectives are met. It can also tell you if any adjustments need to bed made to the instruction."

"As a teacher, formative assessments is crucial to my instruction. After instruction, I use formative assessments to reflect on instruction going forwards. Formative assessments help me decide if my students need more instruction, if they are ready to move on, of I need to present the information in a different way so they can understand it better."

N=40

Table 69

Likert Survey Open Ended Question Responses: Students Completed Three-Four Courses in Program: Please share your beliefs about the use of formative assessment.

Participant Responses Fitting the Pattern: "Formative Assessment to Check for and Clarify Understandings"
"Formative feedback is an effective method for clarifying any misunderstandings that students may have. Many times, formative feedback helps lower the stress level of students because they are able have a clearer picture of what they are expected to complete. Also, when the instructor is able to provide more feedback, there is a better possibility of higher quality work."
"I think it is wise to self-assess in order be successful. I don't always have time to do everything to the best of my ability, but at least I know when/how/where I need to step up or where it's ok to give myself some slack."
"As with anything, formative self-assessment is useful if you utilize and continue to utilize throughout the process of class offerings. Sadly, it feels that people get bogged down with minutia in their day to day lives and do not necessarily always understand the importance of the self-assessment process."
"I feel that formative self-assessment is a good way to adjust your teaching. For example, in my HR course, the professor reads our Discussion Board Posts and Responses, then at our online class she spends some time to share her feedback on topics that come up on our DB posts that help us as students to reflect on our responses. I feel that her class is organic and is led by the needs of her students."
"I believe that formative self-assessments are important in order to check for understanding and to be able to make sure (as a teacher) that the goals/standards are being met."
"I believe that formative self-assessment is a good way to encourage self-reflection and metacognition. I believe there are positive learning outcomes associated with self-assessment."
"I think that it serves an accountability purpose and measures a pre and post instruction. However, I don't think it completely gets to the root of understanding how much a person actually knows. Sometimes, these questions are confusing. If done correctly and with substance, it's a good measure of knowledge."
"I believe that it is important to be self-reflective on the courses I complete and how I did on assignments. It helps me to reflect on my strengths, as well as my areas of need."
"It gives me the confidence to guide myself to complete my assignments."
"I believe formative self-assessments can be extremely beneficial because it allows students to become aware of his/her own learning and progress towards an academic goal or how he/she is doing in a class."

N=40

Table 70

Likert Survey Open Ended Question Responses: Students Completed Five-Six Courses in Program: Please share your beliefs about the use of formative assessment.

Participant Responses Fitting the Pattern: Formative Self-Assessment to Monitor Progress and Learning
"Very important; it allows us to self-evaluate where we are at as students to determine if we are making any progress on the short and long-term goals we have in our academic work."
"I do believe formative self-assessment is essential in bettering ones skills. However, I do find it difficult to make the time to self-assess and use it in my daily life."
"Formative self-assessment is very important because it keeps me in charge of my own learning. I am constantly tracking how much information I retain or didn't and go back and check to see if I understood what was taught. I do believe that it is important for students to self-assess because it gives them more confidence in what they are learning, but I also think that strategies in self-assessment should be taught."
"I think students really only check themselves when they are self-motivated. Many students probably won't do that. Although I would also venture a guess that the same students who are in graduate studies would be more likely to be motivated."
"I have a positive view with regards to formative self-assessments. They allow for reflection and academic growth. It allows me to monitor and see what works and what I need to improve on."

N=40

Table 71

Likert Survey Open Ended Question Responses: Students Completed Seven-Nine Courses in Program: Please share your beliefs about the use of formative assessment.

Participant Responses Fitting the Pattern: "Formative Self-Assessment to Check Understanding"
"I believe that the most useful form of education is that which teaches a student to become self-reflective as it is a skill that is crucial in continuing to learn after leaving school."
"I believe formative self-assessment is fundamental as it allows students to check their level of understanding about the material throughout the course. Hence, it promotes metacognition, as students become more aware of their weaknesses or gaps in their knowledge, they can take corrective action."
"It is very useful because it allows the instructor to find out if the message is being received, and to adjust the delivery for those that do not get it."
"If the participant is being thoughtful and reflective about their responses, I feel that formative self-assessments are an effective measure to gather data."
"I believe formative self-assessment are necessary to check your comprehension and share common learning ideas with classmates and to reflect on learning objectives. Also, it helps to adjust lessons and get new resources."
"I believe the use of formative self-assessments can be beneficial when trying to learn about areas of strength and need."

"I don't think I have a lot of experience of formative -self assessment. However, I'm sure that self-assessment is beneficial in helping me to improve/ reach my professional and student objectives."

N=40

Table 72

Likert Survey Open Ended Question Responses: Students Completed More Than Nine Courses in Program: Please share your beliefs about the use of formative assessment.

Participant Responses Fitting the Pattern: "Formative Assessment to Monitor and Check for Understanding"
"Formative self-assessments are helpful for reflection, but sometimes I don't really like them. I don't really like grading my work--it feels somewhat arrogant because, obviously, I want an 'A.' But sometimes, having to give myself an 'A' is weird. I remember in undergrad, one of my professors asked us to grade ourselves, and I gave myself a 'B' just because I felt like an arrogant jerk giving myself an 'A'--but I worked extremely hard that semester and I should have earned an 'A.' However, the professor gave us the grade we said we deserved. Ugh. So I received a 'B' in that class all because I wasn't gutsy enough to say that I deserved an 'A.' Haha. This is probably more information than you want to hear, but hopefully this sheds some light on a different perspective."
"I believe that formative self-assessments are essential in learning through an online platform. The need to check yourself for understanding helps to ensure success."
"I think that it is an important part of the learning process. It allows for students to go deeper in the learning process."
"I deeply believe we all need to do self-assessment as a practice on a daily basis. We all need to measure our impact in all areas of our life. As far as my program goes, it helps to talk with my classmates and ask for clarification - which helps with my assessment of the direction I am going (either the right way or the wrong way). It helps when professors give grades. That assures me if I am on the right track, or I need to change a strategy. I reflect on my obligations (due dates) and my pacing. I can gauge if I am doing something right if I feel at peace and know I have done my best. Self-assessment goes hand in hand with integrity."
"In the means of my courses and my professors, I believe that they will not give or assign me something that is impossible to complete in a timely manner. I'm a graduate student, so I believe that from here on out there isn't an assignment where the content is going to be way out in left field. I know that I will have some sort of prior knowledge about the content. My professors typically lay out resources for me, but I have also learned how to go out and find reputable resources on my own."
"Self-assessments enable me to see if I am understanding the material, if I need to review more, or if I'm retaining the material. The use of rubrics help me ensure that I am covering all the required parts of the assignment."
"The use of formative self-assessment helps to give the student more knowledge about what they are doing right or wrong. It can help to clarify what type of information a teacher may want and know what to focus on when it comes to possibly responding to some questions or writing prompts. Getting feedback from teachers serves a guide to be able to use that information for future reference on the rest of the assignments."
"I think formative feedback is very important. It helps me understand where I need to improve. I rarely feel confident about what I have submitted so it is always a relief to know I am not doing poorly due to not having enough time to complete assignments."

"I believe formative self-assessment is necessary to ensure I understand what is expected of me on any given assignment and to provide myself with a clear understanding of how well I comprehend expectations. Self-assessment helps to keep me on track and helps me visualize what I need to do to complete assignments thoroughly and efficiently."
"I think it's important to get in the practice of reflecting on your progress as a graduate student, and find areas that need to improve and strengthen. Then you can find strategies to meet your own goals to get the most out of your graduate degree and education."
"I think formative self-assessment is a good tool/method for students to use for self-monitoring. I've found that in my experience in grad school, formative assessments are often built in through written assignments, sometimes in the form of reflections or rubrics, which are very helpful."
"I believe formative self-assessments could be useful students in the form of accountability. If we as students were expected to self-assess at the end of an assignment or at the end of class, we may hold ourselves more accountable to put forth full effort on every assignment or during any class."
"I think that it is important to monitor progress and track growth to realize goal achievement and set new goals."
"I believe the use of formative self-assessments is very helpful for both the student and the teacher. It provides a snapshot of what concepts the student is gaining knowledge in and what concepts the teacher might need to reteach."

N=40

Un-hypothesized Findings

Attitude Towards Formative Self-Assessment

During the interviews, the graduate students shared some interesting information that was not initially hypothesized about what they believed to be the most effective form of formative assessment to be conducted in their online graduate programs, as represented (see Table 73). The main feeling that was evident during the study was the students' belief that the most effective form of formative assessment was feedback in stages from their professors as well as their peers. Another feeling that was evident was the importance of utilizing rubrics as part of formative assessment as well as reflections about the assignments and learning.

Table 73

Frequency: Interview Question #5: What do you believe would be the most effective form of formative assessment to be conducted during your online graduate courses?

Responses	Frequency
Feedback (professor/peers/project stages)	24
Rubrics	7
Samples	2
Mid-course survey on understanding and progress	1
Pre and post survey to show growth	1
End of course survey/reflection	5
Discussion posts	2
Synchronous time for questions	2
Grades kept current	1
Unsure	1

N=43

Summary

This study sought to examine the relationship of formative self-assessment as it related to academic achievement and self-efficacy in online graduate programs. The study results were triangulated through the use of quantitative and qualitative data. The quantitative data was analyzed using SPSS and the results were explained. Descriptive and inferential statistics were calculated to analyze the quantitative data collected during the study. Descriptive statistics provided frequency distribution percentages; measures of central tendencies including mean, median, and mode; as well as measures of dispersion including range and standard deviation. For statistical data analysis, Pearson r correlations were conducted to determine relationships. Relationships between variables were analyzed to determine associations and to make predictions. Correlations with an absolute value over .70 were considered strong and correlations between .30 and .70 were moderate. The qualitative data was analyzed from transcripts and open-ended responses. The researcher read through and coded the data utilizing axial coding procedures. Qualitative data provided themes and patterns through the use of

domain analysis. The subsequent chapter provides a summary of the findings related to whether a significant relationship was found between formative self-assessment, academic achievement, and self-efficacy. These findings will be shared to create awareness of the potential educational benefits of incorporating formative self-assessment into online graduate programs.

CHAPTER 5: DISCUSSION

Formative assessment is essential to include in our online courses. We need to increase our focus on metacognition, which allows students to think about their thinking. Online education is continuing to grow and in order to provide effective educational experiences for students, educators need to include formative assessment. To accomplish the goal of increased academic achievement and student self-efficacy, we need to include research-based strategies that have been found to be effective in traditional classes. Therefore, we need to increase the use of formative assessment in our online courses, including opportunities for formative self-assessment.

Formative self-assessment provides an opportunity for student reflection regarding their progress towards achieving the expected learning outcomes. In order to examine the relationship of formative self-assessment to academic achievement and self-efficacy, this study used a correlational research design. A correlational research design was chosen to determine relationship between the variables. Random sampling was not possible; the study was conducted with self-contained graduate education programs. The participants included Master's in education and doctoral education students from three universities in Southern California. The study sought to answer the questions of the relationship of formative self-assessment related to assignments in online graduate education courses, the relationship of formative self-assessment to projects in online graduate courses, and the relationship of formative self-assessment to student self-efficacy in online graduate courses. Quantitative and qualitative instruments were used for triangulation of the data to operationalize academic achievement and self-efficacy, as well as to enhance validity and reliability. The research study occurred during eight weeks of instruction in graduate education courses.

Hypothesized Conclusions

Hypothesis One

The first hypothesis stated that there would be no relationship between formative self-assessment to assignments in online graduate courses.

