

Exploring online graduate students' responses to online self-regulation training

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Abstract

In this study, online graduate students participated in four brief online self-regulatory trainings for self-efficacy, achievement goal orientation, learning strategies, and attributional thinking. These variables are critical to success in learning environments, but perhaps even more so in the online academic environment (Rakes, Dunn, & Rakes, 2013). Self-regulation also plays an important role in curtailing dropout rates that tend to be high for online classes and programs (Lee & Choi, 2011, 2014). Trainings included brief explanations of these variables and self-reflection activities. After the completion of the course, students were asked to reflect upon the impact of the trainings on their self-regulatory abilities. Qualitative analyses identified student-perceived self-regulatory strengths and weaknesses. Moreover, findings revealed that these online students believed they improved with regard to these self-regulatory weaknesses after completing the four brief online trainings. The findings of the current study suggest that with limited effort, online instructors may help the understudied population of online graduate students improve upon these essential learning variables.

The purpose of this work was to garner a better understanding of and to improve online graduate students' self-efficacy, goal orientation, strategic learning, and attributional thinking through a series of brief online training activities. These variables support successful learning outcomes through planning for learning, active engagement in the learning process, and reflection upon how to improve future learning experiences and achievement (Hübner, Nückles, & Renkly, 2010; Zimmerman, 1998, 2000a). There is a body of literature that indicates that some of these variables are responsive to training (e.g., Doctor, 2004; Greene & Azevedo, 2007; Zimmerman, 2000b), but not all the variables targeted in this study have been explored, the variables have not been collectively explored in a comprehensive training program this, nor have the variables been studied in the online graduate.

Because academic self-regulation is critical to the online environment and significantly influences academic achievement at all educational levels (Zimmerman & Kitsantas, 2014), it is critical that educators better understand online graduate students with regard to these variables and how to help students improve on these important learner beliefs and behaviors. Therefore,

the results of this study are intended to help graduate level instructors better understand online graduate students' perception of the impact of a series of brief trainings on the four target variables, their perceived weaknesses related to each construct, and the goals they set for themselves upon completion of training. What follows is a discussion of the need for the study and a review of each of the targeted variables including a discussion of the academic impact of the variables and any research regarding training the variables.

Review of the Literature

In this study, graduate students' self-efficacy, goal orientation, strategic learning, and attributional thinking were targeted through a series of brief online training activities. Each of the explored variables is part of Zimmerman's (1998, 2000a) cyclical three-phase model of self-regulation, which provides the theoretical framework for this study. Collectively, academic self-regulation may be defined as a multi-faceted, largely volitional, process in which a learner's thoughts, beliefs, feelings, strategies, and behaviors are directed toward the attainment of an academic goal, monitored, and refined for future learning cycles (Corno, 2013; Schunk & Zimmerman, 1998). The various components of the full self-regulatory model are linked to persistence in the face of obstacles and, ultimately, academic achievement (Zimmerman, 1998, 2000a). Persistence and high levels of academic achievement are critical to successful completion of graduate course work and programs. Self-regulatory deficits often result in less desirable outcomes (Hübner, Nückles, & Renkly, 2010).

Fortunately, research has shown that some components of self-regulation are responsive to training (e.g., Doctor, 2004; Greene & Azevedo, 2007; Zimmerman, 2000b), but this body of literature is primarily focused on brick-and-mortar K-12 student and undergraduate student populations. This research is also frequently focused on task specific efficacy such as reading (Guthrie, Wigfield, & Perencevich, 2004), writing (Graham & Harris, 2005), mathematics (Butler, Beckingham, & Lauscher, 2005), and science (Cleary, Platten, & Nelson, 2008). The extant literature does little to explore self-regulation training for online students or graduate students, and does not address all of the variables of interest in this study.

Perhaps graduate students have not been studied because it is assumed that, if they have reached the graduate level of education, they must be able to successfully engage in academic self-regulation. However, if this were true, it is unlikely that graduate level graduation rates would remain so low (Sowell, Zhang, Redd, & King, 2008). Failure to graduate negatively impacts students' lives, but the low number of graduates also puts graduate programs and faculty at risk (Lovitts, 2001; Smallwood, 2004). Online courses are even more susceptible to student dropout (Lee & Choi, 2011), and self-regulation is predictive of retention. In addition, online courses often provide less structure, less face-to-face interaction, more autonomy, and subsequently, more opportunity for self-regulation failure such as procrastination (Rakes et al., 2013; Steel, 2007). Better understanding online graduate students' self-regulatory abilities and providing a means of improving graduate students' self-regulation may help to increase academic achievement, persistence, and perhaps ultimately help students achieve the goal of earning a graduate degree.

Self-regulation literature may be useful in understanding these issues and is critical to the design of the current study. Zimmerman's (1998, 2000b) model of self-regulation was utilized for the development of training materials, timeline for trainings, and interpretation of results. The Zimmerman's model is situated in social cognitive theory. His model consists of three cyclical

phases—forethought, performance control, and self-reflective. As a learner completes a complete learning cycle, a feedback loop is created that then informs the next learning cycle. For example, evaluation of performance on one test will inform how a student prepares and performs on a subsequent test.

Forethought Phase

The forethought phase is the first phase of the model. In this phase, the learner sets the stage for what will occur in the learning cycle (Cleary & Zimmerman, 2004). The learner will establish what he or she wants to accomplish, deciding if the goal is to outperform classmates or to master the content presented. Additionally, the learner determines if he or she possesses the skills, desire, and time to successfully attain the established goals. The two variables of interest in this phase for the current study were self-efficacy and achievement goal orientation.

