

# The Value of Formative Feedback in Graduate Online Courses

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As the number of online educational courses continues to grow, it is imperative that we also incorporate effective research-based practices such as the use of formative assessment. This study aimed 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. Qualitative findings reflected a positive relationship between formative self-assessment, academic achievement, and student self-efficacy. Formative self-assessment provides online educators a tool to enhance course effectiveness and overall learning.

Research-based best practices show a positive relationship between student learning and formative

assessment (Frey et al., 2018; Ruland, 2011; Voelkel, 2013). Formative self-assessment involves the capacity to monitor, evalu-



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ate, and know what to do to improve performance (Moss & Brookhart, 2009). Formative assessments and high-quality feedback have become increasingly challenging to offer within the context of growing class sizes and the online learning environment (Ko & Rossen, 2010). 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). Formative assessment can allow students to evaluate their achievement status in a timely way to see if the learning target is being met and make necessary adjustments needed to reach those goals (Spady, 2019; Widiastuti et al., 2020). When students actively monitor and regulate their learning, a dramatic increase is seen in their knowledge gain and assessment scores (Joyner & Muri, 2011).

When compared to summative assessment, several researchers believe the formative assessment is more valuable in evaluating student learning and leads to learning retention (Andrews, 2011; Henry, 2011). Formative self-assessment stems from metacognition research. When students know what to do to improve performance due to the ability to monitor, evaluate, and cognitively process skills or events, metacognition guides them (Livingston, 2003; Paris & Winograd, 1990). Self-assessment occurs when after monitoring and evaluating their learning, students identify strategies to improve their ability to reach their academic goals (Spady, 2019). When online learning has become the norm, there is a significant need for valid and reliable assessments that measure critical thinking and knowledge acquired. Students can take an active role in their learning by using formative self-assessment. Moreover, faculty can scaffold high levels of reflection in electronic

discussions and assignments to enhance formative self-assessment (Whipp, 2003).

To support students' learning, it is hypothesized that faculty must provide formative feedback. Shute (2008) defines formative feedback as "information communicated to the learner that is intended to modify his or her thinking or behavior to improve learning" (p. 154). The researchers sought to discover if there is value in formative feedback in graduate online education courses. The research questions included (1) What is the connection between formative self-assessment and the various assignments in online graduate education courses? and (2) What is the relationship of formative self-assessment to student self-efficacy in online graduate education courses?

## SETTING AND PARTICIPANTS

The sample was comprised of 43 students enrolled in online graduate education courses from three accredited universities (two private and one public) in southern California. All three online programs utilized a blended model combining asynchronous and synchronous sessions. All students were included in the chosen courses for the research study.

The demographics of the 43 graduate students included 16.7% (7) 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 teaching credentials represented among the participants, with 16.7% elementary, 14.4% secondary education, 57.1% special education, and 11.8% other.

## **INSTRUMENTATION**

The qualitative instrument was a five-question interview conducted individually on the Zoom platform. All interviews were recorded and later transcribed.

1. Are you required to complete formative self-assessments 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 confidence in your ability to complete your online graduate course assignments successfully?
5. What would be the most effective form of formative assessment to be conducted during your online graduate courses?

## **DATA COLLECTION AND ANALYSIS**

After the interviews were transcribed, the transcriptions were forwarded to the participants for member checking. Member checking establishes credibility by returning the interpretations to the participants (Lincoln & Guba, 1985). Validity refers to the inferences drawn from the data (Hammersley & Atkinson, 1983). In qualitative data, researchers use a lens verified by the views of the participants in the study, in this case, the graduate students. "With the lens focused on participants, the researcher systematically checks the data and the narrative account" (Creswell & Miller, 2000, p. 7).

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 struc-

ture (or essence) of the experience" (p. 226). While this represents the overall coding structure, the embedded structure follows Moustakas (1994). Moustakas' suggestion (as cited by Creswell, 2013) is to "Write a brief creative prose 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 first author's experience with the phenomenon was incorporated into the narrative. Once the coding process was completed, an audit trail (Creswell & Miller, 2000) strengthened the study's validity. The second author examined the coding structure, the narrative account (Guba & Lincoln, 1994), and the trustworthiness of the findings for data verification.

## **RESULTS AND DISCUSSION**

During the interview, the graduate students were asked, *Are you required to complete formative self-assessment in your online graduate courses?* Of the 43 participants, 31 responded with no, and 14 responded yes. If asked, *if not, do you believe this would benefit you academically if it were required?* Twenty-five participants shared an overwhelming *yes*. Several sample comments from the one-on-one interviews are located in Tables 1 and 2. The participants in this study did not feel formative self-assessment was a requirement in their graduate courses. One participant stated, "I do not think it's ever been a formal requirement ... I think maybe it's been implied, or maybe some tools have been suggested, but it's never been required." Only five people indicated some type of self-assessment. One person shared, "I have completed a self-assessment. Yes, depending on the course."

