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Utilizing Exam Reflection (ER) Tool to Increase Students' Self-Efficacy for Learning

Jobelle A. Gabayeron
Philippine Normal University

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**UTILIZING EXAM REFLECTION (ER) TOOL TO INCREASE STUDENTS'
SELF-EFFICACY FOR LEARNING**

A SPECIAL PROJECT

College of Graduate Studies and Teacher Education Research
Philippine Normal University
Taft Avenue, Manila

In Partial Fulfilment of the Requirements from the Degree
MASTER OF EDUCATION with Specialization in
Educational Measurement and Evaluation

JOBELLE A. GABAYERON

April 2020

DEDICATION

To the man behind the curtain

whose shadow glimmers in the dark

whose words consoles bewilderment

whose thoughts move mountains

whose heart saves a lifetime

of loneliness,

of longing,

of misery,

of restlessness.

To the man whose name

is forever in my heart,

■ *Roger Perez Turingan.*

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-

Researcher

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ABSTRACT

NAME: JOBELLE A. GABAYERON

TITLE: UTILIZING EXAM REFLECTION (ER) TOOL TO INCREASE
STUDENTS' SELF-EFFICACY FOR LEARNING

KEY CONCEPTS: ASSESSMENT

REFLECTION

SELF-EFFICACY

DEGREE: MASTER OF EDUCATION WITH SPECIALIZATION IN
EDUCATIONAL MEASUREMENT AND EVALUATION

ADVISER: EDNA LUZ R. ABULON, Ph. D.

Coping with the discontinuity of learning and considering the issues of reflection, this study is conducted to develop an Examination Reflection (ER) tool and determine its effectiveness in increasing students' self-efficacy for learning. This intervention promotes a reflective practice that triggers self-regulatory skills to students which leads to increasing their self-efficacy for learning. This study used quasi-experimental design specifically the non-equivalent control group design. The participants came from grade seven students of Captain Albert Aguilar National High School (CAANHS) in Las Pinas City. Appropriate statistics were used to compare demographic profiles of both groups (control and

experimental) such as age, gender, family size, first quarter average, study time and examination preparation. The mean for the pre and post self-efficacy for each group were reported and were compared. Only the experimental group has shown a significant gain in their self – efficacy. The result of ANCOVA reveals a significant difference between post self-efficacy of the experimental and control group after controlling their pre-self-efficacy. A thematic analysis was conducted to provide qualitative support on the quantitative findings in this study. Three main themes are identified and discussed in no particular order. The computed partial eta square indicates a large effect size. This implies that the students who received the treatment have higher post self-efficacy compared to those who did not. Thus, utilizing Examination Reflection (ER) tool is highly effective in increasing students' self- efficacy for learning.

CHAPTER 1

THE PROBLEM AND LITERATURE REVIEW

BACKGROUND OF THE STUDY

In past decade, self-influence factors and its effect on the learning process has received much attention from researches. Of these factors, self-efficacy, one's belief that he or she can do things based on his or her abilities, stands out (Usher & Pajares, 2006). According to Bandura (1987), self-efficacy is an important component in the active development of humans. This active development (learning) of an individual does not end in acquiring knowledge and skills to perform a task but should continue until they attain the belief that they can accomplish a task even under familiar or new circumstances. In classroom setting, students with higher levels of academic efficacy do not avoid challenging tasks, show persistence during difficult situations and find own learning strategies to cope with failure (Mega et al., 2013). Academic self-efficacy is accepted to be strongly related to higher achievement (Klomegah, 2007; Bandura 1989) as cited by Villas (2019). Moreover, students who have reported to have high academic self-efficacy have a low tendency of avoiding difficult tasks because they view these as an opportunity for mastery of learning (Williams, 2010). Moreover, findings of Balkis (2011) show that high levels of self-efficacy reduce academic procrastination which results to a greater academic performance.

On the contrary, six studies (Cho, 2013; Crippen et al., 2009; Gebka, 2014; Khan, 2013; Neuville et al., 2007; Phan, 2010) as cited by Honicke & Broadbent (2016) claim that there is no significant correlation between academic self-efficacy and performance. Furthermore, Causapin (2012) found that self-efficacy was a positive but minor predictor of future performance. This oppositional issue against self-efficacy has arisen when Pajares (1996) compared regular and gifted students and found that the effects of self-efficacy among the latter group were more evident. To resolve the issue, integrative studies have explored complex relationships on self-efficacy and academic performance. Statistical analysis of the said studies suggests the mechanism for which academic self-efficacy relates to academic performance has various mediating factors such as personality, past performance, and self-regulatory learning strategies (Coutinho & Neuman, 2008; Di Benedetto & Bembenuitty, 2011; Diseth, 2011; Ferla, Valcke, & Schuyten, 2010; Lindner & Harris, 1992; Mega, Ronconi, & De Beni, 2013; Pintrich, 2004) as cited by Honicke & Broadbent (2016). Among these factors, self-regulation for learning is found to be an effective mechanism for improving self-efficacy (Phillips, Abraham, & Bond, 2003). Self-regulation is defined as self-generated thoughts, feelings, actions that are oriented to attaining goals (Zimmerman, 2002). For students to develop self-regulatory learning strategies, teachers must integrate reflection on the learning process. Since self-reflection acts as the final stage of self-regulatory cycle (Shaw, 2018), teachers must provide instructional scaffolding to promote effective way for learners to reflect not only on knowledge acquired known as cognitive dimension, but also on the feelings and

motivations associated with learning known as affective dimension, and what they did to achieve known as behavioural dimension (Cash, 2016).