Self-efficacy. Self-efficacy is a future-oriented belief that one possesses the necessary skills and abilities to do what is required to realize a successful outcome or to achieve a preordained level of attainment (Bandura, 1997, 1977). Theory and research indicate that self-efficacy influences a myriad of motivational variables, such as effort expended, persistence when challenged, overcoming setbacks, exercising control over life-impacting situations, and ultimately academic success (Bandura & Schunk, 1981; Pajares & Schunk, 2002; Zufano et al., 2012). Bandura (1977) described four sources that inform one's sense of efficacy and that may be utilized to improve self-efficacy—performance accomplishments, vicarious experience, verbal persuasion, and physiological states.

Both theory and research support that self-efficacy is a malleable variable that may be improved through training and instructional design (Zimmerman, 2000a). For example, de Caso and her colleagues found that self-efficacy training for writing increased self-efficacy as well as writing performance for a sample of 60 elementary students with learning disabilities (de Caso, Garcia, Diez, Robledo, & Alvarez, 2010). A number of studies have been undertaken to examine how to improve undergraduate students' self-efficacy. For example, Hood (2013) found that a brief workshop that focused on psycho-education and learning strategies significantly improved efficacy for 10 students enrolled in a statistics course, and she found that the improvement continued 10 weeks after training. Friston (2008) found that class-related journaling improved undergraduate students' self-efficacy. Although there is a wealth of evidence that self-efficacy is a trainable learner attribute in a variety of populations, this body of research does not examine how to improve self-efficacy in the online graduate education population.

Achievement Goal Orientation. In addition to self-efficacy, achievement goal orientation was explored in this study. Students' goal orientation reflects their attitude toward learning in a specific domain or their perceived purpose for engaging in a task (Ames, 1998; Pintrich, 2000). Elliot and McGregor (2001) developed a four-part framework that describes types of achievement goal orientations. In this framework, goals are divided along the mastery-performance dimension and the approach-avoidance dimension, creating four possible goal orientations: mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance.

A mastery-approach goal orientation indicates that the individual wants to learn all there is to learn about a topic and to master a skill set. This is an attitude that reflects a desire to be the best he or she can be. A mastery-avoidance goal orientation manifests as a motivation to avoid not learning what there is to learn. This is an attitude of not wanting to miss out on understanding material or mastering a set of skills. The performance-approach goal orientation indicates a

desire to appear competent to others, wanting to outscore peers and appear intelligent. The performance-avoidance goal orientation denotes that an individual wants to avoid performing comparatively poorly, wanting to avoid looking dumb.

Achievement goal orientation is a powerful influence on achievement outcomes and learning (Elliot, 1999). Goal orientations may be swayed through training and influenced by instructional design (Elliot & Church, 1997). There is a dearth of information regarding how to improve goal orientation in graduate online students. However, work with the K-12 population in the face-to-face classroom setting and some literature on professional training supports the hypothesis that goal orientation is malleable.

For example, Noordzij and her colleagues found that goal orientation training improved unemployed adults ($n = 223$) goal orientation and improved re-employment rates (Noordzij, van Hooft, van Mierlo, van Dam, & Born, 2013). O'Keefe, Ben-Eliyahu, and Linnenbrink-Garcia (2013) found that, for a sample of high-ability adolescents ($n = 126$), instructional design powerfully influenced students' achievement goal orientations. Specifically, they found that a mastery-structured learning environment significantly increased mastery goal orientations while decreasing performance goal orientations during a summer program. While mastery goal orientations remained high months after the completion of the program, performance goal orientation levels returned to baseline six months after completion of the summer program. While evidence indicates that learner beliefs and behaviors in the forethought phase are trainable, this literature does not extend to the online graduate student population.

Performance Control Phase

In the second phase, performance control, the learner actively engages or fails to engage in strategic processes, driving attention, and action (Cleary & Zimmerman, 2004). Strategic learning involves the use of metacognition, thinking about thinking and thinking about what one knows, does not know, and how knowledge developed, as well as the use of a variety of learning strategies such as managing study time and environment, highlighting during reading, or making note cards.

Learning strategy use is associated with positive academic outcomes for students (e.g., Bembenuddy, 2008; Cleary & Zimmerman, 2004). For example, Greene and Azevedo (2007) found that targeted instruction helped improve middle school and high school aged adolescents' use of learning strategies when using hyper-media ($n = 182$). Lavasani, Ejei, and Dawoodi (2013) found that learning strategies training resulted in significant increases in those skills, academic engagement, and anxiety reduction for ninth graders enrolled in an Arabic language course. Hübner, Nückles, and Renkly (2010) found that the use of a learning journal, in which learning strategies were modeled, remediated high-school students' ($n = 70$) learning strategy deficits. No work to date was found that sought to help improve strategic learning in online graduate students.

Self-Reflection Phase

Self-reflection is the final phase of Zimmerman's (1998, 2000b) model of self-regulation; in this phase, the learner reflects upon and interprets learning outcomes and efforts. Attributional thinking was the variable of interest for this phase. Attributional thinking involves the determination of a behavioral outcome as a success or failure. Next, the individual experiences positive or negative emotions related to the interpretation of the consequences of the behavior. Finally, the person seeks to understand and explain why the outcome occurred (Graham &

Williams, 2009). Individuals may attribute these perceived successes or failures to things such as ability, effort, context, or luck (Hamilton & Akhter, 2002; Lefcourt, Von Baeyer, Ware, & Cox, 1979). Attributional beliefs impact future self-regulatory behavior and academic outcomes (Graham & Williams, 2009). Attributional thinking may also be improved through targeted instruction (e.g., Berkeley, Mastropieri, & Scruggs, 2011; Doctor, 2004).

However, much of the attribution training research has focused on younger students and those with learning disabilities. Robertson (2000) reviewed 20 studies and concluded that attribution retraining programs improved attributions in children with learning disabilities. Berkley and her co-researchers (2011) found that a reading comprehension strategy program paired with an attribution retraining program resulted in improved academic performance and attributional beliefs for students with learning disabilities ($n = 63$). Some research has explored attribution retraining in other groups. For example, Ziegler and Heller (2000) found that instructor provided verbal and written feedback targeted at retraining attributional thinking positively influenced the attributional beliefs of eighth grade girls who were gifted in Physics ($n = 164$).