At the end of the eight-week study, the null hypothesis was accepted. A significant relationship was not evident between formative self-assessment and assignments (see Table 11). However, while the hypothesis was accepted from a statistical standpoint, the survey responses reflected moderate, positive relationships within students' beliefs that those who received formative feedback from the professor also were more likely to believe that formative feedback from the professor would aid in their academic achievement. They were also more likely to believe that their professors were accessible to provide feedback. The frequency findings from the Likert survey supported a high level of positive feelings that feedback from their professor aids in their academic achievement with 69.0% stating strongly agree and 26.2% stating agree (see Table 9).

Additionally, moderate, positive relationships were found within students' responses when they regularly utilize course rubrics to self-assess their assignments before completing them and their belief that self-assessment allows them to determine the necessary steps to successfully achieve the course objectives. They were also more likely to be satisfied with the amount of self-assessment that they undertook.

These findings are supported by the studies conducted by Fisher and Frey (2018) that reflect the importance of frequent formative feedback to provide students with the opportunity to determine the next steps necessary to increase their progress towards the learning objectives. The importance of feedback is also supported by Margolis and McCabe (as cited by Greenstein,

2010) who report that feedback, along with self-assessment, can lead to increased self-efficacy and a student's confidence to achieve.

Finally, regarding hypotheses one, which stated that there would be no relationship between formative self-assessment to assignments in online graduate courses, there were relevant findings from a non-statistical standpoint; the majority of students responded positively when asked if they believed that conducting formative self-assessment would benefit them academically. Examples of quotes supporting this included "Yeah, because when I do it for myself, you know, I do see the benefits of it. So, if it was required, then I'd do it more often maybe;" "I think so. I think any type of like reflection, or like thinking back on our own work, or everything we've done is definitely good for everyone. Especially, with everything we're learning. Yeah;" and "I think it would. I know that I try to use it just myself. I try to implement it, but I think if it were required, then I would actually do it more often and I think it would help out a lot." Students also noted that when completing their assignments, they refer to feedback from their professor. One student stated, "I think the most effective is just the ongoing feedback and being able to turn in a portion of the assignment early, get the feedback, and then be able to have the chance to revise it. I've never done a paper like we've done in this last class and I was really scared going through it, but really proud of myself at the end. So, just that kind of feedback really helped me a lot."

The patterns that emerged from the open-ended survey responses referred to completing work in advance as well as utilizing the rubrics and the syllabus as the most common process used in completing course assignments (see Figure 9).

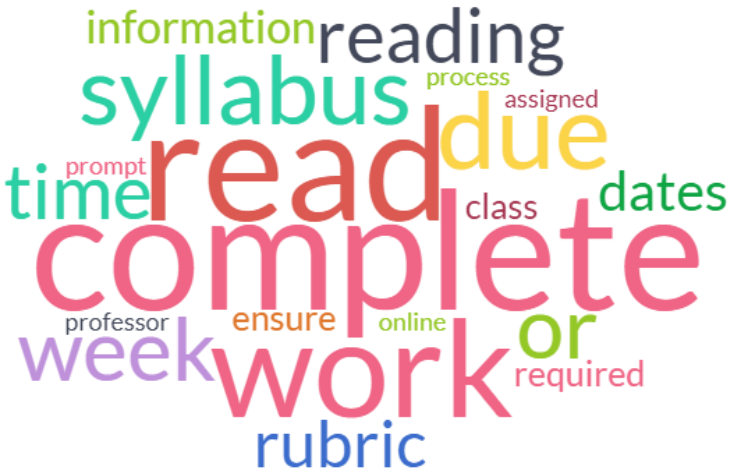

Figure 9 Word Cloud: Likert Survey Question One

The pattern that emerged from the open-ended survey responses stated that formative feedback, provided in stages, is needed from professors prior to submitting final assignments (see Figure 10).

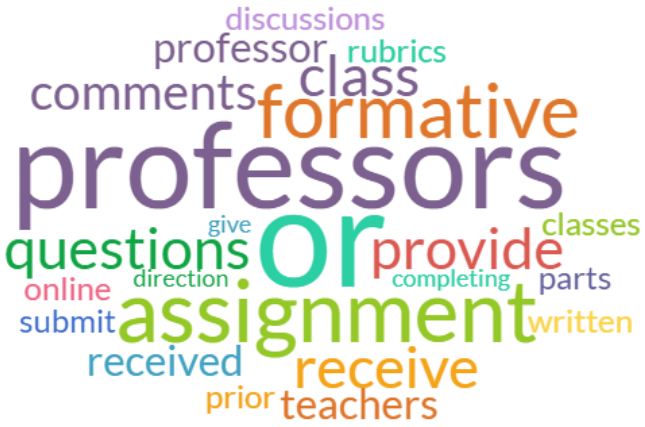

Figure 10 Word Cloud: Likert Survey Question Three

Hypothesis Two

The second hypothesis stated that there would be no relationship between formative self-assessment to projects in online graduate courses.

At the end of the eight-week study, the null hypothesis was accepted. A significant relationship was not evident between formative self-assessment and projects (see Table 33). However, while the hypothesis was accepted from a statistical standpoint, the survey responses reflected moderate, positive relationships as students who were required to conduct formative self-assessment were more likely to score higher relative to personal progress. Additional moderate, positive relationships were found to exist between students' understanding of project guidelines to their, personal progress, project content, and project organization. Moderate, positive relationships were also reflected between personal progress and project deadlines as well as project content and project organization that included APA formatting.

Interviews were conducted, and the patterns that emerged also were found to support Livingston's metacognition theory as well as the studies conducted by Heritage (2013) related to self-regulation. As stated previously, metacognition involves the capacity to monitor, evaluate, and know what to do to improve performance. Positive trends that emerged during the treatment were clear with a majority of students stating that they believe that formative assessment does build confidence in student's abilities to complete their online graduate course assignments successfully and that formative assessment is needed from professors prior to the submission of final assignments. Another significant trend was that formative self-assessment was not required in the majority of graduate courses, but students believed that this would benefit them academically. Additionally, the majority of graduate students do conduct some form of formative self-assessment on an informal basis; but they often utilize the course rubric to monitor their progress and determine the next steps to take to succeed academically. Quotes to support these themes include, "I would say the exact format of last semester's course was with the research paper. I was 100% overwhelmed in the very beginning looking at the amount of pages,

the amount of work; I didn't know what a literature review was. I thought it was the same as an annotated bibliography, and throughout the weeks of having those deadlines to turn them in, and then to get the feedback. There were things that were being caught that I didn't myself catch. There's so much. And, I was even getting my dates wrong just with APA and my bibliography. So, I was with different dates, when my professor pointed it out, I was like, 'How did I not know that?' And, so something that I overlooked because I was analyzing the grammar or looking at the little pieces. So, it was really helpful to have another eye to look at it. And, the feedback of, 'Okay, I can improve from here.' It wasn't just, 'This is your grade and you're done.' I am blown away, 'cause for me, like I didn't think that I was ever gonna get my masters just because I'm not a good test taker. If you've noticed my test, the one exam we had in our last course, I think I got like a low C. 'Cause it's the multiple choice where I go, 'Oh, I can choose this or this could be this.' And, my mind goes back and forth and I argue for both answers. And, so, to be in the program and to feel like I'm actually finally, like in the beginning, I feel like when I talked to you, I was kind of nervous like about what to expect, 'Is this hard?' Like, 'Is it doable?' And, I feel more confident in my ability that I'm like even thinking maybe one day I'll go further than this in school, which never crossed my mind. This is really a game changer for how this formative assessment has been for me." Another example states, "I think an effective formative assessment would be to receive feedback from the professor on the assignment. Feedback where they give you one area of praise on an assignment and one area for growth. So, I think having the ability and being encouraged to share a portion or all of an assignment prior to its due date to receive feedback from the professor. Maybe one area of strength and one area of growth I think would be really beneficial, and especially in the early parts of a course. Let's say in the first three weeks. It has been offered by a professor, I would say, anecdotally. If that makes sense.

Or, just like as her policy and not necessarily a university policy to encourage that. I think specifically with something like, let me give you an example, like APA when students are entering a graduate program. I think it would be really beneficial in the early coursework if students could have individual feedback on APA related issues or corrections early on. It helps the learning process more than a guidebook or a website."

Hypothesis Three

The third hypothesis stated that there would be no relationship between formative self-assessment to self-efficacy in online graduate courses.

At the end of the eight-week study, the null hypothesis was accepted. A significant relationship was not evident between formative self-assessment and self-efficacy (see Table 57). However, while the hypothesis was accepted from a statistical standpoint, the survey responses reflected moderate, positive relationships as students were more likely to have similar beliefs about self-assessment growing their capabilities and determining the necessary steps to successfully achieving their course objectives. They were also found more likely have had similar beliefs about self-assessment determining the necessary steps to successfully achieving their course objectives and that their ability grows with effort. Correlations conducted also found that students were more likely to have similar beliefs about their ability growing with effort and growing their capabilities by conducting self-assessment.

Additionally, moderate, positive relationships were found as students were more likely to have similar beliefs about their ability to grow with effort and their satisfaction with the amount of effort they are putting forth to complete their assignments well. They were also more likely to have similar beliefs about formative assessment aiding in their academic achievement and their focus on progress when struggling with course content.

Interviews were conducted, and the patterns that emerged also support Bandura's self-efficacy theories as well as the works of Stiggins and Popham (2008). Self-efficacy involves beliefs about one's competence to successfully perform a task, which can affect motivation, interest, and academic achievement. Students understand the learning objectives and what steps will be needed to achieve those objectives. Positive trends emerged, with a majority of students stating that they believe that formative self-assessment builds their confidence in their ability to complete their graduate course assignments successfully.

Open-ended responses were received from the graduate students during the course of completing the Likert survey regarding their beliefs about formative assessment. One pattern that emerged in the open-ended survey responses showed that students believe that formative self-assessment allows students to monitor their progress and learning. Examples of quotes supporting these themes include, "I have a positive view with regards to formative self-assessments. They allow for reflection and academic growth. It allows me to monitor and see what works and what I need to improve on;" and "Very important; it allows us to self-evaluate where we are at as students to determine if we are making any progress on the short and long-term goals we have in our academic work." Additionally, "I believe formative self-assessment is necessary to ensure I understand what is expected of me on any given assignment and to provide myself with a clear understanding of how well I comprehend expectations. Self-assessment helps to keep me on track and helps me visualize what I need to do to complete assignments thoroughly and efficiently."

When asked about the process that students used in completing their course assignments, the pattern that emerged was that formative assessments are important for allowing students to reflect on their learning and check for understanding (see Figure 11).

Figure 11. Word Cloud: Likert Survey Question Two

Regarding the statistical analysis, no additional correlations where found when controlling for demographic elements such as credential type, years taught, number of courses done, and more. This is due to the small sample size represented in this research study.

Un-hypothesized Conclusions

Attitude Toward Formative Assessment

The predominant feeling that emerged during the interviews was the students' belief that the most effective form of formative assessment to be conducted in their online graduate programs was formative feedback, as represented (see Table 73). Regarding formative feedback, a primary feeling that was evident during the study was the students' belief that formative feedback, in stages, from their professors as well as their peers was very effective for their achievement. Another perception that was evident was the importance of utilizing rubrics as part of formative assessment as well as reflections about the assignments and learning.

Limitations

Several limitations affected the reliability and validity of this study. The limitations included sampling, instructional constraints, timing, and content constraints. The first limitation involved sampling. The study used a purposive sample; therefore, it was not a random sample.

The students used in the study were assigned to their courses. Additionally, eight additional universities were contacted, but were either unable to have their students participate in the research study, their graduate program was mostly in a traditional setting versus online, or there was no response received from their students even though participation was approved by the university and professor. A random sample with additional groups would provide more valid data for causal conclusions.