Reflection is believed to be an important tool in learning which is an implication of what Dewey (1910) said, “We do not learn from experience, we learn from reflecting on the experience.” This observation is supported by Guleker (2015) who claims that students who accomplish a very difficult task may not report higher self-efficacy if they fail to reflect on the skills they have acquired and on the result of the leaning process. This indicates that the more capable a student is on reflecting on his ability related to a task, the more he will develop self-efficacy (Coronado-Aliegre 2006). Despite the good intention of reflective practice in education, persistent criticisms still exist but are rarely deliberated on in the field of education (Canning, 2008). One of the significant these appraisals points that the conceptualization of reflection of Dewey focuses mainly on the process of thinking about action and is not linked to action taken as the result of reflective thinking (Sellars, 2014). Moreover, a classic criticism of Maynard (1985) argued that reflection does not always lead to positive gains and could also result to passiveness and pessimism. In addition to this, Hatton & Smith (1995) described reflection as unreliable because of its vulnerability to the influence of individual bias and cognitive dissonance.

The said criticisms on reflection are countered by various models of reflection in different times such as Gibbs’ Reflective Model (1988); Brookfield’s Four Lenses Model (1995); Kolb’s Personal Reflection Model (1994); John’s Model of Structured Reflection (2013); and Rolfe et al.’s Reflective Model (2010). The common denominator of these models is their primary objective which is to guide individuals in reflecting upon their

experiences and actions. By doing this, they are expected to learn, to improve and to avoid repeating mistakes. Unfortunately, none of these models specify the area in learning reflection is necessarily applicable.

Educators worldwide have been using reflection only as a form of formative and summative assessment. After finishing a task, students are expected to reflect on the strengths and weakness of the result, make plans for improvement and extend efforts in integrating the new experience with previous learning (Wiggins, 1998). But in real life classroom setting, when students are informed with the result of assessment, they often focus on the score they earned. This can result to discontinuity of learning because students failed to take the several learning opportunities like reflection (Ambrose et al, 2010). This discontinuity is evident in the Philippine classroom setting based on a local study of 61 classrooms from the National Capital Region. The implication of this is also supported by Piosang (2017) which reveals that there is alarmingly low classroom assessment literacy of teachers in both secondary and tertiary level. Teachers are highly accountable for assessment because it greatly affects students' achievement (Magno & Piosang, 2016).

Coping with the said discontinuity of learning and considering the issues of reflection, the researcher is driven to conduct a study that aims to develop an examination reflection tool and determine its effect on the self-efficacy of students. The said tool is a structured approach that is based mostly on Kolb's Personal Reflection Model. It is found that students, regardless of individual differences, appear to struggle with reflection because of lack of directed and structured tool (Guleker, 2015). This study will provide the said

needed reflection tool for examination. Moreover, it will be an eye opener to students, teachers, school administrators and parents that the result of examination/assessment is not the end of the learning process but something that should be reflected upon. The proposed intervention will promote self-regulatory learning strategy to students and will eventually lead to increasing their self-efficacy for learning. Several studies anchored on the social cognitive theory prove that there exists a relationship between self-efficacy and metacognition (Magno 2009). Lastly, the findings of this study will contribute to improving the assessment literacy of teachers through the utilization of examination reflection in making assessment more meaningful.

LITERATURE REVIEW

Self-efficacy

Bandura (2001) as cited by Koseoglu (2015) defined self efficacy as a motivational direction that encourages grit when encountering hardships, improves premeditated actions, promotes long-term vision, cultivates self-regulation and s for permits self-correcting if necessary. In other words, self-efficacy, believing in one's skills and drive for learning and performance, is a means for the academic success of students (Hill, 20020 as cited by Koseoglu (2015). Bandura (1997) as cited by Dullas (2018) also argues that perception in one's own efficacy influences choices in life, motivation level, quality of performance, resilience to difficulty and exposure to anxiety and depression. In the context of education, self-efficacy is one of the strongest predictors of academic achievement of students

(Klomegah, 2007) as cited by Dullas (2018) as shown in a research by Magnano, Ramaci, & Platania (2014) who attempted to confirm the correlation between perceived self-efficacy, social self-efficacy and academic performances. 639 Italian students were used as participants in the study from which 478 were from primary schools and 161 were from junior high schools. The researchers also solicited from 478 teachers with their opinion about different disciplines concerning students and their academic performance. Questionnaires such as Scholastic Perceived Self-efficacy (ASCP, Pastorelli *et al.* 2001) and Social Perceived Self-efficacy (ASP/G, Pastorelli *et al.* 2001) were used for data gathering. Results show a positive correlation between self-efficacy and academic performance wherein self-efficacy is said to have a significant role in establishing social and scholastic fitting (Magnano, Ramaci, & Platania, 2014). In addition, Magnano, Ramaci, & Platania (2014) claimed that self-efficacy has a high potential of increasing academic performance. Thus, if students are given the chance and guidance of having high self-efficacy beliefs, they would be able to be self-regulated to surpass the challenges they encounter not only in their studies but also in real life (Arslan, 2012) as cited by Magnano, Ramaci, & Platania (2014).