Ziegler and Heller (2000) emphasize that their research is relatively unique as their attribution retraining program was effective in the natural, classroom setting, whereas most previous research only showed the effectiveness of attribution retraining in the clinical setting. They propose that the success of their program was their consideration of how to provide individual attention and feedback in a group setting. The online classroom is an ideal situation in which to present attribution retraining. However, no research was found that examined attribution retraining in online students or in graduate students. To fill the identified gaps in the literature, three research questions were posed:

1. In the self-reflection portion of training, what did students present as their weaknesses with regard to self-efficacy, goal orientation, learning strategies, and attributional beliefs?
2. In the self-reflection portion of training, what goals did they propose in order to improve with regard to self-efficacy, goal orientation, learning strategies, and attributional beliefs?
3. In the follow-up portion of the study, did participants experience a change in how they perceived themselves with regard to self-efficacy, goal orientation, learning strategies, and attributional beliefs?

Methods

Qualitative methods were utilized to address the research questions. Specifically, content analysis was used to identify emergent themes in participants' self-reflection papers and follow-up responses.

Participants

Participants were enrolled in a graduate level, asynchronous online section of an educational psychology course at a Midwestern university in a small urban area. Students were enrolled in both on campus and online programs. A total of 12 students participated. Eight students were Caucasian, three were African American, and one identified as Middle Eastern. Participants' ages ranged from 22 to 62. The mean age of participants was approximately 37. Further demographic data was not available as this study utilized archival data.

Procedure

In a graduate level educational psychology course taught by one of the researchers, students engaged in self-regulation training across one semester. Institutional review board approval was given to review the archival data from students' class work. The training program consisted of two specific activities. First, students read a two-page document that defined and described each of the four targeted constructs (described below). Next, students wrote a self-reflection paper for each of the constructs. The readings and papers were designed to make students aware of these constructs, to help them understand why the constructs are important, and to think critically about how their habits of mind and behavior may impact their academic outcomes.

The following four reading units were created by the authors: self-efficacy, goal orientation, learning strategies, and attributional beliefs. Each of the four readings followed the same outline. First, papers presented definitions of key terms (see review of the literature). Next, the impact of each construct on learning and performance was discussed. These discussions were based on the literature, but simplified for ease of presentation and understanding. Subsequently, a successful and an unsuccessful use of each construct were presented. Finally, participants were presented with a review of the content in conjunction with prompts for thinking about the impact of the construct on their own learning.

After reading about each of the four constructs, the students completed four self-reflection papers included three sections in which students responded to following three prompts:

1. Define the construct in your own words and explain its significance to learning outcomes.
2. Explain your strengths and weaknesses related to this construct.
3. Describe your goals for ways through which you may improve upon your strengths and weaknesses.

The four readings and self-reflection papers were scheduled to coincide with the time frame in which each of the self-regulatory activities would likely occur in the course. At the onset of a new testing unit, students read materials about self-efficacy and achievement goal orientation (two readings). After reading the two brief units, students then wrote a self-efficacy reflection paper and an achievement goal orientation reflection paper. Approximately one week before the midterm exam, when students had entered the performance control phase, they engaged in the same activities for learning strategies. When students had completed the exam at the end of the testing unit and were in the self-reflection phase of self-regulation, they completed the training activities for attributional thinking.

Participation in the training activities was required; thus, participation was not anonymous. Completion of all activities earned students 50 points, the equivalent of an exam grade. After completion of the course and posting of final grades, students were asked to respond to the following follow-up prompt: "Did reading the training materials change your behavior with regard to self-efficacy, goal orientation, learning strategies, and attributional beliefs? If yes, explain how you think you changed." Responses to this final question were not graded or required for the course.

Data Analysis

In order to develop coding themes, the authors each reviewed the four self-reflection papers and responses to the follow-up question. The qualitative design allowed the researchers to "describe, understand, and explore...phenomena...through methods that allow insights to emerge" and "enables the researcher to gain an in-depth understanding" of participants' experiences (Courtenay, Merriam, & Reeves, 1998, p. 67). Specifically, content analysis was used to analyze

the participants' self-reflection papers and comments and to synthesize findings. Seale (2004) defined content analysis as any technique for analyzing written materials in terms of the presence and frequency of terms or concepts, either explicit or implicit. Based on themes that emerge from the qualitative data, inferences are made about the sample.

Separately, the two researchers used an inductive approach to generate substantive coding of categories grounded in the documents. After separate coding was completed for three sets of participant papers, the codes generated by the two researchers were discussed, referencing the documents as needed to sort, compare, and further define the emerging codes. Upon reaching agreement with regard to coding, the process was repeated three more times on three participants' document sets, each time in order to review all 12 document sets. Merriam (1995) suggests that through this practice of multiple reviewers confirming emerging findings supports the validity and dependability of the findings, and ultimately the plausibility of the investigators' interpretations.

Themes were generated deductively as codes were grouped, sorted, regrouped, and resorted to analyze patterns and the magnitude of these patterns in the analysis. These themes were considered in light of relevant literature through both deductive and inductive processes. Ultimately, the researchers reached full agreement regarding the themes. Through this analytic process, findings were synthesized and explicated from among the themes and extant literature.

Results

To address the first research question, analysis of each of the self-reflection papers for the twelve students revealed specific themes pertaining to the participants' perceptions of their weaknesses. In the four self-reflection papers, students discussed their weaknesses pertaining to self-efficacy, goal orientation, learning strategies, and attributions, respectively. Please note that frequencies (f) presented in this section document the number of unique comments that pertained to each theme across the 12 students; thus, the frequency may be greater than the number of participants.