The second limitation had to do with instructional constraints. The courses included in this study were under the control of their professors. In order to yield consistent results, a general self-assessment rubric was utilized for this study.

Additionally, a limitation was the participants' understanding of formative self-assessment. While 50% of the participants stated that formative assessment was required of them, several participants requested clarification of the term formative self-assessment when responding to the interview questions. Once clarified, the responses were less for those participants who were required to complete formative self-assessment. Therefore, even though the participants were in the teaching profession, there appears to be a misunderstanding of formative assessment as well as formative self-assessment.

Another limitation that affected the study was timing. The study consisted of eight weeks. This short timeline limited data to get a full picture of the possible positive relationship between formative self-assessment to academic achievement and self-efficacy. While evidence was found to support all three hypotheses, additional data would provide in-depth comparisons for validity.

The final limitation had to do with the content of the subject matter being taught. The subject matter in the graduate courses that was used in the study directly followed the graduate

programs where the students were enrolled. Therefore, the courses varied between universities. The content of the subject matter was also a constraint, as there was no control over the course content. This could have skewed the data as the graduate students were at different stages in completing their graduate in education programs.

Recommendations

To replicate the study, several changes should be made to ensure reliability and validity. The first recommendation is to conduct a correlational research design using a larger random sample with additional groups. Including a large sample representing more participants would provide more reliable and valid data to look at the relationship of formative self-assessment to academic achievement and self-efficacy. Additional groups to consider would be students in online K – 12 courses, as well as undergraduate college students in online or traditional settings.

It is also recommended that the classroom teachers conduct the research themselves. This will provide greater control over the research process conducted, which will also lead to a higher level of reliability and validity. Direct contact with the students would also allow for a quasi-experimental research design with observation and treatment groups to reflect an increase in academic achievement and self-efficacy. Also, interacting with the graduate students on a continual basis will provide additional insights not available to someone who is outside of the classroom. Professors also need to be educated about how to effectively use formative assessment in their online courses.

Another recommendation involves timing. A longer time frame provided for the study would also provide more reliable and valid data. By providing a longer time line for data collection, more subject matter could be covered, more time for the intervention to take place,

and it is assumed that more patterns would emerge. Research results that stand the test of time are more substantiated.

Finally, it is recommended that question #13, from the Likert survey, be either rewritten or removed from any future research study. This question was found to be unreliable during the Cronbach's Alpha and Pearson r analyses. Therefore, please note that this question was already excluded from the data analysis that was conducted.

Summary

The purpose of this study was to examine the relationship of formative self-assessment to academic achievement and self-efficacy in online graduate programs. As the focus was on the relationship of the independent and dependent variables, a correlational research design was chosen for this study. The study results were triangulated through the use of quantitative and qualitative methods and data. The statistical findings did not reflect strong, positive relationships to reject the three null hypotheses; therefore, each of the hypotheses was accepted. However, the non-statistical findings reflected a positive relationship between formative self-assessment as it related to academic achievement and student self-efficacy in online graduate programs.

Formative self-assessment provides online educators with a tool to enhance the course effectiveness and the overall learning process. This study will positively impact the effectiveness of online courses. As positive results were evident from a non-statistical perspective, the research will serve to encourage professors of online graduate programs to integrate the use of formative self-assessment into their courses.

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APPENDIX A

Letter of Informed Consent

INFORMED CONSENT

CORRELATING FORMATIVE SELF-ASSESSMENT OF EDUCATION GRADUATE ONLINE PROGRAMS

The study in which you are being asked to participate is designed to determine the relationship of formative self-assessment to academic achievement and self-efficacy in graduate online programs. Specifically, the study is focusing on online Master's in Education programs. This study is being conducted by Mrs. Rebecca Lynne Spady under the supervision of Dr. Belinda Karge, Professor of Doctoral Programs, Concordia University Irvine. This study has been approved by the Institutional Review Board, Concordia University Irvine.

PURPOSE: It is essential that twenty-first century education courses require increased critical thinking skills and creativity. Self-assessment, which is an element of formative assessment, provides the student the opportunity to develop critical thinking skills by evaluating their progress and determining the next steps to reach their academic achievement goals in higher education. Formative self-assessment is an effective research-based practice in traditional courses, which may prove effective in online education as well. Therefore, the purpose of this study is to determine the relationship of formative assessment on academic achievement and self-efficacy in online graduate education courses.

DESCRIPTION: As a participant, you will be asked to complete an online survey through Survey Monkey, which will include both multiple choice and open ended questions. At the end of the survey, you will invited to participate in a follow-up interview. Additionally, you will be asked to complete a self-assessment of your progress toward completion of any course projects based on rubric.

PARTICIPATION: Participation in this study is completely voluntary. You may decide to discontinue your participation at any time throughout the study.

CONFIDENTIALITY OR ANONYMITY: Confidentiality of all participants and their universities will be maintained through this study. All documents and data pertinent to this study will be maintained in the researcher's laptop, which is password protected, as well as in a locked file cabinet that only the researcher will have access to for a period of one year. After this time, the documents and data will be destroyed, which will occur on May 1, 2022.

DURATION: The study will take place over a six-week timeframe beginning January 1, 2018 and ending February 15, 2018. The survey will take approximately 15 minutes to complete, the interview will last no longer than 30 minutes, and the project self-assessment will take approximately 15 minutes. All of these measures will be completed at separate times.

RISKS: There are no major risks involved in this study. Potential risks to participants in this study will be minimal. You may experience concern related to responding to questions about current teaching practices being conducted in the courses where you are currently enrolled. You may also feel time constraints from participation in the surveys, and interviews as you are already busy with your Master's in Education courses and work. However, as all data will be collected through online electronic mediums, you can schedule a

time that will best fit your schedule. Additionally, there will be no retribution for your responses as confidentiality will be maintained.

BENEFITS: Currently the researcher is a professor using formative self-assessment in the coursework being taught. Therefore, there is prior knowledge about the benefits of utilizing formative assessment in the online education environment as well as in traditional classrooms. Formative assessment has been proven to be a research-based best practice in traditional brick and mortar settings and further research is being conducted to support the use of formative assessment in online education courses offerings. There are potential benefits to professors within graduate online programs, as well as other online educators, to learn about the effectiveness of formative self-assessment for increased student academic achievement and self-efficacy.

VIDEO/AUDIO/PHOTOGRAPH: All interviews will be conducted and recorded through an online program called Zoom. A separate consent form will be provided to participants who accept the invitation to participate.

CONTACT: At any time, you may contact Dr. Belinda Karge, Professor of Doctoral Programs, (949)-214-333, Belinda.karge@cui.edu or Rebecca Lynne Spady, Doctoral student, rebecca.spady@eagles.cui.edu if you have any questions related participation in this research study.

RESULTS: Results of the study can be obtained from Concordia University Irvine at the address provided below.

Concordia University Irvine
1530 Concordia
Irvine, CA 92612

CONFIRMATION STATEMENT:

I have read the information above and agree to participate in your study.

Signature: _____ Date: _____

Printed Name: _____

Email Address: _____

A copy of your consent will be provided to you via email.

INTERVIEW VIDEO/AUDIO USE – INFORMED CONSENT

CORRELATING FORMATIVE SELF-ASSESSMENT OF EDUCATION GRADUATE ONLINE PROGRAMS

INTERVIEW VIDEO/AUDIO USE

The study in which you are being asked to participate is designed to determine the relationship of formative self-assessment to academic achievement and self-efficacy in graduate online programs. Specifically, the study is focusing on online Master's in Education programs. This study is being conducted by Mrs. Rebecca Lynne Spady under the supervision of Dr. Belinda Karge, Professor of Doctoral Programs, Concordia University Irvine. This study has been approved by the Institutional Review Board, Concordia University Irvine.

PURPOSE: It is essential that twenty-first century education courses require increased critical thinking skills and creativity. Self-assessment, which is an element of formative assessment, provides the student the opportunity to develop critical thinking skills by evaluating their progress and determining the next steps to reach their academic achievement goals in higher education. Formative self-assessment is an effective research-based practice in traditional courses, which may prove effective in online education as well. Therefore, the purpose of this study is to determine the relationship of formative assessment on academic achievement and self-efficacy in online graduate education courses.

DESCRIPTION: As a participant, you will be asked to participate in an interview through an online program called Zoom.

PARTICIPATION: Participation in this study is completely voluntary. You may decide to discontinue your participation at any time throughout the study.

CONFIDENTIALITY OR ANONYMITY: Confidentiality of all participants and their universities will be maintained through this study. All documents and data pertinent to this study will be maintained in the researcher's laptop, which is password protected, as well as in a locked file cabinet that only the researcher will have access to for a period of one year. After this time, the documents and data will be destroyed, which will occur on May 1, 2022.

DURATION: The study will take place over a six-week timeframe beginning January 1, 2018 and ending February 15, 2018. The interview will last no longer than 30 minutes and will be complete separately than an other research participation elements.

RISKS: There are no major risks involved in this study. Potential risks to participants in this study will be minimal. You may experience concern related to responding to questions about current teaching practices being conducted in the courses where you are currently enrolled. You may also feel time constraints from participation in the surveys, and interviews as you are already busy with your Master's in Education courses and work. However, as all data will be collected through online electronic mediums, you can schedule a time that will best fit your schedule. Additionally, there will be no retribution for your responses as confidentiality will be maintained.

BENEFITS: Currently the researcher is a professor using formative self-assessment in the coursework being taught. Therefore, there is prior knowledge about the benefits of utilizing formative assessment in the online education environment as well as in traditional classrooms. Formative assessment has been proven to be a research-based best practice in traditional brick and mortar settings and further research is being conducted to support the use of formative assessment in online education courses offerings. There are potential benefits to professors within graduate online programs, as well as other online educators, to learn about the effectiveness of formative self-assessment for increased student academic achievement and self-efficacy.

VIDEO/AUDIO/PHOTOGRAPH: As part of this research project, the researcher will be making a videotape/audiotape recording of you during your participation in the interview. The interview videotape/audiotape recordings will be made through an online program called Zoom. Please indicate what uses of videotape/audiotape you are willing to consent to by initialing below. You are free to initial any number of spaces from zero to all of the spaces provided. Your recording will in no way affect your participation. The videotapes/audiotapes will only be used in the way that you agree to. Confidentiality will be maintained with any use of these videotapes/audiotapes.

Please indicate the type of informed consent.

The videotape/audiotape can be studied by the research team for use in the research project.	Please initial _____
The videotape/audiotape can be used for scientific publications.	Please initial _____
The videotape/audiotape can be shown/played in classrooms to committee members from the university.	Please initial _____

CONTACT: At any time, you may contact Dr. Belinda Karge, Professor of Doctoral Programs, (949)-214-333, Belinda.karge@cui.edu or Rebecca Lynne Spady, Doctoral student, rebecca.spady@eagles.cui.edu if you have any questions related participation in this research study.

RESULTS: Results of the study can be obtained from Concordia University Irvine at the address provided below.

Concordia University Irvine
1530 Concordia
Irvine, CA 92612

CONFIRMATION STATEMENT:

I have read the above description, I agree to participate in the interview, and I give my consent for the use of the videotape/audiotape as indicated above.

Signature: _____ Date: _____

Printed Name: _____

A copy of your consent will be provided to you via email.

APPENDIX B

Likert Survey

Self-Efficacy Survey

My name is Becky Spady. I am completing my doctorate at Concordia University and my research study is focused on the relationship of formative self-assessment to academic achievement and self-efficacy in online Master's in Education or Doctor of Education courses. The information provided in this survey is anonymous and will only be used for the purpose of my research study. I would appreciate your participation by answering the questions completely.

