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Reflection's Impact on Student Learning

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Reflection's Impact on Student Learning

A Project Presented to
The Graduate Faculty of
Minnesota State University, Moorhead

By

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Abstract

The purpose of this study was to see if the process of reflection has a positive impact on student learning. Students wrote reflections before and after assessments, which allowed them to think deeply about what they were doing well, what they needed help on, and how they were going to receive that support. Students also wrote reflections periodically through the year. In these reflections, students evaluated their study habits, work ethic, willingness to ask for help, and anything that hindered their success in the past. Students wrote reflections during class and were read by the teacher to access quality so that the teacher could assess the students compared to their course work. The study took place at Owatonna High School, which is in a rural community in Southern Minnesota. The twenty eight students who were involved in the study were juniors and seniors in an elective advanced algebra class. After conducting the research and receiving results through a student survey, the majority of students felt that writing reflections not only helped organize their thinking but also helping to self regulate their learning. Finally, the survey asked if the students would use the strategy again and the majority of them said no they would not use it again. The next steps that need to be taken are to find out what strategies that other students are using to self regulate their learning. Also another step that needs to be taken after looking at the results is to find strategies to promote intrinsic motivation. Lastly, students should have reflected on their self regulation skills at the beginning of the year, so that they would have had something to compare their survey question to.

Chapter One

General Problem

       Background Information. Research states that 53% of students are disengaged in schools. It also shows that engagement decreased significantly as the students progress through school (Gallup p.1). This is an issue that has appeared in many classrooms throughout the history of schools. Student have trouble engaging in the content being taught, as well as regulating their own learning. In Macklem's book she stated, "A study of high school students found that they were less engaged in school than they were in settings other than public school". She also states, "Engagement results in positive outcomes and decreases negative emotions. Conceptually, engagement and self-regulated learning overlap". Without engagement and self regulation, learning is negatively impacted for students. Students need a strategy to help self-regulate their learning.

       Purpose of Study. The purpose of this study is to devise a strategy that will help students gain this self-regulation skill. I want to promote engagement in my classroom, so that truly effective learning can take place. With this study, I want to try using reflection as a resource to promote self-regulation in students.

       Hypothesis. If I promote self-regulation through the reflection process, then student engagement will increase which will ultimately increase learning in students.

Subject and Setting

       Description of Subjects. The participants of this study will be 20-30 Juniors and Seniors in an Advanced Algebra class at Owatonna High School. Students will have a range of abilities in mathematics. This particular course is an elective that is offered, therefore it is not a course

required for graduation. Due to this, there will be students coming from lower and higher tracked mathematics classes combined into one class.

Selection Criteria. This class of students was selected for this study because there will be a wide variety of learners that have mixed skills levels. This will help the study because there will be a variety of starting points at the beginning of the year, which will create interesting data at the end of the study.

Description of Setting. This study will be taking place in a high school in southern Minnesota. The town is about 26,000 people and has one high school that all of the students attend. The high school has about 1,600 students, which equates to around 400 students in a class. The student body is composed of about 78% Caucasian students and 22% of students whose ethnicities vary between African American, Somali, and Latino. The reporting free and reduced lunch percentage is 27. 9%

Research Ethics

Permissions. Permission will be obtained by the Institutional Review Board at Minnesota State University, Moorhead. Protocol from the Review Board will be followed precisely. Permission will also be obtained from the school district to conduct this study. This permission will be granted from the School District's Superintendent, Jeff Elstad and Building Principal, Kory Kath.

Informed Consent. Participants and their parents will sign a consent form to be a part of the research study. In this consent form, the purpose of the study is explained, the risks of the study, and the contact information for questions about the study. Students and parents will also be informed the study is voluntary and the choice to participate or withdrawal will not affect their grade or change the education that they will receive in my classroom.

Definitions.

1. Engagement: Student engagement is defined and measured, the term is used to describe meaningful student involvement throughout the learning environment (Martin & Torres)

2. Self-Regulated Learning: Self-regulated learning is a cyclical process, wherein the student plans for a task, monitors their performance, and then reflects on the outcome. The cycle then repeats as the student uses the reflection to adjust and prepare for the next task (Zimmerman 2002).