Self-efficacy: Weaknesses

After the authors analyzed students' self-efficacy self-reflection papers, four themes emerged for weaknesses. The four themes were: content-specific efficacy, fear of failure, help-seeking, and focusing on mistakes. Students provided a wealth of information in their self-reflection papers; thus, some students are represented more than once across the themes.

With regard to self-efficacy, five students commented that there were areas for which they lacked confidence in their abilities. This was identified as a theme of content-specific efficacy ($f = 5$). Specifically, three students noted a lower sense of efficacy for writing and presentation abilities, one student noted a lower sense of efficacy for mathematics, and one student noted a lower sense of efficacy for technology use. For example, one student stated the following with regard to her low sense of efficacy for math. "I have created a mental roadblock to these tasks and make excuses rather than spending time finding solutions."

Beyond specific content areas, students noted that when they did not believe they could successfully complete a task, they were more likely to avoid a task or give up before a task was complete ($f = 4$) or to feel anxious ($f = 1$). Thus, the second theme was identified as fear of failure ($f = 5$). For example one student stated, "When I don't think I can do well on a test, I get really anxious. I'm anxious when I study, and I don't get as much done, and then I do poorly on the test

too.” Another student noted that, “My plan was to hide how hard I practice and study so others bought into my image of being so smart. If there was something I had to spend too much time on to appear the expert, I avoided it. That way, in my mind, there was an extreme reduction in the risk of failing.”

Help-seeking was the third theme to emerge in the analysis of the self-efficacy self-reflection papers ($f = 5$). Although help-seeking is a learning strategy, five students noted that when they had a low sense of efficacy for an assignment or topic, they were less likely to seek assistance. For example, one student who is a teacher commented on her struggle with help-seeking, control, and efficacy, “I don’t always have to be the teacher and know everything. I should be more willing to seek assistance.”

The fourth and final theme to emerge was focusing on mistakes ($f = 4$). These students noted that they focus too much on mistakes and, subsequently, others’ opinions of their abilities. For example, one student noted that, “I have NEVER looked at a paper I have written to see what I have done correctly; I always focus on the parts that are incorrect and what that means someone else thinks about me [...] thus lowering my confidence in my abilities.”

Goal Orientation: Weaknesses

After analysis of students’ perceived weaknesses in goal orientation self-reflection papers, three common themes emerged. The three themes were: hyper-focus on performance, creating goals, and goal management. Students often commented on multiple areas of perceived weaknesses with related to goal orientation. As a result, students are represented more than once across the three themes.

The first theme to emerge was that several students struggled with setting optimal goals ($f = 13$). All students included comments pertaining to this in their papers, one student made two separate, but unique statements regarding their focus on performance. Specifically, 11 students noted that they overemphasized performance or grades, rather than mastery, when setting goals. One of these students stated, “My main weakness is that although I enjoy learning my classes, I can’t help but realize that the real ‘currency’ is about what grades you make and not exactly what students learn.” She went on to note that, “grades simply overshadow meaningful learning in my universe.” Another student put it more concisely, “I want a good grade, and in reality this does drive me in a powerful way.”

The second theme to emerge was creating goals. Two students stated that they struggled in general with making goals. For example, one of these students noted that, “I tend to get things done, but it isn’t pretty. I’ve never really been good at setting goals that work for me and what I need to accomplish.”

Managing goals was the second theme to emerge from the analysis of the weakness portion of the goal orientation self-reflection papers ($f = 9$). Five students noted that although they may make goals, time management and procrastination significantly impacted their ability to achieve their goals. For example, one student explained, “I can set all wonderful goals, but I think I need to set goals to achieve those goals! Mostly, I need to aim not to push things off to the last minute.” Another group of students indicated that prioritizing goals was a challenge ($f = 4$). For example, one student’s reflections included the following, “Goals are great, but I have so many. Like, get the kids to soccer and dance, and get my students’ papers graded. I’m not sure how to fit my goals in to the schedule some times.”

Learning Strategies: Weaknesses

Two common themes emerged from analysis of students' perceived weaknesses related to learning strategies presented in the self-reflection papers. The two themes were strategy utilization and motivation. Students provided a multitude of comments across numerous areas, resulting in some students being represented more than once across the various themes.

Strategy utilization was the first theme to emerge ($f = 9$). Eight students noted that their use of specific strategies or overuse of strategies was problematic for them. Two students noted that they sometimes overwhelm themselves by trying to apply too many learning strategies. For example, one student colorfully captured this stating, "Sometimes I feel like I'm managing a three ring circus because. [*sicsic*] I've got more strategies in play than Barnum and Bailey has acts. Using this thinking the overboard approach actually handicaps me." Two students noted that distraction management was a problem for them. One of these students noted that, "My life is crazy. When I sit down to read or write a paper, I end up getting up to do laundry, or I keep checking my phone for texts, emails, and Facebook updates."

Another student noted that, "I have a habit of assuming I'm just going to 'get it.' So, I don't consciously apply any strategies." Two students noted that they fail to employ metacognitive strategies to assess what they do or do not understand after learning experiences. Two other students noted that they struggled with time management, specifically noting that procrastination was a problem for them. A related weakness that several students noted ($f = 8$) was an issue with being sufficiently motivated to complete a task. They shared that when they did not see the value of a task for their learning or professional practice, they often put the task off and never consciously selected a strategy. For example, one student voiced the following, "If I don't think an assignment is meaningful, or at the very least challenging, I'm not going to put a lot of effort into, I'm going to put it off, and I'm just going to do the bare minimum. Like discussion boards in some of my classes, who cares, they are so forced and dumb."

Attribution: Weaknesses

After the authors analyzed students' self-efficacy self-reflection papers, two themes emerged for weaknesses. The first theme to emerge was external attributions for failures ($f = 8$). The second theme to emerge was external attributions for success ($f = 4$). Students only noted one of the two themes; thus, no student reported both weaknesses.