The focus of this survey will be to measure student self-efficacy as it relates to formative self-assessment. Self-efficacy is defined as the self-perceptions that individuals hold about their capabilities. Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes. It is real time to the minute assessment of a practice as it occurs.

Please respond to this section in your own words.

1. Please share the process that you use in completing course assignments.

2. Please share your beliefs about the use of formative self-assessment.

3. Please share what type of formative feedback you receive from your professors, prior to completing assignments.

In the next section, please choose the best answer for each question.

4. I regularly utilize course rubrics to self-assess my assignments before completing them.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

5. I believe that self-assessment allows me to determine the necessary steps to successfully achieve the course objectives.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

6. I believe that by conducting self-assessment that I can grow in my capabilities.

a. strongly agree
b. agree
c. disagree
d. strongly disagree

7. My professors do not require formative self-assessment during their course.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

8. I am not satisfied with the amount of self-assessment I undertake.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

9. I receive formative feedback from my professor, which is not graded.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

10. I believe that formative feedback from my professor aids in my academic achievement.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

11. I find my graduate education program to be challenging.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

12. I find my graduate education professors accessible to provide feedback.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

13. I have to request feedback from my professors if I want feedback prior to assignments being completed.
    a. strongly agree
    b. agree

c. disagree
d. strongly disagree

14. I am satisfied with the amount of effort I am putting forth to not only complete the assignments, but to complete them well.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

15. I believe that my ability grows with effort.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

16. I am confident that I will achieve the goals that I set for myself.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

17. When I am struggling with my course content, I focus on my progress rather than feeling discouraged.
    a. strongly agree
    b. agree
    c. disagree
    d. strongly disagree

18. What is your gender?
    a. Male
    b. Female

19. What is your age?
    a. 20 – 30
    b. 31 – 40
    c. 41 – 50
    d. 51 – 60
    e. 60+

20. How many years have you been teaching?
    a. 0 – 5
    b. 6 – 10
    c. 11 – 15

d. 16 – 20
e. 21 – 25
f. 26 – 30
g. 30+

21. What best describes your teaching credential?
    a. Elementary
    b. Secondary
        i. English
        ii. Math
        iii. Social Studies
        iv. Science
        v. Foreign Language
        vi. Other
    c. Special Education
    d. None

22. What best describes your online graduate education program?
    a. Fully online
    b. Blended with both online and face-to-face meetings

23. How many courses have you completed of your graduate education program?
    a. One - Two
    b. Three - Four
    c. Five - Six
    d. Seven - Eight
    e. Nine - Ten
    f. More than Ten

Thank you for participating in the survey portion of my research!

APPENDIX C

Self-Assessment Rubric

The following is a self-evaluation. Please refer to the main project rubric and syllabus for your course.

	Unacceptable 1	Needs Work 2	Meets Standard 3	Exemplary 4	Score
Understanding of Project Guidelines	Project guidelines are not understood and no attempt has been made to clarify understanding.	Several questions exist regarding the project guidelines and attempts have been made to clarify understanding.	Minimal questions exist regarding the project guidelines and attempts have been made to clarify understanding.	Thorough understanding of the project guidelines and questions have been clarified to help peers.	
Personal Progress	No progress has been made towards the main course project.	Minimal progress has been made towards the main course project.	Adequate progress is being made toward completions of the course main project.	Excellent progress is being made toward completion of the main course project.	
Project Deadlines	Does not meet project deadlines.	Project deadlines are met a couple of days late.	Project deadlines are met. Project is turned in on the due dates.	Project is turned in advance to request formative feedback prior to the deadline.	
Project Content	Project content fails to meet requirements or content is missing.	Several elements of the project content need to be corrected.	Project content meets minimal project content requirements. Minor corrections needed.	Project content exceeds requirements and reflects mastery of learning. This content could be used as a sample for future students.	
Organization and APA Format	Fails to meet course project requirements.	Several elements need correction within the organization and format of the project.	Minor corrections need to be made to the organization and APA format.	All organization and APA format is accurate. No corrections are necessary.	
Please circle, highlight, or mark, the stage of the project within your course.		Just beginning	Half way through	Completed	
				Expected Project Grade	

APPENDIX D

Interview Questions

1. Are you required to complete formative self-assessment in your online graduate courses? If so, how is that conducted? If not, do you believe that this would be a benefit to you academically?

2. Even if not required, do you conduct any form of formative self-assessment?

3. Do you conduct any form of peer-reviewed assessment?

4. Do you believe that formative assessment builds your confidence in your ability to complete your online graduate course assignments successfully?

5. What do you believe would be the most effective form of formative assessment to be conducted during your online graduate courses?

Note: As the interview questions are answered, probes will be conducted to ask is there is anything additional.

APPENDIX E

Interview Responses

Question #1*: Are you required to complete formative self-assessment in your online graduate courses?*

"Yes"

"No, not required, but encouraged."

"I would think so."

"Yes"

"Self-assessments, yes, I'm supposed to do every chapter that we do for our text there's always a reflection part of it, where around question eight, 'What is it that we learned in the chapter? What is it that we…?' We're almost able to examine ourselves where it is that we are really excelling in and what are the areas that we need to address so that we can become better teachers and address all the needs of our students when it comes to assessing students with various modalities."

"Yes"

"Yes"

"No"

"No"

"I have completed a self-assessment. Yes, depending on the course, yes. I have done some assessment for my doctoral program classes."

"We're required to do like a survey after the course is, your finished with the course. And, so in that survey, if there's any need to improve or, what you like or not like, or how did it go. And, then there's even a number qualification from 1 to 5, and then you have 3 boxes I believe that you can put in your written opinion. Now, for our self, besides the classes that we took. We took one course in the very beginning, and we did some self-assessment test to check on what type of leader we would be or what our personality is and it was more towards a leadership course. I don't think there was a formative self-assessment."

"Formative self-assessments., no."

"In some courses, yes."

"As far as I know, in the classes I have taken so far, no. I haven't seen any."

"I've only taken one class so far."

"I don't know that I would say that it's required. Certainly, I know that myself and all my cohort mates we do because we always look against the rubrics that are given in each class. And, even today we were discussing some grades that just came out today. And, so, you know we're looking at it and kind of discussing how we're doing in the class. So, I wouldn't say that it's required, but it's definitely something that we're given the opportunity to do and I would say everyone that I know does it."

"No"

"I'm not required to."

"I am not."

"Not. I don't think required is accurate. Encouraged, but probably not required."

"No"

"No, not all of them. I don't think I've completed one."

"Not to my knowledge. I don't believe that I have to. I critique other students, or at least respond to like what they write, but I don't, in so far I haven't seen that on the syllabus, no."

"No"

"No, it's not required."

"No"

"Yeah, a lot of times we do. It's more like reflection based a lot of the time. So, after we do like a project we usually write a reflection about how we felt we did."

"No, I don't think we are required to do that."

"No"

"Currently, I don't believe so. They're mainly just reports."

"Sometimes"

"No, I wouldn't say it's required. Professors usually do include rubrics to kind of guide our assignments so that we can know what we have to do, but it's up to you to follow the rubric."

"I would say, so for example, this semester we have some in the teaching credentialing program and well we have like a self-reflection, but it's something that is kind of related to our field and what we're doing. But, we don't rate ourselves as far as like our performance per say. For taking an online class in general, if that makes any sense. I wouldn't say formally, no."

"No, it's not a requirement."

"I think I've only done that like on one occasion. I don't recall doing it regularly. I've had about three online classes so far, I think, and I've only done it once."

"Usually at the end and then we have a rubric, but we're not turning that in. It's just for us to reference. There's nothing that I am required to do and turn in to rate myself."

"No"

"I'm trying to think. Because like throughout the courses, we're able to reflect on certain assignments mainly because the projects or whatever given assignment, we're able to submit portions individually and get feedback from the teacher. At the end of the course we're also able to take like an evaluation of the whole course, in general. So, self-assessment, no."

"Not really. I mean as far as like rubrics and things like that. Oh, it depends. Like last year, I had a class where they come and observe me and I did, I had to rate myself on different things. But, in general, like in my normal classes, I haven't really had to like give them assessments of myself."

"No. Up to this point, I'm not required to do that."

"Yes, we are. Sometimes we have to upload them or write it online."

"Not yet."

"Not self-assessments."

"Not required at the moment."

"I don't think it's ever been a formal requirement. Yeah, I think maybe it's been implied, or maybe some tools have been suggested, but it's never been required."

N=43

Question #1a*: If so, how is that conducted?*

"Well, it's just by reflecting and, you know, seeing if I can make any of my assignments better. And, I also, when I get feedback then I can redo that portion of the assignment, and you know, to what the standards are that are set."

"Well, it's just kind of like throughout the process I feel that I'm kind of always going through my own work and thinking if it's up to par or not."

"Through the little rubric thing that our professor sent us."

"The formative assessments I believe would be through assignments and I think just talking online through the discussion questions would be the formative assessment also."

"By formative? Isn't that where, sorry. Formative assessment is when we do like self-evaluations on like our work, correct? So, like when we do the rubric and we look back at our stuff and, like, we also evaluate our peers as well."

"A written response to an assignment."

"Like mostly little quizzes and we've had like self-reflections like an online diary for one of our courses as well, which was kind of a nice thing to do. It helps us reflect a little bit about our learning. Yeah, so, mainly these two. I can't think of any others right now."

"I've only taken one class so far. And, we were provided with a rubric and we were instructed to utilize the rubric to help us to complete the assessment as well as to know how to complete the assessment. So, I would say that a rubric counts as a formative assessment."

"Well, it's usually in the form of a reflection to either an assignment or an article that's read. It's something to that effect."

N=43

Question #1b*: If not, do you believe that this would be a benefit to you academically if it were required?*

"Yes"

"Yeah, because when I do it for myself, you know, I do see the benefits of it. So, if it was required, then I'd do it more often maybe."

"Absolutely. I'm a big believer in goal setting, checking for understanding, making sure that the professor is checking in with students to make sure that they are on track and they know the professor provides time for, like office hours where students who need some extra support can reach out and say, 'I'm confused on an assignment. I don't understand what's going on. I'm rating myself as far as this week goes and I feel like I'm falling behind because I'm assessing my learning and I feel lost.' So, I absolutely, 100%, yes, the answer is yes."

"I don't know that making it required would. Like I was saying, every single person I know in my class and other cohorts that I've talked to, those ones that have come before us and ones that are behind us, everybody is always checking, you know. So, I don't know that requiring it would make it any different. Unless you're saying, 'Oh, it's going to be required and it's part of your grade,' then I'm sure that everybody would do it for sure because it's like, 'Oh, this is part of my grade, I need to do it.' "

"I think what it would do is give me a synopsis of what happened in the class. So, I don't think it it'll do me any good."

"I believe so, yes. I think it would be very helpful."

"I'm not sure if would be academically, but it might be personally just to kind of see the growth and track that would be some good information for sure."

"Yeah, I think it would be beneficial for the entire assessment process, you know, outside of like papers and you know, summative assessments. And, partially have the self-assessment it'd part of the grade."

"It probably would be, but I think, I think since we're all adults, at this level of education that hopefully we can all put the onus on ourselves to do it and not necessarily be mandated. I think I said in my, in the survey that you sent that it kind of gives ourselves the leeway to give ourselves slack or to make ourselves work harder, you know. So, rather than it being. I think it would be really good in a master's program for it to be mandated, but not necessarily here."

"Yes! I do believe formative assessments would be beneficial. It will help monitor the progress and gain clarity on expectations."

"I do think it would be a benefit. Any time you're like using self-assessment and trying to see how you're doing, and see how things are going, then of course I think it would be a great benefit."

"I think so because, you know, it would, you know, help me keep track of like what I'm doing periodically."