Hasan et al. (2014) also conducted a research showing how these factors such as mastery experiences, vicarious experiences, social persuasion, and physiological arousal (Bandura, 1994) influence self-efficacy affecting the academic performance of students in Malaysia. The participants who were comprised of 187 Mechanical Engineering students randomly selected. Mean, standard deviation, correlation and regression were used as statistical techniques. Significant relationship was shown between the independent variables

such as the four factors influenced and self-efficacy as mediator. Although it is not strong, Hasan et al. (2014) found a positive relationship between self-efficacy and academic performance.

Literature also claimed that it is the motivational component of self-efficacy that apparently stimulates academic performance (Ashwin, 2006 ; Pritchard & Wilson, 2003; Ridgell & Lounsbury, 2004; Chamorro-Premusic & Furnham, 2003) as cited by Koseoglu (2015). In a study performed by Koseoglu (2015) about self-efficacy as a predictor of academic achievement, strategies for motivated learning played a considerable role. Instruments such as Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991); The Implicit Theories of Intelligence Scale (Grant and Dweck, 2003); and Achievement Goal Inventory (Grant and Dweck, 2003) were utilized by 214 undergraduate university students in a non-profit, private university in Istanbul. For the data analysis, various statistical treatments were employed such as correlation analyses; regression analyses; multivariate analysis of co-variance (MANCOVA); and mediation analyses. Results suggest that students who believe that effort positively modifies intelligences have high self-efficacy. Koseoglu (2015) also claimed that students who have higher level of confidence also have higher chance of attaining higher level of academic achievement. These findings clearly imply that self-efficacy is a predictor of academic achievement (Koseoglu, 2015)

Recently, Pagtulon-an & Tan (2018) conducted an investigation about the mathematics performance and self-efficacy beliefs of grade 8 students in a Rich Assessment Task Environment (RATE) in Central Mindanao University Laboratory High School using

quasi-experimental as research design. The RATE treatment is an integration of Dewey (1916) Learning by Doing Theory. It is described as assistance from a teacher or peer given to the students in which they can perform in groups and can be executed outside the classroom to apply what they've learned in real-life situations (Pagtulon-an & Tan, 2018). One group of students was used as the experimental group exposed in the RATE and the other group served as the controlled group who did not experience RATE. Analysis of covariance was used as a statistical method. Results show that the treatment has increased the self-efficacy beliefs of the low-performing students which were also seen in their performance in mathematics.

Furthermore, students' self-efficacy beliefs affect the preferences they like and the effort they give in their performance (Boekaerts and Cascallar, 2006) as cited by Beattie et al. (2015). Increased efficacy beliefs results a person to connect with more complex goals and responsibilities, thus increasing succeeding level of performance (e.g., Chase, 2001; Escartí & Guzman, 1999; Waung, MacNeil, & Vance, 1995) as cited by Beattie et al. (2015).

Reflection

Self-reflection (or simply, reflection) has been given a vast number of definitions from various sources in the literature (Lew & Schmidt, 2011). Dewey (1910) had defined reflection as “an active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends.” Moattari & Abedi (2008) defined reflection as “the method with which a

person refers to his or her previous experience and recollects that experience, put it forth once again, and reevaluates it.” In addition, reflection guarantees profound thinking while connecting experiences from past, present and future (Guleker, 2015). In classroom setting, Dodd (1995) as cited by Coronado-Aliegro (2007) suggests that it is one of the best ways to promote learning and understanding. However, some researches show that reflection alone could hardly increase students’ academic performance.

Howry (2017) conducted a study about how continuous reflections affect students’ academic achievement. Ziegler & Montplaisir (2012) as cited by Howry (2017) defined reflection as a tool that permits students to make connections and develop their ideas for better learning. The researcher also wanted to know whether students’ reflection would improve if they have been given more opportunities to reflect. Convenient sampling was utilized to complete the participants. The experimental and control group received two different treatments. Students in the experimental group were given continuous reflections with one to three reflection prompts as well as two baseline reflections that must be accomplished after submitting their essay assignment. Students in the control group on the other hand were only given the two baseline reflection for each essay assignment. Findings in this research show no significant difference between the two groups as well as their scores in their first and second reflections. Implications for future researches were identified for providing further suggestions on researches about reflection.