For the first theme, external attributions for failures, eight students noted a tendency to blame performances they perceived as poor on external variables such as course design, instructor, or demands on their time. For example, one student noted, "I constantly tell myself that if I didn't get the score I wanted, it was because I had other things going on like grading student papers, getting my kids to soccer, or a sick child." For the second theme, external attributions for success, four students discussed not giving themselves credit for their academic successes. These students described feeling, at times, that their academic successes could be attributed to luck, teacher pity, or the teacher not grading carefully. One student reported the following experience from her statistics course. "I felt like the teacher felt just bad enough for me to let me pass (barely)."

Research Question Two

Content analysis was used to explore the self-reflection papers to identify themes from the goals students set for improving with regard to their self-efficacy, achievement goal orientation, learning strategies, and attributions.

Self-efficacy: Goals

Upon review of students' self-efficacy self-reflection paper, three themes emerged for goals aimed at increasing their sense of efficacy. The three themes were focusing on the positive, recognizing errors as part of the learning process, and seeking help. The first theme to emerge for in the goals section of the self-efficacy papers was focusing on the positive ($f = 3$). Several students noted that focusing on what they did incorrectly was a weakness ($f = 4$). Subsequently, three students also noted in the goals section papers that they wanted to work on focusing on what they did well in order to build their sense of efficacy. For example, one student commented, "I can't keep focusing on what I got wrong. That's only part of the process. I've got to start focusing on what I got RIGHT."

The second theme that emerged for goals in self-efficacy was recognizing errors as an important part of the learning process ($f = 5$). For example, one student noted that, "I'm here to learn, and making mistakes is part of that process. If I knew everything, why would I be in school? I've got to remember that mistakes help me learn." Another student noted, "Being defensive in the face of criticism is getting me nowhere. Critical feedback helps me get better. I need to remember that."

Seeking help was the final theme to emerge from the evaluation of the goals section of students' self-efficacy paper ($f = 4$). In the weaknesses section, many students noted that a low sense of efficacy prevented them from seeking help ($f = 5$). Consequently, many students set a goal of seeking help when they felt unsure of their abilities and course work. One student noted, "I've got to ask for help when I feel like I'm not up to the task instead of hiding my weaknesses. Hiding from my problems isn't getting me where I want to go!"

Goal Orientation: Goals

The review of students' goals for improving with regard to goal orientation revealed two common themes: focus on internal motivation and focus on learning. Two unrelated comments were documented, but were not shared by any other students. One student noted that she needed to overcome frustration with regard to setting goals. Another student noted that he needed to seek help to set more effective goals. Neither student expanded on these comments.

Five students noted they needed to consider internal motivation more in their educational experiences. For example, one student noted that she needed to focus on how learning her coursework, "can make me a better teacher and parent, not just something I have to do to get my degree. I feel like this has been harder for me in my online classes." Another student commented, "I had never really considered the importance of my motivation as it pertains to my end goals, but I have definitely taken a new perspective on this topic, because I believe it will make school work more enjoyable and make it feel less like a necessary evil. I'm going to try to make that a goal all on its own now."

The second theme to emerge for goal setting was the need to focus on learning ($f = 8$). Eight students believed that they often minimized the importance of learning and overwhelmingly focused on grades, or more specifically, points missed on assignments or tests. For example, one student noted that when making and evaluating his own goal setting he needed to, "give myself permission to accept what I have learned, and to view learning as an achievement [...] and view it as a success."

Learning Strategies: Goals

The review of students' goals for improving with regard to learning strategies revealed four common themes: develop effective strategies ($f = 4$), time management ($f = 6$), metacognition ($f = 6$), and motivation ($f = 3$). Four students noted a general goal of developing more effective strategies when initiating new academic tasks. For example, a student shared this goal. "I need to use effective strategies, not just dump everything I have at a task, creating a plan of attack before starting a new assignment."

In addition to setting the goal to develop effective strategies in general, six students specifically stated that they wanted to work on time management in order to decrease procrastination. This was interesting as only two students noted that procrastination was one of their weaknesses. One student shared that, "I want to be better at strategically utilizing my time. I tend to get overwhelmed by assignments, putting them off until I don't have time to use any positive strategies to help me do better."

Six students also noted that they wanted to improve in the area of metacognition. Metacognition is cognition about cognition or thinking about thinking (Efklides, 2011; Flavell, 1979). One student noted that he needed "to slow down when studying instead of barreling through, quiz myself on what I know and don't know." Another student stated that, "I have got to working evaluating what I'm learning. Not just reviewing everything over and over, I need to use a strategy to identify what I don't know and study that." Finally, three students shared that they needed to work on their motivation levels in order to facilitate the use of learning strategies. As several students noted, when they are not interested in a task, then they are less likely to take the time to employ learning strategies in order to successfully complete the task. One student shared that, "I wish my teachers could find ways to make all assignments interesting, but that's a bit unrealistic. I need to figure out how the material and assignment is beneficial to me so that I can get jazzed up enough to use good learning strategies and succeed."

Attribution: Goals

Analysis of the goals section of students' attributional beliefs self-reflection paper revealed two themes for improvement. The two themes were time management ($f = 5$) and taking ownership ($f = 8$). Five students noted that they needed to improve their time management skills in order to succeed with the many demands on their time (i.e., work, school, and family). These students connected this goal to the weakness of attributing poor performance to external causes, specifically demands on their time. For example, one student shared the following attribution-based goal: "I need to make school a priority and set aside time from my chaotic life. If I can do this, I won't be able to blame my kids' ballet class or basketball practice for grades I don't like."