"I'm not sure because I think either way, we have to do it on our own. So, like to keep up with all the assignments and everything."

"I mean, I think personally, I use a lot of the rubrics that are given to me, especially when you have an online class and I kind of use that as a formative assessment. I'm sure it would be helpful just to give me more time. Because I don't think I probably won't make the time to reflect unless it's like, you know, a part of the course. So, I'm sure it would be. Yeah."

"Yes"

"It would, I think it would also, because it would be 'required,' I think it would also add to the stress of doing things. A lot of students in my graduate program are also working full time. So, being able to have that kind of informal formative evaluation and not having that be a requirement of the course is also very nice."

"Yeah, I think it would. It definitely would, because you do get a grade, but you know, sometimes you feel like you don't get enough feedback at times. Or, like, if you meet the professor at office hours you can, but it's a little more difficult to get a grasp on how you're doing."

"Yes"

"I think it would just so I can see my progress, and my growth, and see what I do need to work on, especially with online classes."

"I think so because I think it kind of holds an accountability for us to see if we were using our time wisely, whether we were procrastinating, and I think if we were asked those types of questions I think that it would be beneficial. Because again, if we knew that was coming maybe we would hold ourselves a little bit more accountable and not procrastinate as much as some of us may be doing."

"Yeah, because when I do it for myself, you know, I do see the benefits of it. So, if it was required, then I'd do it more often maybe."

"Not necessarily. I think it depends on the individual because with self-assessment you really have to reflect and be honest with yourself. So, I feel like some people would not necessarily do it properly. I don't know. I'm not sure.

"Oh, definitely. Yeah."

"Yeah, I think so. Like, if I were to like, I don't know, be thoughtful of my answers. I know like some people probably just click or, you know, press the best one in. I think it would be. I think it's a good way to evaluate yourself and kind of see where you're at and maybe the areas where you need to improve in."

"Yeah. I think so."

"Well, I don't know. I think it would be because then we would be able to make like more modifications to how we're learning or taking in information."

"I think so. I do. It helps you understand where you are, you know. 'Cause I may think like I'm great or horrible and it helps to have your teacher, whose seen a million people, you know, tell you there is still room for growth or you are doing well, you know. So, I definitely think it would be helpful."

"I think so. I think any type of like reflection, or like thinking back on our own work, or everything we've done is definitely good for everyone. Especially, with everything we're learning. Yeah."

"Yes, actually I feel like if I take it, it will put a fire in me for more experience and after that I can choose what works better with me."

"I think so."

"Yes, I do believe."

"I think it would. I know that I try to use it just myself. I try to implement it, but I think if it were required, then I would actually do it more often and I think it would help out a lot."

N=43

Question #2*: Even if not required, do you conduct any form of formative self-assessment on your own?*
"No in this class. Other classes that I've had where I've had friends in my class, yes, we get to together and we work together and we pass around each other's work. I also, actually, I take that back because for some essays that I have done, I have submitted it to friends of mine who have similar expertise in an area and then they give me their feedback."
"I often look at examples. That's I think the way that I like to do it. I like to see what has been done before and so I think I work best when I evaluate things for myself is by comparing to another previous example."
"Oh, me as a student? I think I do because a lot of what I read I'm able to see where it is that I'm excelling as far as the teacher, 'What are some of the things that I'm already doing.' I'm actually noticing that a lot of the things that I see within the book, I'm doing it myself already even previously to starting the class. So, that actually gets me excited. Sometimes I feel like I don't know if I'm doing things correctly, but then you read a chapter and then you see that a lot of these things you are doing."
"I don't believe so."
"Yes. The first thing I will always do is download a copy of the rubric that's provided and basically make a bullet point check list, right. 'Here's where we need to be. Here's where I am.' Starting from a blank slate, 'Here's where I want to be. Let's make sure we check off all those boxes in an academic way.' But, you know, obviously not making it so non-personal, you know, in writing and those types of things. This as a guide."
"Absolutely. I don't, I don't personally think that anybody in an online program would be successful if they weren't considering their own learning and assessing how they're progressing, and making sure they're looking at rubrics to assess where they stand. And, making sure that they're looking at the syllabus to look forward, see what's in front of them, reviewing what they already knew. So, in an online program, you wouldn't be successful without self-assessment."
"The only thing, when we do the survey. That would be like the closest to it. 'Cause, I'll say, 'Oh well, did I learn or did I, how was it?' You know. That's just me thinking aloud about how it went and how I'm scoring."
"We look against the rubrics that are given in each class."
"No. I don't do any of these self-assessments on my own."
"We do as a cohort. We bounce ideas off each other and we talk to each other about, 'How are we doing this and how are we doing that?' So, I think that is probably the main way that we do it."

"Sometimes. If I've got, sometimes online we can get like Kahoot games and those kind of things. If I'm like struggling with a particular concept, then I would usually go back to the professor and ask some clarifying questions. And then, occasionally, I don't do that too often, but occasionally I would go online and if there are like little quizzes, I've done a Kahoot game before and it kind of automatically gives me the answers at the end so I know how I'm doing and if I've understood the concept. So, I would say not as often, but it happened before."

"For my courses, formative self-assessment. I would say that I use the rubrics that are provided us for our online discussion boards or our assignments. I will print out the rubric and go through the indicators to determine if I have met the indicators in my response, or essay, or assignment."

"Yes, I mean I practice metacognition, and really reflecting, and taking the work that I've done, and any of the feedback that I've received, and utilizing that feedback to change practice, or to refine something that I've done."

"Not really. I mean, kind of, I make like checklists for myself and things like that, but nothing super formal."

"I definitely look at my teacher comments, and I look at the rubric, and I try and determine what they're trying to think when they wrote the comments down and then how do I view the rubric, you know. And, I just try to do that comparative analysis to see kind of how I'm doing and then, I also too look at previous papers from the beginning of the program to know where I am now. So, I definitely see a little bit of difference."

"Mostly, just by using the rubrics. So, nothing too formal, but I definitely review those before any assignment so that I make sure I'm on the right track because sometimes the description of the assignment can be a little bit different than the rubric. So, and their grading off the rubric. So, that's mainly what I do."

"No, but I probably should. Then maybe my life wouldn't be so difficult."

"Yes, that was modeled to me by several professors and I think that had to do with the quality of work that they were getting and it was, 'When you guys sit down, here's some strategies you guys can use to self-assess and to think if you answered it thoroughly.' Especially, if they are going with the requirements of an assignment or something like that. So, I just refer back to that when I complete my assignments."

"Yes, I do. So, I typically, I really look at the rubric of all the assignments and I follow it with that. But then, I look at the grading the teacher provides after. For instance, discussion board posts, I look at the grading and then I'll ask questions to see if I feel that the grade plus what I've posted isn't matching, then I reach out to the teacher to get some clarity or understanding what else I can do to then achieve the maximum amount of points. Is it, I'm not using outside references, is it my response to peers, is it APA? I think all the teachers kind of have their own things, like I guess, that really matter to them. And, I really try to get that all cleared away before my first assignment. Because, typically what I've noticed is with the discussion board posts, you have at least two before one major assignment is due. So, I try to have clarity for those two discussion board posts before my big assignment. So, I feel like I kind of do that typically for my classes just so I can make sure I'm not all stressed out at the end for possibly not passing the class."

"To self-assess. Sometimes if it's like a project, if it's one of semester long projects, I just try to think about it from an outsider's prospective. So, like, would somebody who doesn't know anything about this project, you know, 'How would they read it?' Or like, 'What would they think of it?' is the question that I ask myself when I'm revising work, you know, and like checking for quality. So, does that count?"

"No"

"If it would be, it would be using the rubrics that professors provide and then I kind of just self-assess how I'm doing myself based on their expectations."

"I do. Usually I might reflect on a good lesson and what worked and what didn't work. Or, I might reflect on what didn't work and how can I do better."

"Okay, so I always refer back to the syllabus and I print out a section depending on like what I'm doing. So, like for each week on the syllabus it tells us what is expected from us like as far as the readings or assignments that are due. So, I print only that part so I can have that kind of like just in the front of my folder so I can keep referring back to it. And then, I cross of things that I complete so that I can make sure that I've done what I had to do for that week or for that project. That's the way I kind of keep myself making sure that I'm doing what I have to do."

"On my own, not so much. It's just the reflection that I think about it."

"I do not."

"Not really. But, you kind of, I guess like based on the grade. Maybe talking with other classmates through like messaging, I think that kind of gives you an idea. Like, 'Okay, maybe I should be doing this or maybe I should be doing that.' Kind of basing yourself on others is one of the ways."

"I do. Usually, depending on the assignment or the classes that I'll be taking, I look at the rubric to kind of like self-guide me on the requirements that are needed for each assignment or project."

"No, not on my own. Just for fun, no."

"I just always check on my progress and make sure I'm, you know, doing everything ahead of time, check myself against the rubric, trying to meet the standards that are expected of me."

"Yes. I'm constantly trying to meet the guidelines of each class I take. I'm always trying to meet all of the requirements in the rubric so that I can do well in the course. And, if I have any questions on an assignment I always talk to the professor and see if they can help clarify some of my questions."

"I would say towards the end when you're getting into panic mode about your grades you probably would. But, in the beginning, no that's not really something that's on the back of your mind. So, going back to what you said earlier, yeah, I think it would be helpful to do that."

"I guess when I get teacher feedback that's when I kind of assess myself. So, not really without teacher feedback."

"Yes, my progress. I have extra details about my response that's related to the question. That's what I mean."

"I would say, no."

"The only thing that I do is maybe look at the rubric to see what's required of me to get a certain, you know, grade or percentage."

"Not as a student. I am a teacher, so I think I assess a lot of my instruction in the classroom. Like, you know, 'How can I improve things?' But, not as a student. No, not really."

"Usually, no, I don't think we do. If it's not required, we don't do it. As a teacher, sometimes I do it just to revise my lesson, but in our plan, we don't."

"Actually, no."

"Yes. So, usually if I complete an assignment or maybe read what is expected, then I go and assess if I met those requirements."

"Yes, I do. It involves speaking to other classmates, gauging based on what they got, kind of seeing where I am, if that makes any sense. And then, also any rubrics or anything that is given, I try to look at the last column, the A column, or the 100% column and kind of do everything as a little check list. And then, if I have all of that on the checklist, then I feel like I have met the requirements for that assignment."

"I've done. Let me think. On my own, I think I just maybe compare assignments. Maybe like I'll look back at other assignments that I've completed and then see how I'm doing in comparison to that. If there is a rubric offered in one of my classes, then I'll use that to guide me along."

N=43

Question #3*: Do you conduct any form of peer-reviewed assessment?*

"Yes, we have a partner that we work with and we send our assignments back and forth for review and to read them as far as like the research papers. Is that what you're referring to? And, then we give each other recommendations or what we think that would flow better and that sort of thing."

"No in this class. Other classes that I've had where I've had friends in my class, yes, we get to together and we work together and we pass around each other's work. I also, actually, I take that back because for some essays that I have done, I have submitted it to friends of mine who have similar expertise in an area and then they give me their feedback."

"Yes, working with our research partner. We've definitely like have shared ideas and communicated like, 'What do you think of this? Is this a good idea?' But, I don't think we've ever actually assessed each other's work, like, 'This isn't right.' But, I haven't needed to 'cause I feel like I do it very thoroughly and I actually have my mom, who is a teacher and has her masters, I have her check it. So, I guess if it's not a student, it's someone checking it."

"Not so far. Not yet."

"Exactly, peer-reviewed within my own peers, probably not, I haven't had the opportunity. Part of it is my own fault because I'm probably very shy. I almost feel like the odd man out sometimes and then also the fact that I have a sister who is also a teacher and God has spoiled me so that I can actually ask her for some feedback on some of these things."