3. Reflection: Reflection is a meaning-making process that moves a learner from one's experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas (Rodgers 2002).

Chapter Two

Review of Literature

   Engagement. One of the greatest ways to increase learning is to engage students in instructional activities that make them motivated to learn. When students are able to engage and participate in things while in the classroom, it carries into, and benefits, other areas of student life such as "academic competencies, achievements, socialization, welfare, life satisfaction as well as for effective learning" (Selim 2014). Engagement is one of the most important aspects of teaching in order to foster learning. Without it, students become unmotivated and learning ceases to exist. Author Hamish Coates also sees how important student engagement is with the following statement, "In essence, therefore, student engagement is concerned with the extent to which students are engaging in a range of educational activities that research has shown as likely to lead to high quality learning". Hamish also helps segue into my next points about creating self-regulated learners and the power of reflection in learning when she discusses how students need to place quality effort into what they are doing. If they make themselves a challenge to learn or engage in new ideas and skills, they will be able to acquire vital skills such as effective communication or organization, that they will carry with them to their post-secondary education (Coates, 2005).

   Self Regulated Learning. In order for a student to be successful, they must acquire skills to be a self-regulated learner. "Self-regulated learning is a cyclical process, wherein the student plans for a task, monitors their performance, and then reflects on the outcome. The cycle then repeats as the student uses the reflection to adjust and prepare for the next task" (Zimmerman, 2002). To emphasize what Zimmerman was saying, self-regulated learning is the contact process of self-checking your own learning to make sure you are on the right track. Nilson (2013) echoes

this in her book about self regulated learning when she said, "self-regulation encompasses the monitoring and managing of one's cognitive processes as well as the awareness of and control over one's emotions, motivations, behavior, and environment related to learning". Finally, Nilson (2013) also stresses how the research done on self-regulated learning has an overwhelmingly positive correlation between achievement, depth of thought, focus, reflection and responsibility

 Reflection. A strategy that I will employ in my class to help students become self-regulated learners will be reflection. As I stated in the last paragraph on self-regulation, students can self-regulate by actively monitoring on their own learning. Nilson (2013) states in her book, "Few teachers encourage students to establish specific goals for their academic work or teach explicit study strategies. Also, students are rarely asked to self-evaluate their work or estimate their competence on new tasks. Teachers seldom assess students' beliefs about learning, such as self-efficacy perceptions or causal attributions, in order to identify cognitive or motivational difficulties before they become problematic". My students will be performing self-evaluations on their work as well as, on their motivation to learn a specific concept or unit. Main (1985) provided some insight into the process of evaluation and suggests, "offering opportunities for comparing past and present or different qualities of experience." In doing so, the students evaluation is more thorough and it evokes deeper thinking. When one is continually comparing current situations to the past, it heightens awareness of potential outcomes to various actions. Students gain a sense of pride when their perseverance has been rewarded with success or improvement. From this, they can experience the reward of setting goals, seeing progress and reflecting upon that success.

Chapter Three

Data Collection

   Research Questions. As I previously stated, over half of our students are disengaged in school (Gallup p.1). This is something that needs to be altered before it is too late. I want to know answers to the following questions:

1. Will reflecting on learning before and after assessments help students engage in their own learning?

2. Will writing reflections help students to become self-regulated learners?

3. If the reflection is more thorough or shows more contemplation, will the student's performance increase?

   Methods. All participants will write reflections before and after assessments on their learning. These reflections will help students pinpoint what they need help learning and what they have accomplished before the assessment. After the assessment students will reflect on how the assessment went and what they thought worked well to prepare for the assessment or what they would do differently next time. Students will also write a reflection at the beginning of the year that will help them develop a plan to be successful in class. This reflection will be revisited periodically throughout the year and assessed or gauged to ensure students are meeting the goals they set out to accomplish. At the end of the semester, students will be taking a survey to give feedback on how they thought the reflections helped their learning in a positive, negative or neutral way.