The final theme to emerge from students' goals for improving their attributional tendencies was taking ownership. Eight students noted that they needed to take ownership of both the things they do well as well as their areas of weakness. One participant shared that, "I have to own my successes and mistakes. I write the papers and take the tests, not my teacher." Students further suggested that part of owning their weaknesses should entail identifying how to improve upon those weaknesses. One student suggested, "I've got to learn to take credit for more than just the good stuff. I have to own up to my mistakes and make a plan to avoid doing the same things over and over."

Research Question Three

The follow-up prompt to which students responded was as follows: "Did reading the training materials change your behavior with regard to self-efficacy, goal orientation, learning

strategies, and/or attributional beliefs? If yes, explain how you think you changed.” Content analysis was utilized to determine common themes among student responses to the prompt.

Of the twelve participants who responded to the demographic questionnaire, only seven responded to the follow-up prompts. Although participation in all the other self-regulatory trainings was mandatory, participation in the follow-up materials was not required. In fact, participation was not requested until final grades were assigned.

Six of the seven student participants responded “Yes” to the reflection prompt, indicating that most students perceived a change in perception of themselves with regard to the four target constructs. The student that responded, “No” to these questions noted that, “I’m getting this stuff too late in life. I wish I had learned some of this when I was a kid!”

Deeper analysis revealed that two students believed they experienced growth only in self-efficacy. Three students felt they experienced growth only with regard to achievement goal orientation. For example, a student shared, “I really have a bad habit of focusing on getting an A. I have started trying to focus on what I’m learning and how it can help me be a better teacher. It really has decreased my anxiety about losing 1 or 2 points. I mean, who cares if I get a low A or even a B. If I’ve learned something that helps my kids, who cares what score the professor assigns!” One student noted she realized that establishing better time management plans at the outset of a course is critical for her. Thus, the student perceived growth in her time management as part of the forethought phase of the self-regulatory cycle. She noted that, “I’ve started looking at the schedule way ahead of when stuff is due. I’m trying to make a plan for what’s left of the semester, and I want to do the same at the start of next semester, making my calendar for when I need to start thinking about this or that, or doing things for assignments.” Finally, two students noted they changed their goal setting behaviors as a result of trainings. Both noted that they moved from a more extrinsically motivated, performance goal orientation to a more intrinsically motivated, mastery goal orientation.

All of the participants who noted changes as a result of participation in the study also noted specific changes in the performance control phase of the self-regulatory cycle. Interestingly, the seventh participant who said he did not experience changes noted that he was paying a great deal more attention to time management and help-seeking. Indicating that, although the participant did not acknowledge a change in behavior, he did report an actual change in behavior.

Five of the seven participants reported specific improvements in time management. These students reported using time management as a study strategy (*e.g.*, not procrastinating or planning study periods). For example, one student shared the following: “I’ve got to stop finding reasons to put things off until the last minute. I have started to try to establish set study times where NO ONE is allowed to interrupt me...well, unless someone is dead, bleeding, or unconscious.” Two students noted that the trainings helped them to see the importance of help-seeking and the value of engaging in help-seeking. One of these students stated, “In my online courses, I kind of forget that I’m not alone in my learning. I just need to reach out to my teacher or peers for help.” One student noted that she had worked harder at organizing her materials in a strategic manner to help her study better.

Only one student specifically noted a change in attributional thinking. The student noted that, “I never realized how powerful my thoughts can be, how they can undermine my success. I’m really bad at externalizing the causes of any shortcomings. I’ve been working to be more conscious of this tendency and to try to take ownership of less desirable outcomes so I can fix them.”

In conclusion, six of the seven participants noted that, overall, they did experience changes in self-efficacy, achievement goal orientation, learning strategies, and attributions. Six of the seven students shared specific changes in the forethought phase of the self-regulatory cycle (self-efficacy = 2, achievement goal orientation = 3, planning time management = 1). Additionally, six of the seven students also noted specific changes in the second phase of the self-regulatory cycle (time management = 5, help-seeking = 2, organization of materials = 1). One student shared specific changes related to attributional thinking.

Limitations

First, this was a small sample qualitative study. The sample in this study was comprised of graduate students enrolled in a Midwestern education program, who were predominately Caucasian females. Thus, findings may not be generalized beyond the scope and sample of this study. Although data was collected at the end of the semester in which training took place, no longer term follow up investigations were conducted. In addition, the study was limited to self-report information and no observations or psychometric tools were used. Future research should include the use of quantitative data to assess self-regulatory variables as trainings occur and over time to assess the extended impact of trainings. The use of quantitative measures could also help to collect data on a larger, more diverse sample. Observations or an interview protocol could be used to provide additional, richer information for qualitative analysis. Moreover, future follow-up questions should be written for each variable. In this study, the follow-up question was more general and included all four variables. This may have limited the information provided by participants for each variable.

Discussion

Participating graduate students' self-reflection papers and follow-up responses revealed a great deal about their perceived self-regulatory deficits, proposed goals for improving upon those weaknesses, and the perceived impact of a brief series of training experiences on their self-regulatory beliefs and behaviors. Results indicated that students perceived a positive impact from participating in trainings, and results also provided some insight into means of helping graduate students, especially those in the online setting, be more successful learners. The next sections provide a discussion of results related to each variable as well as those results in the context of the existing literature.

Self-Efficacy

Students' self-reflection papers revealed that some struggled with low efficacy for specific topics, doubting their abilities and feeling anxious and concerned about failing. Students noted that these feelings inhibited their help-seeking behaviors. Students' goals mirrored these perceived weaknesses, noting they needed to focus on their strengths and see errors as opportunities for learning. Notably, one student stated, "If I knew everything, why would I be in school? I've got to remember that mistakes help me learn." By beginning to look at errors as opportunities for learning in lieu of viewing them as personal weaknesses, students may begin to build their sense of efficacy. One student noted, "I never realized that kicking myself for the few things I missed was so counterproductive. But, it is. I get so defensive, protecting my sense of self as a bright student, that I fail to see that I needed to learn something from my mistakes." This comment highlights a theme that ran throughout all of the papers. Many students simply

never realized that their perceptions of their abilities, thoughts, and behaviors could impede their academic growth.