Another recent study with similar findings was conducted by Cavilla (2017) which is about the effect of student reflection on academic performance and motivation. Most researches centered on teachers, not students with regard to the notion of reflection

(Cavilla, 2017). An example is a research conducted by Mountford and Rogers (1996) in which the focus was on reflection of nursing students. Another was the study of Yost, Sentner, and Forlenza-Bailey's (2000) which was about reflection as a primary component of an effective teacher. This drives the researcher to conduct this research. 146 students were used as participants who were asked to complete assignment reflection prompts attached to their written English assignments. Participants were expected to complete 12 assignment reflections throughout the treatment period. Results show no significant relationship between either construct but qualitative analysis was provided that supports implications for teachers on the good effects of student reflection. Besides, reflective practices come into view to affect students on an affective level rather than a cognitive level (Cavilla, 2017).

On the other hand, other researches present findings that support reflection as a mediating factor to increase academic achievement, although the contribution is not direct. Sharif et al. (2013) conducted a research on how guided reflection affects test anxiety of second and third year students in a medical university in Iran. Anxiety is defined as an undesirable feeling experienced by people who foresee and expects uncertain threats (Asadulla-poor, Fati, & Gharaee, 2010) as cited by Sharif et al. (2013). Data questionnaires for demographic profile and the Sarason and Abolghasemi test anxiety scale were used as instruments for the study. Out of 147 students, 100 had test anxiety. From there, 80 students were randomly selected and were placed into experimental and control groups. Participants in the experimental group received the treatment through a two-day guided reflection workshop for six hours per day which included Johns's 9-stage guided reflection model

through Q and A, lecture, and discussion. The control group did not receive any treatment. Findings show that the guided reflection contributed a huge effect in reducing test anxiety of the participants which also leads to increasing learning and academic progress of students.

Guleker (2015) also performed a study targeting the impact of reflection on self-efficacy beliefs as well as attitudes towards reflection per se. Two groups were classified as the control and experimental group comprising a combination of 36 students from two intact writing course classes. These two classes were from two different semesters with the same syllabus and curriculum. The researcher adapted a self-efficacy scale from Pintrich and De Groot (1990) and a reflection questionnaire from Kirby (2009) which were used as instruments for the study. Results show that there is a significant difference between the use of reflection and self-efficacy. Positive responses regarding students' attitude toward reflection in general were also collected. Guleke (2015) states that use of self-assessment and peer-assessment as methods in writing instruction increases self-efficacy.

Self-regulation

Self-regulation is said to be a person's ability to express his or her actions towards goals and standards which comes from one's own yearnings or others' expectations, and guides people adapt to the demands of society and the surroundings (Matric, 2018). Self-regulation has obtained huge interest in recent years as an important predictor of an array of outcomes, including school readiness (Blair and Razza 2007; McClelland et al. 2007;

Morrison et al. 2010), and academic achievement in adolescence (Duckworth et al. 2010b) and other factors. Many researches supported this notion.

Mousavi & Moghtader (2015) studied the effect of self-regulation skills on self-efficacy and happiness of high school students. The study made use of quasi experimental research method. From 130 high school student girls who took the Oxford Happiness Questionnaire, 30 students who got the lowest scores were used as participants who were randomly assigned to experimental and control group with 15 members each. The experimental group received the self-regulated learning strategies employed by the researchers wherein they underwent training for six sessions weekly with 120 minutes per session. The control group on the other hand, did not receive any treatment. The self-regulated learning strategies include familiarity with the self-regulation, motivation increasing and goal setting steps, teaching self-reinforcement, positive thinking, cognitive and metacognitive strategies and management time (Mousavi & Moghtader, 2015). t-test and Analysis of Co-variance (ANCOVA) were used as statistical treatment. Results show a positive and significant effect between self-regulation skills and self-efficacy of high school students. It is an indication that self-regulation training with the use of goal-setting and cognitive skills can assist students for improving the self-confidence and self-efficacy (Mousavi & Moghtader, 2015).

Harding et al. (2018), on the other hand conducted a research about self-regulated learning in the classroom as part of a project of the Assessment Research Center, in partnership with the Department of Education and Training in Australia. The participants of the study were students in Grades 5 to 8 from 42 Victorian public schools and 127 teachers.

A total of 4,232 students voluntarily accomplished the student SRL questionnaire in March/April. Data gathered were used by the teachers to identify their SRL ZPD. On the other hand, teachers who participated in the project underwent eight professional development (PD) modules focusing on Identifying High Capacity Students, Zone of Proximal Development (ZPD), Rubrics, Assessment for Growth, Students' Self-Regulated Learning (SRL), Teaching SRL in the classroom, and Targeted Teaching and Monitoring Progress. Through this, they would be able to restructure strategies for students' ability to regulate their own learning and aimed teaching at the student ZPD. Although the correlation is not strong, findings show that there is a positive relationship between students' SRL behavior and their academic performance. With regard to the teachers, despite their belief on the importance of SRL skills on students' academic performance, only a few of them planned to integrate SRL into teaching and almost half were in doubt to execute SRL as part of their teaching practices. This is an indication that there is a need for further professional development for current teachers on SRL instruction.