"I think we do the peer-review assessment through the presentations. Using the rubrics like we did last semester. My researcher partner and I, we do like the chapter questions and then we send each other ours so we can see, like from her perspective or from my perspective what the different questions, if we're on the right page or if we see if from a different view point."

"I would say yes. 'Cause I do send my stuff to my research partner, and then I get her opinion if I was like way off, or if I'm on target, or if I'm just rambling. I do get maybe others opinions on certain topics that maybe I was thinking about doing for like, for instance, some of the like things I was coming up with for like the math stuff. If like, what would be a good activity to do or something else. I asked my co-teachers and stuff."

"Yes, every week there are, every week on different occasions we're either texting each other in our cohort to check in for understanding, to check for understanding to say, 'Hey, this is where I think this is going. Does anybody else have any ideas about where I differ?' And then, often times we'll actually have like a study group that has nothing to do, like, wasn't set by the professor for the mere fact that usually because we're lost, the instructions are vague, the professor is not around to ask. So, together to say, 'Hey, what do you think, this is what I'm doing, can you share with me, help me, get me on the right track. Or, hey, I know that you're really super successful at this, so, can you look at my work and then tell me if I'm on the right track?' So, in an online program, it's very important, those social relationships. And, I'm also another firm believer in the cohort system because you start to rely on your cohorts for peer-assessment, peer-guidance, and to set you up for success."

"Yes. Yeah, we do. We talk about it. So far so good. I mean, a couple of times, we we're like, "Wow, why are we doing this, but, okay, it's an assignment." We have four people in my group that we meet on Mondays. Yeah, so we have. They told us in the very beginning, you know, that you should get together with your cohort. So, we're cohort seven and they told us to do a Facebook or try to meet with people in your cohort. So, we do have a Facebook and any questions we have or anything comes up, or 'Hey did anybody get this?' that goes on Facebook. But, then, I also have three other friends that come over to my home every Monday. It's more of an editing or if that person has a question, but usually it's Grammarly or Perla."

"Peer-reviewed assessment. Well, what happens is that in some of our classes, but not all of them, we've been required to make comments on discussions that have been posted. So, in a sense, that's kind of like peer-reviewed. In some of the classes we've also had projects where we have to do grade items and then we discuss one another's projects. Either things that you've done on your own and then you present it to your class and they give you feedback or we've been put into groups and then you work that was as well. So, I would say that we have done that, yeah."

"We haven't so far in the doctoral program yet. I mean, outside of, actually, last semester in the Ed Tech course, we wrote a book as the cohort and we got to review each other's work in terms of writing the chapters. So, I guess that would count."

"If it's for a class. Like sometimes in a class that we'll have, you peer-review somebody else's writing and or like assignments and then they'll peer-review yours. So, like that's the only time I've had that, like peer-reviewed somebody else's."

"Okay. Now, we are doing that for the current course. So, like for the time being what we're doing is constructing a survey and then we're working in partners and we just kind of send our first draft over and get a little bit of feedback and then kind of make corrections based on that. So, that's like one type of peer-review that we're doing right now. I conduct plenty that is informal too. I have been asked before. So, just to give you a bit of background, I was helping do some APA reviews because I work as a graduate research assistant in the Ed.D office as well. So, I'm kind of like the go to person for APA. So, it's happened before that some of my classmates would like send some work over and they're like, 'Can you just have a quick look and give us some feedback?' And, I'm working ahead, as well, in terms of my dissertation because I would like to finish earlier. So, because of that, I guess I'm like a little bit further along as compared to my classmates so some of them do come to me for like research related questions as well."

"Well, we certainly do talk about what learned colleagues or students in there, but not formally. We just talk about the course. I don't do that, no."

"We have before and we are doing it right now for our current course."

"Not as of yet, no."

"No, the only peer-review we would do is in our, discussion posts. So, I don't know if they're really assessments or reviewing, but other than that, that would be the only official thing we do. Like, I'll share my work with people in the cohort, but it's definitely not official, but we do give each other feedback on that."

"You know, that's a good question. Not formally, I mean, I would almost say that our discussion boards kind of act that way because we can certainly can comment on each other's comments and see others progress and see what they feel about our progress. So, in that way I think it's beneficial, but like I said, it's nothing formal."

"Assessing not so much. Yes, so there's about four other classmates that I have that we typically, for every assignment, are texting each other just for clarification. For example, I'm in my HR class right now and I've always struggled with HR, just even in my master's program. Now too, I'm not into politics very much and my mind doesn't go around that, but I have a classmate that's really into that so, we always kind of bound ideas. For example, for assignment one, I'm working on it right now, two of my friends sent me theirs 'cause I was having a hard time understanding the expectations. Like, I'm reading the rubric, I asked the teacher my clarifying questions, and I'm still not understanding exactly what direction. So, there about four classmates that I think we all lean on each other just to get some clarification or if they asked a question to the teacher, they'll send me the response and vice versa."

"Yes, we usually do like peer-reviews usually in regards to our projects. We give each other feedback on our assignments."

"Nothing formal. I think what I do is my classmates and I will ask each other just, you know, verbally, 'Oh hey, have you done that? Did you turned this in? Like, have you done that?' via text or when we see each other in class. But, it's not required of us from the professors."

"Yeah, so like I mentioned, in most of our online discussions, because they're online classes, we have discussions with small group members and then we also have like whole class discussions. And then, we are required to make two comments on other students. So, in a way, that is assessment. We're not being critical of the other person per say, but we are noting what somebody says and commenting on it and, you know, having more of a dialogue as opposed to just like all of us posting and then not reading anybody else's work."

"No. Not unless it's like assigned. There is one specifically like in my current class this coming semester. I was looking at the syllabus and we are required to go over each other's kind of like case studies, which is the first time that I'm actually gonna be kind of like participating in a peer self-assessment thing. Which is like myself or myself and the professor. Not really anyone like in class with me."

"Peer-reviewed assessment, no."

"Yes, especially with online classes, especially since we don't meet that frequently. 'Cause, in a classroom, you know, someone over here can say something and I can just raise my hand, but online you want that participation. So, quite frequently it is a requirement that not only do I have to respond to something that the teacher may have posted, but I also need to respond to two to three other classmates in order to stimulate more of a discussion among us. So discussion posts and then also with projects or papers because there's no such thing as like turn and trade with your partner, we would be put in small groups and it was, 'You need to put the person you're reviewing and write up your review of that person's paper.'"

"Yes, I think so. I think that's the best way since we're both in that same class, we kind of talk about it and then from their get an idea like, 'Oh, maybe she graded hard on this. The professor graded more on some point or another point.' And, I think that kind of helps. Sometimes we review each other's assignments."

"At times. Certain classes we have been broken up into groups that we have to provide feedback to each other, but it's not every class. Most of them have provided that opportunity to us."

"No, not really."

"No, not really."

"Well, we certainly do talk about what learned colleagues or students in there, but not formally. We just talk about the course. I don't do that, no."

"Oh, that one I would say we do. So, just depending on the class, especially in the credentialing program a lot of like little assignments, like lesson plans, or maybe case studies that we're working on, we do peer-reviews prior to submitting the final version. So, we are required for this class specifically, we are required to do peer-reviews for our case study, which is a big assignment that we have. It's due at the end of the semester. And then, we do even peer-review, I don't know if you would consider this a peer-review, but we post discussions on a discussion board weekly and we do have to respond to each other and not just like, 'Hey good job,' but something that is a little more in depth as far as like responding to what each other's responses were."

"When required, we do. But, otherwise, no. Sometimes we'll just have to exchange papers, and follow a rubric, and give advice."

"No"

"This far no, but the class that we're in right now we will be doing the peer-review."

"No"

"Online, yes we do."

"I think in one or two classes we've been told to do that because generally the professor's kind of taught in these two classes. Either A, we've been doing formative peer-assessments in the traditional sense where we're looking at papers and then we would comment on them. Or, we might be doing like classroom discussions where the professor would challenge us to kind of bring out more information. In which case, you're kind of like inferring that the other person would need to have more information, which is helping them improve, right."

"No, no I don't."

"Sometimes we check each other's papers or like, you know, help each other out. But, no, not like for a grade. Not formally, no."

"We do. We usually do at least once or twice depending on the projects that we're working on. We give each other feedback on our assignments."

"Yeah, but I don't know if it's like something about research or just like review for an assignment. Yeah, actually, I did that before in two classes."

"No"

"Yes, and it depends. On some classes I do, some classes I don't. I do that with the classmates that I seem to have relationships with where I am familiar with from previous classes. So, to a certain point, I do, yes."

"Not so much, but if it's required in the class, then I've done that, but personally, I haven't done that."

N=43

Question #4: *Do you believe that formative assessment builds your confidence in your ability to complete your online graduate course assignments successfully?*

"Absolutely, because you know that you're on the right path by getting the feedback and it definitely improves confidence in your final project or your final work."

"Absolutely. It helps because I'm not just, out of nowhere, I'm not just pulling something out of nowhere. I have something to go off of so that I can make it better."

"100%. I was a student that in my undergrad, I got Cs and Ds. I was told I couldn't start the program, because my grades were so low. And, in my credential program, I pushed myself to graduate with a 3.99. And, I think I got a C in like a .5 class and then, even now, I feel like I am excelling more than I thought I could."

"I definitely think it does. Formative assessment is a way of you examining yourself in a way that you are doing all these activities, you're able to see. At the beginning, you feel like this is so overwhelming, 'I'm not sure if I really will understand all of this.' But, once you start doing it, because a lot of it seems to reoccur over and over again and I believe that after a while, you start seeing why you're teacher has you do some of these things that are somewhat repetitive, but that's because it's supposed to be engrained in you. You're supposed to remember it as a teacher so that later on, you can actually implement it into your own teaching practice and not just have it be something like in the book, like how it says in the book, something that just comes in and then goes out later. You don't really keep it."

"Yes, I do."

"Yes, definitely. It does help to have others, like, help you and see where maybe, point out where you think that you could've been going down the right track, and obviously you weren't. So, you need that assessment or you need a pat on the back to saying 'Yeah, you're doing good. You're on the right track.' "

"Yes. The reason I would say that is because it provides, again, that guide. It's not like going off into the wild blue yonder and having really no clue. It's almost like a security blanket of, 'Okay, I'm on the right track.' "

"I would say, yes. I've only used the rubric so far, but definitely I think it would be a powerful tool to help ensure that I'm really understanding expectations and that I'm completing the work to the rigor and the expectations that are expected. So, it would be very helpful and beneficial, yes."

"I would say, definitely. I would say, having the indicators in the rubric is very beneficial to my achievement and my progress in the program. To have something to look at and then to look back at my assignment and check back and forth to make sure I think is very helpful, and it makes me feel confident once I submit the assignment."

"Yes. I think that, of course, you know, assessing oneself is important to see your progress. So, if you're not doing that you might not have any clue and that wouldn't be good."

"Yes, the answer is 100% yes. It's a necessity. It's an interesting concept because I don't think that any of the online courses have taught or brought up formative self - assessment and, I'm thinking, I'm guessing that the weekly discussion boards and the weekly assignments are the professor's formative assessment on the level of success that we are doing throughout the week. I personally haven't been failing or failed a class, but I did have one class where I struggled, that was really hard for me and I needed a lot of extra support, and I just felt like I wasn't getting the support that I needed from the professor because he didn't get back to me. So, the answer to the question - is formative assessment helpful for an online person, yes. So, as far some self-formative assessment, it's imperative. I would like a little bit more formative assessment, checking for understanding, and feedback from the professors. To help me to be more successful in an online program."