   Schedule. The study will take place from September to January, which is the entirety of the course. Students will be writing reflections the whole semester. Students will be attending this class during the scheduled time block of each academic day.

Ethical Issues. For the most part, there should be not any ethical issues other than student experiences are different, so the way they describe their personal experiences could be difficult or trying for them.

Protection of Human Subjects. Student confidentiality will be taken very seriously. Student names will not be used in the final research write up. Student documents will be stored in a locked filing cabinet. Once the research is complete, student documents will be properly and securely disposed of.

Researcher Bias. In research, bias is when a systematic error is introduced into sampling or testing by selecting or encouraging one's outcome or answer over others. (Pannucci, 2010). I will be evaluating every student's reflections and will encourage them to be honest with themselves in their reflection. I will not sway their responses one way or the other.

Chapter Four

Data Analysis and Interpretation

Description of Data. The purpose of this study was to increase students' ability to self-regulate their learning through reflecting on their learning, study habits, and preparation for an assessment. Students wrote preassessment reflections focusing on how they thought the assessment would go, why they thought it would go that way, what concepts do they need to work on before the assessment and what their plan was to learn those concepts. After the assessment was taken, students wrote postassessment reflections. This reflection focused on what they could improve on to increase their score and enhance conceptual understanding on the next assessment, as well as, what concepts they still need help with. During this research project, students wrote two sets of pre- and post- assessment reflections. Students were able to read their first postassessement reflection before they wrote their second preassessment reflection. Students were able to hold themselves accountable for what they wrote on their first postassessement reflection.

The other reflections that students wrote were at the beginning of the research study, which focused on goals and self-improvements they had for the year. Students reflected on past pitfalls they had in their learning and what strategies they can use to be successful. I brought them back out for the students to look at twice throughout the study, so that they are reminded of their goals and strategies throughout the class.

Results. I surveyed the students to get their feedback on their self-regulation skills after the research study and the results are shown in the tables below.

Table 4.1

"Since beginning the semester, do you believe your self-regulation skills have increased, decreased, or stayed the same?"

Response	Value	Comments
Increased	18	64% of population
Decreased	2	7% of population
Stayed the Same	8	29% of population

Table 4.1 shows that most participants in the research study believe that the reflections increased their self-regulation skills. There were a little under half of the students that said it did not affect their self-regulation skills or even decreased them. I was mostly shocked by the two students that said their self-regulation skills had decreased. Those two students did not elaborate further as to why they believed their ability to self-regulate decreased. I think the results demonstrate that writing reflections to increase self-regulation is an effective strategy for students, but is not compatible with all students. I think this helps strengthen the reasons behind differentiating instruction for students and how the use of many different strategies is pertinent to increase learning. Some examples of feedback that I received from students are the following:

"I believe it increased because I noticed myself working a lot harder than past years and taking school more seriously."

"Stayed the same. I usually get my work done and do what I need to do to succeed."

"Increased. Normally I wouldn't have done a lot of work, but this is helping a lot."

"Increased. It helped me think about what I need to do better."

I found the comment about why the student thought their regulation skills stayed the same was interesting. This goes to show that writing reflections isn't a "one size fits all" way of promoting self-regulation. This student already had strategies that help them better themselves as a student. The students that stated their regulation skills increased maybe did not have effective strategies in place, so this gave them one that they can use.

Table 4.2

"Did you feel the reflections helped organize your thinking and allowed you to better yourself as a student?"

Response	Value	Comments
Yes	18	64% of population
No	10	36% of population

Table 4.2 shows that most students' ability to organize their thinking and better themselves as students were positively affected by the reflective writing. Once again, this strategy isn't 100% effective for all students, so other strategies would need to be implemented to increase self-regulation. The students had great feedback for this question. One student wrote, "Yes, it makes me step back and think about how I have been doing so far. If not, I probably wouldn't have noticed how I am doing." Another student wrote, "Not really, once I write them down and hand them I really don't think about them again." Lastly, a student commented, "Yes, it made me realize what I was doing wrong and right." These testimonials were the exact kind of feedback I was looking for. There were more positive experiences than negative, which tells me this strategy is an effective one to use in the classroom.