Matric (2018) also investigated how elementary students learn with specification on the elements of self-regulation students utilize in the learning process. This study tried to identify students' familiarity with their learning styles, their learning strategies, when and where they learn; and if they reflect on their learning. The participants were 9 students (5 boys , 4 girls). The researcher conducted individual semi-structured interviews which included a series of questions imbedded in a conversation about learning. The participants were then exposed to a group discussion with the idea of self-regulatory learning, learning strategies and learning styles. After the whole process, Matric (2018) concluded that the

students still need to have knowledge of self-regulatory processes and learning strategies, and are unaware of their learning styles. In addition, these students are still capable of improving their academic outcomes if they move toward the learning process more thoroughly, in which they have in common. This can happen only if the students *think* about the learning process, i.e. *learn how to learn* (Matric, 2018).

THEORETICAL FRAMEWORK

In the past years, social learning or social cognition theory of Albert Bandura has garnered a vast research interest when it comes to its contribution in the field of education. One of the constructs of social learning theory is self-efficacy which is commonly defined as people's self-beliefs in their capabilities to do specific tasks. Self-efficacy has been considered a reliable predictor of performance and motivation.

People with high self-efficacy positively affect their achievements and personal well-being in a number of ways. They see difficult tasks not as threats that must be avoided but as challenges that must be mastered. They are able to set goals and sustain determination. They can still maintain their efforts even in the face of mistakes and failures. They can easily recover their level of self-efficacy after setbacks. During threatening situations, they assure themselves that they can hold control over those situations. This kind of perception results to personal fulfillment, reduces stress, and lowers risks of depression.

Conversely, people who lack confidence on their capabilities view difficult tasks as threats. Their commitment to pursuing their goals is weak and their motivation is low. During difficult situations, they concentrate more on their deficiencies rather than thinking of ways to do tasks successfully. They barely give effort and easily give up when faced with difficult tasks. They also recover their self-efficacy slowly after failures or setbacks. Thus, they become victims of stress and are more prone to depression.

To address these problems associated with people who have low self-efficacy, Bandura (1994) presented four main sources of self-efficacy.

The notion of mastery experiences is believed to be the most effective way to create a strong sense of self-efficacy. People tend to look forward to quick results and will later on discouraged by failure if they only become successful easily. Having a high sense of efficacy solicits personal experiences in surpassing hardships through perseverance. When people feel that what they have to succeed is enough, they push themselves with perseverance and confidence and quickly recover from failures. Having been exposed to tough situations, they become stronger from difficulties.

The second way of strengthening self-efficacy is through vicarious experiences. Self-efficacy increases when people observe other people succeed through sustained efforts. This makes them believe that in comparable activities, they too possess the abilities to succeed. However when they observe that others still fail despite showing high efforts, their self-efficacy tends to become low. Observers' perceived similarity to the model influences the impact of one's efficacy. Bandura (1994) stated, "The greater the assumed similarity,

the more persuasive are the model's successes and failures." The observers' self-efficacy does not depend on the models' behavior of they view the model as much different from themselves. People find models competent if they have the capabilities that they want to have for themselves. Through their way of facing challenging situations, these models indirectly pass the knowledge and effective skills for managing tough situations.

Bandura's third sense of self-efficacy is social persuasion. People are likely to employ greater efforts when they are verbally persuaded. Persuasion boosts self-efficacy which directs people to try harder for success which leads to skills development and a sense of self-efficacy. On the other hand, social persuasion alone could hardly sustain high self-efficacy. Persuasion such as pointing out people's lack of capabilities affects them to avoid and quickly surrender to challenging situations. Effective efficacy builders create situations in a way that lead people to believe in their capabilities and avoid placing them in unlikely situations that would prevent them to succeed.

The fourth way of strengthening self-efficacy is reducing stress and changing people's negative emotional and physical state. People partly depend on their emotion when judging their skills and capabilities. They tend to see poor performance as a result of their tension and stress reaction. Mood is also a factor that affects their perception on their abilities. Positive mood enhances their self-efficacy while negative mood lessens it.

Self-efficacy beliefs are the most essential and persistent influence on the preferences people build, their objectives, the effort they exert to a task, their perseverance regarding the task in times of failure or difficulty, the stress they experience and the extent

to which they are vulnerable to depression (Bandura, 1994). Several mediating factors affect self-efficacy contributing to performance when it comes to the learning process. Among these factors, self-regulation for learning is believed to be an effective approach for increasing self-efficacy.

Zimmerman (1989) proposed the notion of self-regulated learning in education. He thinks that self-regulated learning is a practice in which students take part actively to some point in their own learning when it comes to motivation and action. He also suggests a model of self-regulated learning for the learners to demonstrate how they utilize specific approaches in their studies to reach the learning objectives based on their motivation and willingness. Zimmerman (2000) presented the cyclical model which is divided into phases in a separated table. Initially, the processes were incorporated in figure 1 (Zimmerman & Campillo, 2003) and was later revised (Zimmerman & Moylan, 2009) with more processes included in the performance phase with more details emphasizing the processes and how they interact.