A pattern that emerged was that formative self-assessment was not mandatory in the students' graduate courses. However, there was a belief from the students that formative self-assessment would be benefi-

cial to them academically. There was an overall belief that formative feedback from the instructor, their peers, or a colleague builds confidence. Before submitting a final project or assignment, students appreciated professor precomments or pregrading to ensure they were on track to program themselves for success. The students discussed the fact that they do conduct informal formative self-assessments, typically using the course rubrics.

When participants responded that they were required to complete some form of formative assessment, they were asked how it was conducted. Twelve of the 43 participants offered examples, and five talked about reflection as a form of formative self-assessment. Three participants and three others discussed rubrics and the formative assessment of written responses and discussion questions. One graduate student reported, "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." Another participant said, "It is just part of the process." Not all of the participants understood what formative assessment was. Seemingly confused, one participant said, "Isn't that where... 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 ... we also evaluate our peers as well."

Participants were asked, *Do you conduct any form of formative self-assessment on your own if not required?* Fourteen respondents said they used the course rubrics. Other comments included feedback, working with a research partner, using the course syllabus, checklists, examples, reflections, self-monitoring, quizzes, and surveys at the end of a course. Samples of participants' comments are located in Table 3.

**Table 1. Sample Responses to Interview Question #1:**

*Are you required to complete formative self-assessments in your online graduate courses?*

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

"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"

"Self-assessments ... there's always a reflection part of it."

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Note: Selected responses from  $N = 43$ .

**Table 2. Sample Responses to Interview Question #1 Follow-Up Question:**

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

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"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."

"Absolutely. I'm a big believer in goal setting, checking for understanding, making sure that the professor is checking in with students."

"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."

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Note: Selected responses from  $N = 43$ .

**Table 3. Interview Responses: Question #2:**

*Do you conduct any form of formative self-assessment on your own if not required?*

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"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 nonpersonal, you know, in writing and those types of things. This as a guide."

"We do as a cohort. We bounce ideas off each other and we talk to each other about..."

"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 make like checklists for myself and things like that, but nothing super formal."

"Mostly, just by using rubrics..."

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*Note:* Selected responses from  $N=43$ .

**Table 4. Interview Responses: Question #3:**

*Do you conduct any form of peer-reviewed assessment?*

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"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."

"Yes, working with our research partner."

"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."

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*Note:* Selected responses from  $N = 43$ .

When asked *Do you conduct any form of peer-reviewed assessment?* participants had mixed responses; 16 said "yes" immediately, and 15 reported "no." Three participants discussed working with research partners, and six mentioned checking for understanding or sharing ideas with colleagues. One person said they met weekly with a few cohort members, and another said they had written a book with peers. Two persons mentioned discussion boards.

When asked, *Do you conduct any form of peer-reviewed assessment* the responses were varied, as indicated in Table 4. One participant said, "I send my stuff to my research partner, then I get her opinion." Many participants commented on the online discus-

sion board being the primary place to comment on peer writing or receive peer input on their discussion posts. No one mentioned peer review as a component of an assignment in any essay or paper assignment, although some shared that they ask for feedback on their own.

When asked, *Do you believe that formative assessment builds confidence in your ability to complete your online graduate course assignments successfully?* The most widely held response was 38 participants responding "yes" (see Table 5). This overwhelming nod to formative self-assessment building confidence affirms the importance of including formative assessment in graduate classes. Table 6 displays examples of the

**Table 5. 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

Note: N = 43.

**Table 6. 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."

"I would say definitely ... having the indicators in the rubric is very beneficial to my achievement and my progress in the program ... it makes me feel confident."

Note: N = 43.

positive responses and comments related to the personal feeling that they can accomplish the formative assessment. However, it is concerning that not all graduate faculty use formative assessment in their courses. Suppose it is known that using formative assessment indeed builds student confidence. In that case, faculty

need to be more intentional about including such opportunities in the course outline and during individual class sessions. The responses to Tables 7 and 8 give insight into what students believe should be provided to promote the most effective support. Twenty-four respondents commented on the importance of feedback in

**Table 7. 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
Midcourse survey on understanding and progress	1
Pre- and postsurvey to show growth	1
End of course survey/reflection	5
Discussion posts	2
Synchronous time for questions	2
Grades kept current	1
Unsure	1

Note: N = 43.

**Table 8. 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, 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."

Note: N = 43.

general. The feedback can come from the professor or peers at different stages in large projects. Several commented on the ability to turn in an assignment early and receive feedback as a way to strengthen the work. Seven participants felt rubrics provide intentional formative feedback.