Table 4.3

"Will you continue to reflect on yourself, as a student, after this class?"

Response	Value	Comments
Yes	12	43% of population
No	16	57% of population

The results from Table 4.3 are very intriguing. The data showed in the last two tables that for the most part, students found it beneficial to write the reflections. Why would less than half of them not want to use a strategy they have found beneficial to their learning? This has been a problem that I have faced as a teacher since I have began teaching. Some students don't want to put in the extra work even though they know it will benefit them long term. It is something that I have a tough time explain and the concept as a whole could be its own research project. One key component to self-regulation is the motivation factor. This is something that needs to be instilled in students in order for any self regulation strategies to work. In hindsight, finding ways to motivate students to go the extra mile and adopt strategies that will make them better learners. With that said, there were eighteen students that stated that they thought the reflections increased their ability to self-regulate and organize their thinking. Out of those eighteen students, twelve students stated they would use it again. That tells me that two-thirds of students that found the reflections valuable would use them again. I did not expect the ten students that did not find the reflections useful to use them again because the strategy was not beneficial to them. I am left with that one third of students that found the strategy useful, but won't use it on their own. I did

acquire student feedback on to why or why not they would continue to use reflections to help self regulate their learning. The following statements were their feedback:

"Probably not on a sheet of paper, but in my head"

"Probably, because it lets me see how I am doing"

"I won't if the teacher doesn't tell us to"

"No, didn't feel like it helped me"

"No, other classes won't make us do it"

It was interesting to see the comment of "other classes won't make us do it". The reflections were geared for students to want to do them to make them better, not because I told them to do them. Also, I think if I shared my findings with my colleagues and got them on board this reason for not reflecting would be obsolete.

Chapter Five

Action Plan and Plan for Sharing

      Action Plan. I will continue to use this strategy in my classes because students felt this was beneficial to their self-regulation skills. As I stated in the results, this was not a strategy that was compatible with all students. I would plan to research other strategies as well as ask my colleagues for more strategies that could promote self-regulation. Some students are already using stratgies to help self regulate themselves. I will be asking these students what strategies they use to self regulate, so that I can try to promote those strategies in my class. One thing in particular that I will research further is student motivation strategies. The students commented on how it helped them, but also said they wouldn't use it because they were not told to by a teacher. I would like them to be motivated to use it because it helps them and not because someone is requiring them. I will also ask students for more feedback and what other strategies that would positively affect their learning. This differentiation will help all students find value in learning self-regulation skills, which will then help advance their learning as a whole. I like the frequency that I had students reflect because the sentimental value of the reflections were more meaningful. I had the students refecting about one time per week depending on what dates assessments fell on. I think if I were to have students reflecting everyday, the reflections would become very cumbersome and would lose their effectiveness. If someone were to use this strategy, my caution would be to limit the frequency of use to avoid students becoming desensitized. I think students would have been able to see their growth more clearly if I would have had them reflect about their self-regulation skills at the beginning of the study, so that they had something to compare to.

I was able to collect data on two out of my three research questions. The majority of students felt that writing these refections increased their ability to self-regulate their learning. My final research question which was "If the reflection is more thorough or shows more contemplation, will the student's performance increase?" This question was difficult to evaluate because I didn't determine what "thorough" looked like in a reflection. I needed to have a rubric or a self evaluation for students to fill out in order to determine the contemplation in the reflection. This is something I will work on to better my practice of this strategy.

Plan for Sharing. I plan to share my findings with all of my high school colleagues and administration. Writing reflections to promote self-regulation was an effective strategy for most students in my class. The strategy is time efficient and effective to use, which is precisely what teachers are looking for. I will be asking for feedback on the research study from my colleagues and administrators, so that I can get more ideas how to support my students' learning. I will also be sharing the results of the survey with the participants in the survey as well as their parents. Students will be able to give me more feedback to what strategies would also be beneficial to them.

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