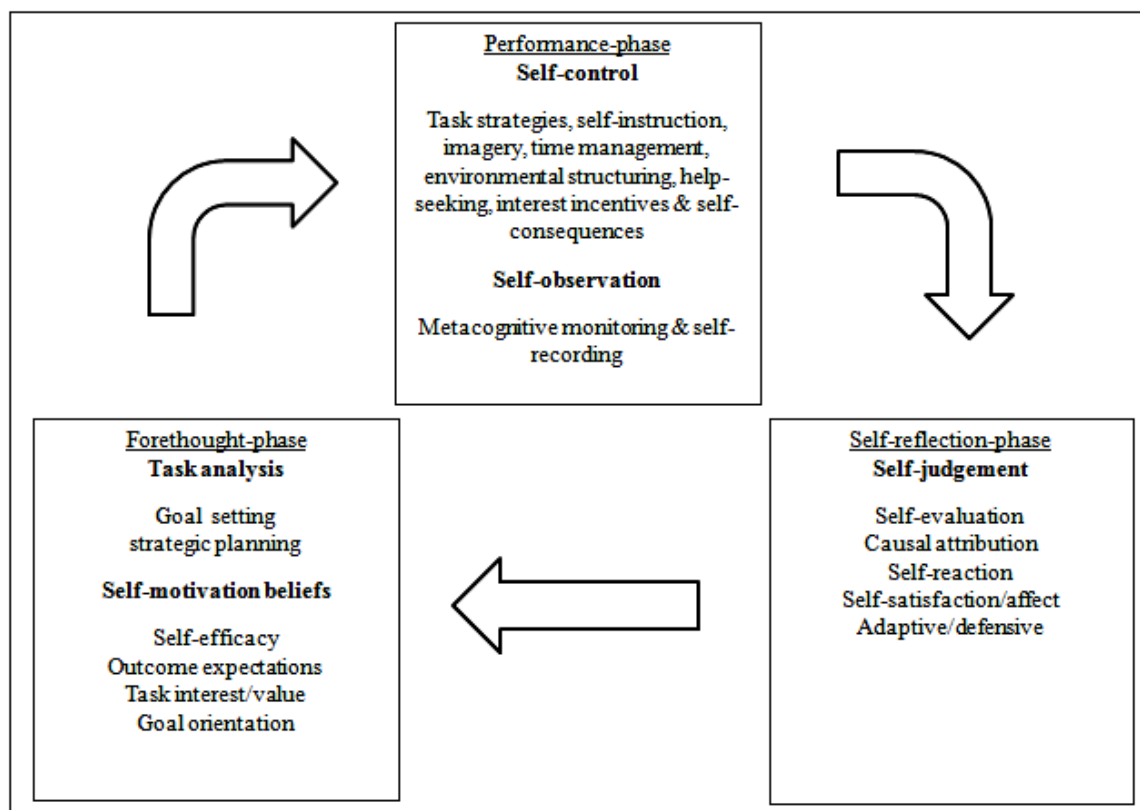


Figure 1. *Phases and processes of self-regulation*
(Zimmerman & Moylan, 2009)

The self-regulatory cycle starts with the task analysis under forethought-phase (Zimmerman & Moylan, 2009) where this is portioned into smaller pieces and previous knowledge and experience were the basis for choosing strategies for all the performances (Winne, 2001) as cited by Laureano (2015). This phase establishes the goals and planning for strategies which are the key factors for the occurrence of self-regulation.

Next in the cycle is the performance-phase where the students keep their focus and that they apply appropriate strategies for learning so that their motivation will not decrease and they can keep track of their growth when it comes to their goals. There are two main

processes in the performance-phase such as self-observation and self-control and for a task to be successful various strategies can be used (Zimmerman and Moylan, 2019).

Self-reflection-phase is the last stage in the cycle which centers on students' judgment of their work as well as analysis of the results. Students experience either positive or negative emotions based on their attribution style while they are rationalizing their success or failure. This influences their future motivation and regulation.

Reflection - "the active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (1933: 9) is how Dewey (1910) defined it as a cognitive process which points out some of the fundamental features that support almost all models and theories of reflection. Dewey's conception on reflection has been challenged in numerous ways over the years by other experts in the same area regardless of its significance and the huge trust of other theorists on his ideas.

Since reflection is perceived to be learning based on experience, Kolb's (1984) framework on Experiential Learning Cycle were used to organize the essential elements of a Personal Reflection Model (Sellar, 2014). Personal Reflection Model is anchored on Gardner's (1993) intrapersonal intelligence domain making use of Kolb's (1994) three-phase framework which has been a more reliable approach to facilitate performance.