"Well, the assessments that we did in our leadership courses, I thought was an eye opener 'cause I thought, on some of them, I thought I was one way and I was really, I guess, it came out I was a little bit of the other way. Yeah, so, I was like 'Oh, okay, I am this.' You know. So, I was like, 'Alright.' So, yeah, it did build my confidence. I was like, 'Oh, alright, I can do this.' But, anything, unless I am missing something, but I don't think we've done anything. That's formative."

"I think it depends. I think it can. It certainly can. Yeah, I think if it's done well and it's done right, then yes, it definitely can help you."

"I believe so. I think by doing formative assessment you actually reinforce the thought of whether you got it or you didn't."

"Yes, just because. Yes."

"Okay. Well, some of those could be informal, but we'll just count them all formal assessments. And, so, sure, I'll have one colleague of mine, she's the one to proofread my work from time to time, if she has time. So, that happens once in a while. Usually, I trust the professors after I turn the paper in to give me an evaluation of what they thought how I did and it's usually pretty good, but I never give them my work beforehand and ask them to go over it where I could make corrections and then resubmit it. I've never done that."

"Yes, I think it's a very important part of any course. I believe like even if it's just informally like on my own, like doing it and getting that immediate feedback as to where I am with my understanding that has helped a lot in the past. So, and just for the self-reflection, 'cause we don't always spare the time to kind of stop and think about our learning. So, I think in terms of like reflection as well, it's really very useful."

"Yes, 100%."
"I think it's definitely a piece of the puzzle. I mean you gotta assess yourself to determine, 'Am I doing this right or am I doing this wrong?' You know, 'Am I taking the class, am I doing all my reading during the week, or am I doing it the first two weeks, or how am I breaking down all my assignments?' So, you kind of have to have those dots as you go through it."

"Yes"

"Yeah. I'm sure like it probably would build my confidence so that I like know what I'm doing, like I'm able to self-assess myself, and to see how well I'm doing, and that way I would have more confidence like the next time I had a class or just in general when I leave my grad. program."

"Yeah, I believe so."

"I think that it could because it helps kind of like rubrics. It makes you aware of like what's required and so you can determine whether or not you've completed something on your own. I do think it helps. Yeah."

"Yes and no. If you're talking about online, it's kind of hard because you don't have that face-to-face interaction, which kind of makes it hard because you don't really know what to expect. As opposed to like face-to-face, you're like, 'Okay, I know exactly what it is.' Then I can kind of gage how I've learned over the semester. Yes, if it was part of my online course it would build my confidence."

"Yeah, definitely."

"Yes"

"Yes"

"I believe it would help if I was required to do that."

"I believe so. With peer-assessments, with self-assessments, anything like that I believe that it does. Because I get to see what others think, I get to see areas that I need growth in, areas that I'm already doing well in. So, it's helpful."

"I think so, yeah. I think it will provide a kind of like motivation, you know. To, 'Okay, this time I didn't do so great. Maybe next time I'll try a little bit harder.' In a way."

"Sometimes. It really just depends on the strength that I have and what I'm reflecting on. It depends on my comfort zone. But, usually, yes, but not always."
"I think so, I mean I think where we have something formative throughout the semester, I think seems to be helpful and useful for us. I mean if we can get the results, it would provide us the feedback as far as performance."

"Maybe a little bit, but I'm not sure it builds it like a ton. I'm confident in my skills already. So, I don't know if checking on myself is building more confidence or just maintaining."

"Yeah"

"Yeah"

"I think it would be helpful, but I think without it it's fine too. Like, I think it would add to it, but I don't think that without self-assessment that I would do poorly."

"Yes"

"Yeah, I think so. Getting that feedback makes you more confident in that you know that you're submitting the right information."

"I think so, I do. Because it makes you mindful of, you know, what you're doing, and where you want to be, and how do I need to get there. So, you know, just from your questionnaire, I was like, 'Okay, let me look at the rubric now.' Just making me aware of, okay, they give us tools so that we can you know, know how to gauge ourselves. So definitely, I do, I do. Thank you."

"Build my confidence. Yeah, I do."

"In perspective, maybe sometimes you're not able to see or know what you actually are to focus in and so I think it does help you in that way."

"I believe so."

"Yes. I think that it sets clear expectations. I know I've been surprised when I follow the rubric and somehow I get a different grade. So, I think having that sets clear expectations on both ends."

"Yeah, I think it does. I think it's a good way to monitor my own progress. I think it makes it very clear to see, you know, what I still need to work on or what I've already accomplished."

N=43

Question #5*: What do you believe would be the most effective form of formative assessment to be conducted during your online graduate courses?*

"I think the most effective is just the ongoing feedback and being able to turn in a portion of the assignment early, get the feedback, and then be able to have the chance to revise it. I've never done a paper like we've done in this last class and I was really scared going through it, but really proud of myself at the end. So, just that kind of feedback really helped me a lot."

"Actually, I really like the way that my professor has established the formative assessment in the class. For example, with the Curriculum Critique, having us do a draft, and then doing the final part later, I think that's very good."

"Oh, definitely. The feedback that I got from my professor is one of the things. 'Cause at the beginning, there's certain things that you kind of maybe misunderstand about it, certain types of assessments, certain ways that you read the information. Whether it's the feedback that you get from the students, the type of assessments that it's gonna be. It's one of those things that it helps you when you get the feedback to clarify anything that you probably misunderstood as far as the reading data. That's what it was, the data."

"I guess just like a Q & A type of think like a list of questions like, 'How are you doing in your assignments?' or things like that pertaining to the actual assignments and the course."

"Self-reflection, I think after an assignment would be good. So, turning in assignments and then turning in a self-reflection of kind of where we found that rubric. That self-grading, via self-reflection, I think would be awesome. And then, to compare that to where we are with the grade from the professor to make sure that those two things coincide and know that we are on the right track."

"I would say the exact format of last semester's course with the research paper. I was 100% overwhelmed in the very beginning looking at the amount of pages, the amount of work, I didn't know what a literature review was. I thought it was the same as an annotated bibliography, and throughout the weeks of having those deadlines to turn them in, and then to get the feedback. There were things that were being caught that I didn't myself catch. There's so much. And, I was even getting my dates wrong just with APA and my bibliography. So, I was with different dates, when my professor pointed it out, I was like, 'How did I not know that?' And, so something that I overlooked because I was analyzing the grammar or looking at the little pieces. So, it was really helpful to have another eye to look at it. And, the feedback of, 'Okay, I can improve from here.' It wasn't just, 'This is your grade and you're done.' I am blown away, 'cause for me, like I didn't think that I was ever gonna get my masters just because I'm not a good test taker. The one exam we had in our last course, I think I got like a low C. 'Cause it's the multiple choice where I go, 'Oh, I can choose this or this could be this.' And, my mind goes back and forth and I argue for both answers. And, so, to be in the program and to feel like I'm actually finally, like in the beginning, I feel like when I talked to my professor, I was kind of nervous like about what to expect, 'Is this hard?' Like, 'Is it doable?' And, I feel more confident in my ability that I'm like even thinking maybe one day I'll go further than this in school, which never crossed my mind. This is really a game changer for how this formative assessment has been for me."

"I like hearing other people's like perspectives, so, discussion questions. I liked doing in previous online classes, doing the discussions and replying to other people's ideas and thoughts. I think the rubric is a really important part. And, just the examples that my professor provides us with are really good to help us, to just show us that we're on the right track. And, then, I think talking with my research partner, I feel comfortable asking her questions and if an assignment is unclear we kind of answer each other's questions in a timely manner through text messages. And, then the feedback from our professor is really, it helped me a lot especially during the research paper when either I missed something or just what I could do better and how I can tweak things to make it fit the rubric."

"I like that there's like rubrics that we can check off and then that there's like rubrics ahead of time that we can check off with so that we know that we're on the right task. And then, I like that we look at each other's and grade each other based on that so that we all have the same like format that we're all working from so that it's not judged differently. So, I really enjoy that. For something maybe new to do, nothing screams out to me really. I'm like trying to think what I've done like even other classes, but it's mostly been these formative assessments that we do here, which I enjoy and I like that there's a carry over that it's online or in classroom and it doesn't matter, that it's still the same."

"Maybe like a rubric or like a survey system that's like given like before an assignment or after an assignment. I could see that being something that's useful."

"I'm wondering if it would be possible during an eight-week course, if there was a big, like a big course survey that was sent out the students just checking in on the progress of the course. So, asking students, 'Are you progressing well?' Rather than waiting to the end of the course to do a survey on the professor and the feedback to the professor after the course if over. Maybe, I'm wondering if it could be done, like, mid-course. Where the university, as a measurement, is checking in with the students, saying, 'Are you feeling supported by your teacher? Are you getting enough feedback? Are you available to talk with your teacher within this course to complete the course requirements?' Another one that is a good standard of practice so that students know what is expected for the week is where students and professors connect to check for understanding as assignments that are new. In my experience, this is the biggest disconnect. There is no formative assessment to check for understanding in relation to students beginning new assignments."

"I think an effective formative assessment would be to receive feedback from the professor on the assignment. Feedback where they give you one area of praise on an assignment and one area for growth. So, I think having the ability and being encouraged to share a portion or all of an assignment prior to its due date to receive feedback from the professor. Maybe one area of strength and one area of growth I think would be really beneficial, and especially in the early parts of a course. Let's say in the first three weeks. It has been offered by a professor, I would say, anecdotally. If that makes sense. Or, just like as her policy and not necessarily a university policy to encourage that. I think specifically with something like, let me give you an example, like APA when students are entering a doctoral program. I think it would be really beneficial in the early coursework if students could have individual feedback on APA related issues or corrections early on. It helps the learning process more than a guidebook or a website."

"If it was offered, maybe we could do like a pre- and then a post. Like before they, before you took this course, or how did you feel. Like, let's say I am doing Human Resources 'cause that's the new course that I am taking now. Right. So, like a pre, what is your formative self-assessment on Human Resource? And, then a post. But, very simple. Keep it simple. And, then, how do you feel afterwards? Just more to show the growth. I mean, and then as a whole, as a school, maybe as a trimester. How do you think after doing this first phase? How do you feel it went?"

"It's interesting because, even in this current class that we're in, one thing that I was pointing out to my classmates was, a year ago when we were just starting this program, and I forget which class it is, I'm pretty sure it was the first class that we took, they showed us a video of Austin's Butterfly and the whole thing about what effects having constructive criticism and things like that can have on a first work or product. And, so when I think of formative assessment, I look at it like that. That if you have it incorporated in and your getting feedback from your peers and from your instructors, and things like that, that help you along the way, that's gonna help you to have a more true experience and product when you finish."

"I would like to see kind of like a self-assessment survey at the end of each course so you can reflect on and basically state what you learned in the course as well as how you feel like you did according to like a rubric. I feel like that would be a very powerful tool and you get to see the results, you know, over the course of your program online. And then, you get to determine, you know, your learning, you get to reflect on your learning as you continue through the program."

"I don't think there's a consistent program that we do that for every class, but I think that would be a great idea at the end of each class to have a summary of what we got out of it. An individual summary of what we got out of it. Not a graded assignment, but something we can share among the members of the cohort. Because what one person gets out of it another person would not get. So, it's a good thing to share."