Students also noted the need to seek help from others when they did not understand course content as an area for growth within their sense of efficacy. Again, there was a sense that they needed to stop seeing the need to fill a gap in their understanding as a personal flaw or weakness, but rather to see the need for help as an opportunity to learn more. As a result of the trainings, students reported their sense of efficacy had improved. One student shared that, “I think the papers helped to free up my confidence. I’m not so stuck on what I miss or do wrong, but I allow my confidence to grow by patting myself on the back for the stuff I got right. Then, I go back and look at what I missed and address those issues.” These results support previous studies that suggested targeted interventions may increase self-efficacy in elementary students (de Caso et al., 2010) and undergraduate students (Friston, 2008; Hood 2013).

The current results also provide some preliminary support that simply informing students about what self-efficacy is and how it impacts academic performance, in addition to making them consider their strengths and weaknesses and how to improve upon their weakness, can help improve a students’ sense of efficacy. Furthermore, the current results indicate that graduate students’ sense of efficacy may respond well to training. Future research should explore this type of training in younger students. Future studies should also look to collect quantitative data on a larger sample of graduate students to confirm whether this training approach significantly impacts online graduate students’ sense of efficacy.

The results of this study indicate that the combination of an awareness based reading and self-reflection paper that forced students to report why self-efficacy matters, state what their weaknesses are, and create goals for improvement may help improve efficacy beliefs. Also, the findings reveal that instructors could address that arise from literature about effective feedback. For example, students noted that they needed to attend to what they do well, not just what they did poorly. To help address this efficacy-based weakness in students, an instructor could intentionally comment on what a student did well on an assignment. Instructors could also not only identify what a student did poorly, but also share how to improve upon these weaknesses, purposefully reminding students that filling these gaps in understanding is an important part of the learning process. Finally, instructors should relate progress to achievement goals to help students see their growth (Brookhart, 2008; Shute, 2008).

Achievement Goal Orientation

In addition to self-efficacy, achievement goal orientation was explored in the forethought phase of students’ self-regulatory cycle. Participants revealed three deficits pertaining to achievement goal orientation—hyper-focus on performance, creating goals, and goal management. Students noted that if they focused on learning for mastery, time management, and stopped procrastinating, they would probably get the better grades and become more effective practitioners. Students also described prioritizing goal-orientated behaviors and activities as an obstacle to managing their academic goals. Several of these students mentioned non-academic activities and responsibilities as impediments to prioritizing academic activities. Students did not create any specific goals for improving upon this achievement goal orientation weakness. However, many students proposed the goal of improving their time management in their learning strategies reflection paper.

Students did propose two primary goals for improving with regard to achievement goal orientation. Students stated that they wanted to focus on developing their internal motivation and

emphasizing learning, not performance, in their goal setting. They noted the need to focus on how course content and assignments would help them be more effective in their varied professional roles in education. Participants further suggested that a focus on mastering course content, not just earning a high score, would help them become better educational practitioners. Ultimately, students seemed to all agree that this type of focus shift would reflect a shift to internal motivation and better outcomes for them and those with whom they work. Follow-up responses indicated that most students felt they benefited from training pertaining to goal orientation.

The current findings support previous research that suggests students' achievement goal orientations may be improved through targeted training. Existing research provided evidence that interventions and instructional design may improve K-12 students' (Elliot & Church, 1997; O'Keefe et al., 2013) and unemployed adults' goal orientations (Noordzij et al., 2013). These findings extend support for the effectiveness of goal orientation training for the graduate student population, but more research should be done to fully confirm the impact of such training on graduate students.

In addition to supporting previous research about the viability of goal orientation training, the current study reveals some opportunities for instructors to help students focus more on mastering material rather than earning a certain grade. Many students commented that they needed to focus on how course material could help them in their current or future professional work. This indicates that it is critical for graduate-level educators to focus on helping their students connect course content to practice. This may be done through specific instruction in which material is expressly tied to examples from practice. Asking students to connect course content to their chosen professional fields in their assignments could also achieve the goal of setting mastery rather than performance as the standard for learning as well as increasing internal motivation.

Learning Strategies

Students presented two areas they perceived as weaknesses related to learning strategy use—strategy utilization and motivation. Students noted that selecting appropriate strategies and not overusing strategies was problematic for them. One student described a sense of organizing a “three ring circus” with regard to picking the correct strategies for the various tasks in a given graduate course. Students also noted they needed strategies to help them avoid distraction. As online adult students, they have many different tasks that demand their time and attention. Some students noted they needed a specific strategy to help them manage their tasks and time. Motivational issues were often mentioned and related to strategy selection. Students shared the opinion that if they did not see the value of a task, they did not consciously select any strategies to help them succeed.

Students' goals reflected an understanding of their weaknesses and a desire to remediate those deficits. Four themes emerged from the analysis of their self-reflection papers—develop effective strategies, time management, metacognition, and motivation. Collectively, these goals reflect a desire to overcome issues with time management, to consciously select the most effective learning strategies, to think about what they know and need to know, and, finally, to find a means of motivation for their coursework.

Many students noted the need to develop better time management skills to decrease procrastination and distractions. Related to time management in many cases was the desire to increase metacognitive activities. Many students noted they needed to set aside time to study so

they would not rush through readings, allowing them time to evaluate what they garnered from studying and what they had yet to learn. Others noted the need to use review tactics to identify gaps in their understanding. Students also noted they needed to find ways of making assignments meaningful and interesting even when their professors failed to do so. After completing the training activities, students reported that the trainings improved their learning strategy use. Students all perceived improvements in this phase with emphasis on improved time management efforts. In addition, help-seeking was again mentioned as a strategy they had begun to rely on more frequently.