Phase (Kolb, 1994)	Questions related to self (Gardner, 1993)
<i>What?</i>	Why have I selected this experience as a focus for reflection? What makes it important for me consciously and purposefully think about this experience at this time?
<i>So What?</i>	What is the focus here as I understand it? Is there more than one level of reflection that I think needs to be considered as a focus for discussion in this experience? In identifying my focus what level(s) am I prioritising in my reflection? Why would that be so? Do my priorities reflect my values and beliefs about the nature of teachers' professional work? Do my priorities reflect anything about how I am developing as a prospective teacher? Do I need to engage at a level of reflection that necessitates engaging with ethical and moral considerations? (critical reflection)
<i>Now What?</i>	Do I need to take action or just think about what action may be appropriate if the circumstances permitted? Do I have the skills, knowledge and strategies to make a well-informed decision about what action may be able to be taken? Can I realistically take action? What personal, social and ideological influences have impacted on the action I would take? How does my proposed action reflect my understanding and personal beliefs regarding what constitutes ethical, professional, effective teaching and the role of the teacher? Are my decisions and proposed actions congruent with my ethical and moral perspectives? Do I have the motivation, perseverance and capacities required to activate my plans successfully?

Figure 2. *A Personal Model of Reflection*

The first step is the “What?” which aims to recognize the circumstances that lead to reflection by identifying an experience that requires reflection, followed by describing it. This is followed by the “So what?” which calls for individuals to examine their experiences, analyze the situations, and check what needs to be considered and assessed. Lastly is the “Now what?” which intends to identify what the individuals should do, and what the individuals need to do. This phase requires action to be taken which triggers

arguments if it is really necessary to take action after reflection for it to become educative. One of the issues presented is aspiring and beginning teachers' dilemma when they encounter this necessity for action. In spite of these arguments, this model seemed to be a functional and constructive foundation for personal model of reflection since it is intended to stimulate concentration on individuals' way of thinking.

CONCEPTUAL FRAMEWORK

This study intends to examine how utilizing reflection practices increase the students' perceived self-efficacy for learning. The diagram below shows the potential effect of the Exam Reflection (ER) Tool, consisting Pre-Exam Reflection and Post-Exam Reflection on self-efficacy for learning. Dewey (1910) suggested that reflective thinking is "an active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends." Abedi & Moattari (2008) as cited by Sharif et al. (2013) defined reflection as "the method with which a person refers to his or her previous experience and recollects that experience, put it forth once again, and re-evaluates it." Students reflect their test-related experiences will help them pick appropriate management strategies for their holistic improvement. Developing a habit of reflecting on their exams, students, with the help of the guide questions in the Pre and Post Exam Reflection (ER) Tool, students may build up their self-regulatory learning strategies. Continuous practice of utilizing the Exam Reflection (ER) Tool triggering self-regulation as mediating factor may increase students' perceived

self-efficacy for learning. Ahmad & Safaria (2013) stated that self-efficacy is a key factor of Bandura's (1977, 1986) social-cognitive theory, which argues that self-influence strongly motivated behavior. Bandura (1994) defined self-efficacy is "as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives."

Figure 3 shows the process of acquiring students' increased perceived self-efficacy. The students will be exposed to a habit of reflecting before and after the test. Reflecting before the test (with the use of Pre-Exam Reflection Tool) requires students to describe how they prepared for the exam. After they take the test, students will then be asked to reflect on their performance in the test (with the use of Post-Exam Reflection Tool). This will have them realize how the preparation they made before the exam reflected on their performance. Habitual practice of doing so triggers self-regulation which will result to thinking of their improved strategies for studying for the test.

Beattie et al. (2015) cited increased perceived self-efficacy guides a person to connect with more complex tasks and goals as well as increasing succeeding level of performance (e.g., Chase, 2001; Escartí & Guzman, 1999; Waung, MacNeil, & Vance, 1995). Thus, the attitude that a person holds about his or her abilities and result of his or her hard work influence in huge ways how they will perform (Meral, Colak, & Zereyak, 2012).

Self-efficacy is a major psychological factor that provides a long term effect on students through cognitive as well as motivational mechanisms (Bandura 1988). Many literatures have found its significant effect on the academic achievement of student.

However, the context of enhancing self-efficacy through reflecting on the result of assessment has been barely explored. This is one of the necessary actions teachers should make to improve their assessment practice. Once achieved, teachers can ensure the progress of the quality of learning (Magno 2012). Since Dewey (1910) introduced the idea of reflection, various models regarding its application were developed. These models serve as guide on how students reflect but did not indicate which area/s in learning reflection is necessarily applicable.

In this study, the researcher used an examination reflection tool to enhance students' self-efficacy. The tool is designed to resolve the emergent concern on assessment which is students' failure on reflecting on the result of assessment. Structured approach on reflection is embedded on this tool which is primarily aligned to Kolb's Personal Reflection Model.