"As far as getting something out of the course, I think that I really want to see how it's gonna benefit me. And, what I do is I'm paying so much money for this course, or this whole program, I'm trying to find out how it's gonna help me in the future. So, I'm trying to get everything I can out of it. And, so far, some were good and some were bad. As far as doing this for a grade, no. I don't do this for a grade. I do it to try to better myself. I think that is the whole point of this program. As far as the money is concerned, the cost that this is costing me to get some kind of information, I think it's whatever you put into it. So, if you put in a lot of work, you're going to get more out of it. If you start putting in whatever is required of it, you know, you'll get data out of it. So, for me, I think I do try to get the most out of my education that's costing me so much money, how's it going to help me in the long run. Just making me a better person. 'Is this going to raise my confidence? Is this going to give me some more knowledge?' And, I'm finding that the professors are not really doing much and they're just giving us the assignments and we're doing all the work. Meaning, they're not really teaching us much, they're just giving us assignments, and we're doing all the work here, and we're doing all the reading, and I guess that's the way it's supposed to be. You know, we're supposed to be learning on our own. I don't know what they're giving us. I honestly don't know what these professors are giving us besides the assignments and feedback on the assignments. Certainly receiving their feedback is helping me, you know, in the direction of what they were expecting on the assignments. So they say, 'Well, you did pretty good on this part, and you then did pretty good on that part.' But, I'm thinking about how it's gonna help me in the long run when I'm done with all the coursework and I'm there in a professional setting trying to be a leader of some kind. Is this really gonna help me in the future? And, I think it's whatever you put into the work. So, no. The value I'm getting out of the course is the work that I'm putting into it and it has nothing to do with what the professor thought how I did in the course. So, no. I'm trying to answer your question. So, their feedback is not very helpful at all. That's what I'm trying to say. The reason being is because I don't value the grade too much. I value the content and the knowledge that I'm getting from it. I'm not focused on points on those assignments. So, you know, if this is the direction that they wanted me to go, that's fine. They're giving me points on what they thought I should have been learning, but if I learn much more than that and beyond that then I'm gonna value that more than their opinion."

"I do think the rubric is very helpful. In my second class, the professor provided a sample paper, which really was very helpful as well. Because, rubrics although they're great can still be interpreted in a variety of ways. So, seeing a sample, and not perfect, but it just helps ensure that I'm aligning myself and my thoughts in the direction I want to go with what the expectations are. And, in the second class, we have actually received feedback on our discussion board posts. Very explicit, specific, personal feedback, and just receive that, and that was very helpful as well for making refinements and really understanding, especially like APA style. I've appreciated it. So, I think that those are very helpful and continued feedback from professors on discussion posts, and rubrics, and samples would be the most helpful for me."

"I think it would really depend on the context. I don't think there's like one type that would be good for like across all of the courses in like different contexts. So, I feel that, if like for example, for research seminars, I think it would be great to have like APA quizzes added. I know there are some already. So, just like some self-tests that the professor would ask the student to do. Not that the professor would look at it, but kind of like encourage the students to do it. So, I think that would be one. Maybe like even the diary, the online diary that we've used for one course, but I think that was graded. Yeah, that was graded. So, what I'm thinking is that if we had more of these, and not necessarily graded, but just kind of like that little space where we can talk a little bit about our learning, you know, and the professor can look at it as well, you know, and kind of if there's any area, like gray area something that we've not understood then we can just write it on there and maybe writing it out can help with our understanding as well. So, I find like self-reflections very important."

"I think we get some, and I guess you could call it formative assessment, but I don't feel like it's official. We get some feedback, like if we do a project or a paper, we'll get some feedback, but typically it's not in depth. It's after it's graded, which is more summative. Yeah, it would be nice to get that as we go because I know, as a group, when we're working, a lot of this is new to us as a whole and we're kind of trying to rely on each other's knowledge and we find that we don't have a lot so we're trying to piece the holes and it would be nice to be able to have that feedback from our professors to us giving us some foundation and grounding and making us feel like we're on the right track, I guess. A lot of times I'm not sure I'm on the right track."

"You know, I don't know if I'm the best person to answer that. I'm actually, I'm not a teacher and I don't have any teaching background. So, I am not necessarily familiar with all the pedagogy on formative assessment other than, you know, what's been done in our coursework. My background is actually in leadership, which is why I chose this program 'cause it's in leadership. So, I don't know if I have the best answer for that."

"I think what's been most helpful is definitely professor's feedback in drafts that then go into the revisions that I make for the final project because I like really appreciate that kind of feedback because it directly effects my writing and my project makes sense. So, I think that is really valuable feedback. I usually really appreciate that. Yeah."

"Okay, so, I would like to see, like I know that it's like completely online, but it's kind of like the parts of having online class, you don't have to come in. But, I would like to see that we do meet more than once or twice a semester so that we can kind of gage where we are and if we have any questions, it's not just through email. We can actually like hold a conversation with a professor. Similar to how we're doing now."

"I honestly think a hybrid of both is very helpful. So, I don't think it would be one or the other. I think you know feedback from the professors, feedback from peers, and self-assessment is really something that is very helpful."

"I think what's been effective that I've noticed, I've only taken four or five classes, so I'm still relatively in, is I've noticed most of our teachers in our first synchronous session, so that's maybe week three, they carve out time, during or synchronous, session to go over the assignments. I think that has helped a lot because it's before an assignment is due, but then they'll clarify, 'Does anyone have any questions?' And, then we can kind of go through it like, 'It says this on the rubric.' I think that has helped a lot because by week three and the first assignment is not due until week five or six, that's still enough time for us to take that feedback and work into those assignments. I think, just 'cause it's an online class it's been hard. I think all of the teachers have been accessible via email, so that's been very nice if I have questions, you know. And, I think those two are the most practical with the kind of class we have, which is online and it's not necessarily in person, I think those two have helped."

"I think, so, the website that we use is Moodle and I like when teachers keep that updated so as far as like gradings regarding like quizzes, or projects that we turn in. And, that kind of helps me out too to kind of check how my progress is. So, I feel like that's a helpful tool to kind of keep on checking to see how my grades are going."

"I really liked my graduate program. I did enjoy, but it was tedious at times counting like how many people did I respond to, and did anybody respond to my message, and having to go back and like check all of those things, but it was very helpful. And, it was more clear to my professor to go back in and look and go, 'Oh, these kids went down a rabbit hole, completely off topic from what I wanted to get out of this.' Or, she could be like, 'Yes.' And, she could add a comment or something like that into there and continue our conversation or just be like, 'Hey, I really appreciate that you guys did this.' So, something that's already in place, but it really helped me. So, I post assignments and people within a particular group respond to my progress on that assignment before it's turned in as final."

"Maybe like a small questionnaire or even like having comments after we get like a grade or something. Or maybe like having, it doesn't have to be mandatory, but you know we the option to have a questionnaire about what quizzes were maybe graded on or the writing assignments and what the teacher maybe thought was like a better answer. Kind of like a little bit more feedback on that in a way. And, then maybe the whole class can somewhat have access to it in a way."

"The most effective form of formative assessment? I think one of them is that it's kind of like break it down on the big assignments. Like, you have certain deadlines. So, they kind of allow you to work at a pace that allows you to kind of have some time to reflect and self-correct your own work while the semester goes on versus just getting like a deadline to turn it in without any feedback."

"Yes, I think probably like in parts where the professor gives feedback. So, it's like you said that it's not just the grade. You have room for improvement and you get to see what changes you need to do."

"Let me think. Probably quick feedback. I think that would be best. I think both on projects before they're finalized or after they're finalized. What I mean by that is that as I'm processing something is it aligned to what is expected of me to do? So, that's where the before would come in. And then, once I've done it, 'Did I do it well? Are there areas that I could do better?' You, know that kind of thing."

"Okay, yeah. I think receiving feedback from the professor is really, really important. Not all professors do it. Most of my professors do. And, so that gives me a lot of, kind of like, it guides what I've done well, but then also lets me know what I need to work on."

"I think what they're doing is okay. So, like, we get like weekly quizzes based off of readings that we're doing. Some classes have a final exam. Some classes, it's a build-up of a huge paper, which would be their version of the formative assessment. I guess it would, I mean they are effective. So, typically, when we do have, for any class, that big of a case study assignment, we do get feedback from our professors for each time we submit like a rough draft. So, they're split up into parts and then depending on, you know, what that part is, you get a little bit of feedback and then that should help build like a nice formal, final product."

"Oh, the most effective form of self-assessment. I guess just, maybe, sort of comparing what you have against what has been laid out for you sort of just to make sure that you do know what you're doing 'cause if you don't read everything carefully, it's easy to, you know, completely misunderstand. The projects, I would just say that comparing yourself against the expectations or a rubric that has been laid out."

"The best way. Maybe like a rubric, like a survey type of thing. Like a survey would probably be the best way."

"I guess the most helpful for me is like, is feedback and the rubrics are helpful. Like, knowing what is expected and kind of where you're falling on that. But, I mean, without the teacher's feedback, I mean, I don't really think it's as effective like just doing it on your own. I think it's helpful, but I don't think without the teacher or peers. Peers can do it with you too. But, yeah."

"If it's something that's already being done, personally, I like the idea of the self-assessments against the rubric, but that's because like I kind of get rubrics, right. But, I know for some people that might be difficult in which case, I think it would be effective for the professor to jump in and help out with that as well. Possibly to offer like the rubric in more simple language or to give like progressive feedback on papers like maybe not for all students at once, but like scheduling it so that way the professor has an easier time as well. Kind of like how with a lot of in class meetings, they would schedule like, okay, well, person A is going to present this week, person B is going to present next week, right. Like, maybe the professor could meet with students one-on-one to discuss their papers like one at a time or something like that. And, I think doing things like that would really help students kind of understand what direction to take their papers in. 'Cause, often I see students who if they don't do that, I mean classmates, right. Their papers would go off in a wildly different direction or it would go just totally wrong and having that supervision would really help."

"Yeah. I think when professor provides immediate feedback. That's what's good."

"So, I believe it would be a combination of both feedback and also, I think the feedback would probably be the best because not only would it help in terms of self-assessment, but it would also help in terms of what areas I'm struggling with and what areas I'm doing well."

"I guess the fact that if it's like individualized if the teacher is reviewing whatever was submitted. And, it's not just like broad in the sense that if I'm answering the question that's being asked. The question that I'm answering, she's relating it to what I'm asking. Not making it broad. Just having the teacher respond to me, but I guess she does that thought. I'm sorry, I don't know if I answered the first question wrong now if I'm having trouble answering this one. They do make sure they're monitoring me specifically. Whatever my responses are, they tell me what I'm doing wrong and that way I can make better decisions in answering the questions later on."

"I think, definitely, a lot of the teachers will give samples of, you know, what they're looking for. And so, actually seeing a sample of it is very helpful for me. But, I do think that when we go over the syllabus, we should go over the rubric. You know, and just ask the class like, 'What do you think this means?' Like, what's an example of this and to go over it, right. I mean, obviously, once is enough, but just so it's clear in our minds where we want to be and how we're gonna do it."

"I think like the peer-reviews are good. Because also, we're actually able to give that feedback to each other as well and just kind of reflect back on it. And, having also the professor afterwards give us more of the details or maybe just kind of focus more in what we actually need to focus. So, that's a way that we actually do a lot of our reflection as well."

"So, as far as I just took an online class, I just started like last semester. So, I feel like I'm more comfortable when like the professor gives me feedback, which I learn what I should write about instead of something with little information or something. And, sometimes like the sentences that I already wrote, sometimes the professor will explain to me why to find like more information or answers. And, that's actually like helped me a lot when I fill up another assignment in the future."

"I think direct feedback is really helpful, especially for big assignments when it's broken down into parts I think. And, there is a rubric attached to it, I think that's helpful as well as receiving, you know, feedback in the form of like specific comments made on certain parts of the assignment."

"Oh, I really like how we're given kind of like a scaffold to turn in type of date with feedback. We're able to turn it in at specific times throughout the course. And then, we get feedback so that we have the best grade that we can get. I know for two classes, one class I had that and one class I thought I had that. So, I didn't get such a good grade on the class where the initial turn in was the last grade you would get. Whereas, in the other class, it was kind of like feedback, feedback, feedback, and then your ultimate grade."

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