The current study extended the research that indicates that learning strategy training is effective with adolescent students (Lavasani et al., 2013; Greene & Azevedo, 2007; Hübner et al., 2010) to the online graduate student population. More research is needed to fully understand the needs of this population and effective means of addressing deficiencies. However, the current study did reveal that even graduate students struggle with the motivation to engage in strategic learning, the selection of appropriate learning strategies, and time management.

Attribution

Students shared two perceived areas of weakness in their attribution reflection papers—external attributions for failure and external attributions for success. Many students noted that when they did not perform as well as they would have liked, they tended to lay blame on external variables. Specifically, students shared that they often blame course design, the instructor, and too many demands on their time for poor performance. While many students noted that they were quick to blame others for any perceived academic failures, some also noted that they did not always give themselves credit for a job well done. Several students shared that they often contributed successes to luck, teacher pity, or careless grading by the instructor.

Two goals for growth related to their weaknesses presented by students in their attribution self-reflection papers were time management and taking ownership. Time management was a dominant theme for weaknesses and goals across all the variables studied except self-efficacy. The connection to attributional weaknesses is clear as many students noted they often blamed academic shortcomings on having too many responsibilities and too little time. Many students commented in the attribution and other self-reflection papers that work, school, and family often competed for their attention and time. Students again acknowledged that taking control of and learning to manage their time is critical to their academic growth and success, noting that if they took control of their “chaotic life” they would no longer “be able to blame” their family or work for less than desirable performances.

The taking ownership factor overlapped both areas of weakness presented by students. Students realized that they needed to recognize their ownership of both academic failures and successes. One student shared, “At the end of the day, it is all on me. I have to make time to do what is needed to succeed. If I don’t study enough and I do poorly, it is all on me, not the instructor, not my kids, not my job.” An important caveat of this was the overlap with previously noted weaknesses and themes, specifically the expressed need to not only take ownership of mistakes, but to also view mistakes as areas they could use as learning experiences.

The follow-up remarks generally noted that students’ perceived growth related to self-efficacy, goal orientation, learning strategies, and attribution. However, only one student noted specific growth with regard to attribution. The design of the follow-up prompt likely limited the information provided by students for each variable. Future iterations of this work should ask students to provide specific feedback for each of the variables separately. The response to the

general prompt, asking if students changed their behaviors related to each of the four constructs as a result of participation, indicates that participants did perceive change with regard to attributions. Without more detailed statements, it is difficult to support this with other details.

Previous research indicated it is sometimes difficult to affect attributional thinking in the classroom context (Ziegler & Heller, 2000); however, research does suggest it is possible with younger students (Berkeley et al., 2011; Robertson, 2000; Ziegler & Heller, 2000). The current findings suggest that the online environment may be an ideal arena in which to improve graduate students' attributional thinking. Further studies are needed to confirm the current study's finding and to provide more insight into the impact of such training programs on graduate students.

Although more research is needed, the current findings provide insight for instructional practice. Throughout multiple self-reflection papers, heavy emphasis was placed on the need for students to develop better time management skills and to develop a view of mistakes as an opportunity for improvement. This result indicates that this should likely be an area of concern and consideration in the design and instruction of online graduate courses. Because many graduate education students are working adults with families, the flexibility of online coursework draws them to online coursework and programs (Haynie, 2013).

Based on the results of this study, the flexibility of online coursework paired with the reason students are drawn to this flexibility (e.g. hectic lives) presents an instructional conundrum that should be addressed by instructors. Clearly, the flexibility of online learning is critical to the students, but they do not necessarily come to the online classroom with the time management skills needed to successfully navigate the demands of course work and other aspects of their lives.

Research with undergraduate students revealed that even short-term time management training programs increased students' perceived control of time and decreased perceived stress (Häfner, Stock, Pinneker, & Ströhle, 2014). It may be important for online instructors and for those who offer online degrees to offer a brief time management training session as part of a course or programmatic orientation program. Future research should explore the impact of online time management training programs on online graduate students' perceived control of time, perceived stress, and self-regulatory beliefs and behaviors.

Additionally, many students noted the need to focus on poor performances and mistakes as opportunities for learning. Participants in the current study listed the absence of this attitude as a weakness and/or the need to shift their views of errors as a goal across all the self-reflection papers. As noted, it may be important for instructors to emphasize this belief system in their classes. Often instructors focus not on what a student has accomplished, but instead, grading behaviors are centered on what was done incorrectly. Future research should explore the impact of providing positive feedback along with constructive criticism on students' perceptions of their successes and failures in online graduate work. Additionally, allowing students to correct mistakes on assignments may also help to shift students' focus from shame to learning with regard to errors (Wormeli, 2011).

Future research should explore various approaches for allowing students to redress errors in assignments in online graduate coursework. For example, instructors could allow students the opportunities to correct errors in order to improve learning as well as assignment scores. Based on student described weaknesses related to their perception of errors, one would expect that successfully shifting students' perception of errors to learning opportunities may result in improvements to self-efficacy, achievement goal orientation, learning strategies, and attributional

beliefs. Furthermore, existing literature would suggest that the consequence of such changes would be deeper learning and increased achievement.

Conclusions

The information shared by students who participated in this study suggests that graduate students do not always enter the classroom fully equipped with the skills and attitudes needed to be effective learners. Previous research suggests that critical self-regulatory behaviors and beliefs are malleable and responsive to training (*e.g.*, Lavansani et al., 2013, Noordzij et al., 2013; Zimmerman, 2000b). However, this research has focused heavily on K-12 and undergraduate students. Far more research is needed to understand and improve self-regulation in the online graduate student population. This qualitative study revealed some interesting insights into self-regulatory weaknesses, developmental needs, and simple training techniques for improving graduate student self-regulation. Future research should further explore these critical learner variables, effective training and instructional practices, and the impact on graduate student learning in both the online and traditional settings.

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