The data from the interviews revealed emerging patterns to support self-regulation (Heritage, 2013) and metacognition. These cognitive processes support learning and knowledge retention, and efficacy beliefs are key to self-regulation. "Paying close attention to one's thought patterns and actions can contribute to self-directed change" (Bandura, 1986, p. 337).

Metacognition is the concept of thinking about one's own actions or in the case of course assignments, being able to monitor and evaluate one's own work and know what to add to improve performance and ultimately academic success (Flavell, 1979). The interviewers discovered that formative self-assessment was not a component of many of their graduate courses and the participants believed this addition could benefit them academically and motivationally. The motivation findings are similar to that of Leenknecht et al., 2021.

## CONCLUSIONS

The study answered both research questions: (1) What is the connection between formative self-assessment and the various assignments in online graduate education courses? and (2) What is the relationship of formative self-assessment to student self-efficacy in online graduate education courses?

The connection between formative self-assessment and the various assignments in online graduate education courses was revealed mainly when the participants shared their initial lack of understanding of the term formative assessment. Once the interviewer clarified the term, positive trends emerged. The participants reflected

and described their participation in formative self-assessment and their need for additional components of various assignments to be strategically designed by faculty to embed peer support and professor feedback. Formative assessments assist professors in deciding what to teach next and formative self-assessment helps the learner know what to study (Frey & Fisher, 2011). The participants in this study voiced the belief that formative self-assessment builds their confidence. Beginning with learning objectives, the professor can provide steps needed to achieve in the course. Students can then connect the learning objectives to the assignments in the course leading to a perception that they accomplish more and are doing well in the class (Stiggins, 2017). This self-evaluation leads to self-efficacy (Moss & Brookhart, 2009; Zimmerman & Schuck, 2008).

The relationship between formative self-assessment and student self-efficacy in online graduate education courses is positive. Self-efficacy is the process of one believing they can successfully perform a task (Paris & Winnograd, 1990). This belief can lead to student interest, personal motivation, and academic achievement (Stiggins, 2017; Stiggins & Popham, 2008). Self-efficacy is a powerful predictor of academic achievement as the student believes they can accomplish the task at hand and have confidence in their abilities (Green, 2003). Faculty can help student self-efficacy by providing tools and activities where students take ownership of their own learning and use many strategies to self-regulate content and impact learning (Zimmerman & Schuck, 2008).

The participants described a form of a learner-learner model. Hollins-Alexander (2013) coined the term learner-learner to refer to web-based learning communities where there is a culture of collaboratively coconstructing meaning of what is learned using technology as a conduit for mutually supported knowledge gain.

## RECOMMENDATIONS

As faculty design courses and revise existing syllabi for online learning, it is recommended that the course outline include formative assessment and formative self-assessment with feedback from peers and professors at various stages during the course. Consider building into the next course a peer review component. Use breakout rooms or think-write-pair-share strategies to connect peers and intentionally guide feedback. Add a place for both peer and professor feedback in online discussions. Take the time to explain what formative assessment and formative self-assessment are and how these simple concepts can enhance the depth of knowledge for the learner (Asamoah et al., 2022).

Formative assessment can be designed to motivate students to want to achieve and learn beyond the course objectives (Stiggins, 2017). Providing weekly reminders of what is due and where to submit, as well as helpful hints for successful completion, are appreciated by students. Where possible, highlight the intended learning targets, so students understand clearly what is expected of them (Stiggins, 2017). Prereading the discussion board and using some of the student work in the presentation the following week is motivational to students, and it demonstrates that the professor has read the material! The use of engaging tools such as Kahoot (<https://kahoot.it/>) and Socrative (<https://www.socrative.com/>) give the learner immediate feedback while motivating a game format (Reeves et al., 2018).

Please encourage students to use their learning network to give input or edit their assignments before submission. Teach students to use Google Docs and other shared software for this purpose. They can then incorporate this valuable feedback into the document. Ask students to independently read an informative text and write down key thoughts or highlight critical concepts, then group students in class and have

them share those important, interesting concepts.

Rubrics allow students to self-reflect easily, giving them clear direction on what to expect when an assignment is scored. Consider asking the students to evaluate themselves using the same rubric matrix as the instructor and take time to discuss their self-evaluation. Take time to write descriptive comments on student work, allowing them to visualize what they did that was effective and what the following path will be. Ask them to either articulate their next steps to the instructor. When a comprehensive assignment is given, provide the rubric upfront and ask the students to discuss with each other or small groups how they might accomplish a particular task; then, write notes to themselves on how they will proceed.

All the ideas in this recommendation section came directly and indirectly from the interview data. The common theme in all responses was an eagerness to learn and a willingness to be engaged with the use of formative assessment. Formative self-assessment can motivate students to want to achieve, and faculty must provide various avenues for self-assessment. Be innovative, as there is value in formative feedback in graduate online courses.

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