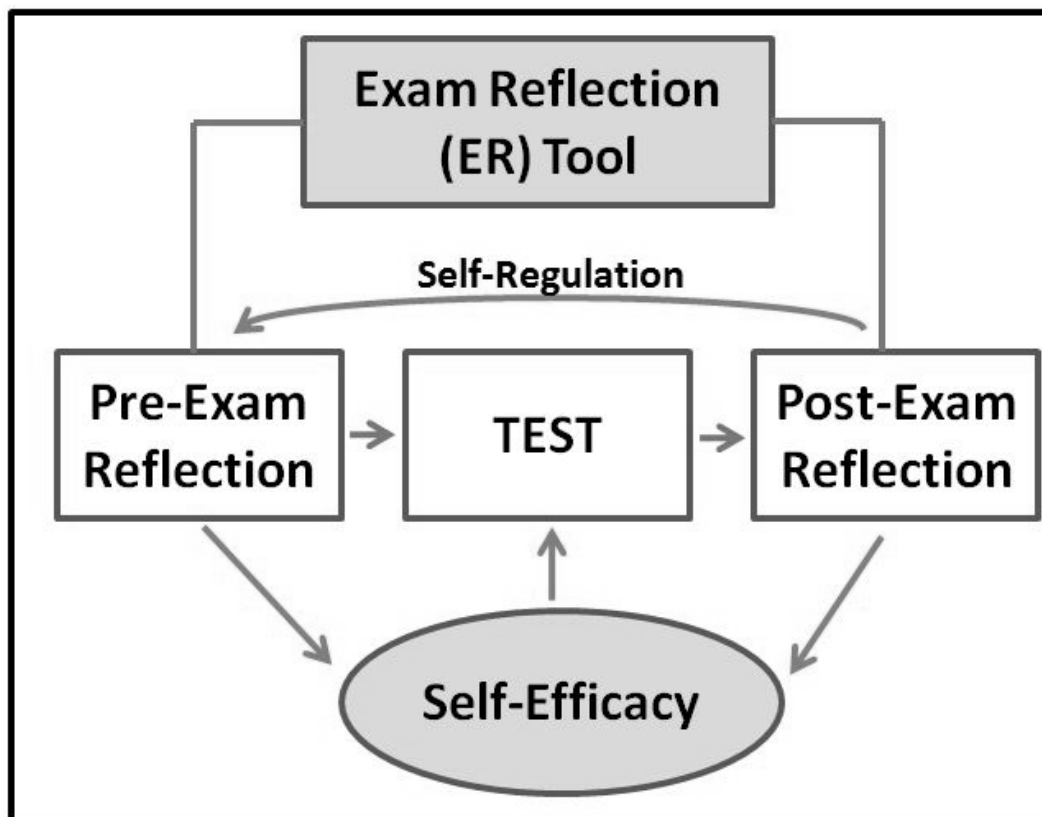


Figure 3. *The effect of using ER Tool on self-efficacy*

There is no doubt that self-efficacy is essential in the holistic development of learners. Acquiring a positive self-efficacy will prepare them to challenging learning situations. A student with high self-efficacy will have the ability to make necessary and appropriate actions as response to various situations. When it comes to learning, students nowadays seem to demonstrate low self-efficacy in dealing with assessments. Students are greatly affected by the result of assessment and this either increases or decreases self-efficacy. This happens because students view assessment as the end process of learning and worse case is that they did not make actions after the result was given to them. Teachers are accountable to this if they will not make a move to change this misconception of students.

In this study, the researcher will make use of Examination Reflection (ER) tool to increase students' self-efficacy. This is like hitting two birds with one stone because this intervention will not only result to having positive gain in self-efficacy, but also will promote reflection on the assessment outcome and will eventually lead to continuity of learning.

RESEARCH QUESTIONS:

On recent years, a number of local studies have started investigating reflective learning because the Department of Education encourages teachers to find ways to guide students in developing reflective thinking skills (de Leon & Prudente, 2018). Aligned with the researches established by aforementioned inquiry, this study aims to determine the effectiveness of utilizing Examination Reflection (ER) tool in increasing students' self-efficacy for learning.

In order to determine the effect of utilizing Examination Reflection (ER) tool on students' self-efficacy for learning, this study seeks to answer the following research questions:

1. What is the demographic profile of the students in terms of the following variables?
 - a. gender
 - b. age

- c. family size
 - d. first quarter average
 - e. study time
 - f. exam preparation?
2. What is the pre-post self-efficacy of students on each group (control and experimental)?
 3. After controlling the effect of pre-self-efficacy, is there a significant difference between the self-efficacy of students in the experimental group (students who were exposed in ER Tool) and in the control group (students who were not exposed in ER Tool)?

Hypothesis

H_0 – There is no significant difference between the self-efficacy of students in the experimental group (students who were exposed in ER Tool) and in the control group (students who were not exposed in ER Tool)

H_1 – There is a significant difference between the self-efficacy of students in the experimental group (students who were exposed in ER Tool) and in the control group (students who were not exposed in ER Tool)

DEFINITION OF TERMS

In doing this research, there are several key words which are being used by the researcher.

Reflection. This term refers to “an active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends” (Dewey, 1910). In this study, it pertains to students’ deep thinking and assessment of their past, present and future experiences.

Self-efficacy. This term refers to an one’s belief in his or her ability to carry out behaviors needed to create specific performance achievement (Bandura, 1977, 1986, 1997). In this study, it pertains to people’s beliefs about their capabilities to succeed in different situations.

Self-efficacy for learning. This term refers to an a person’s belief (confidence) that they can successfully accomplish at a certain level on an task academically or achieve a particular academic goal (Bandura, 1997; Eccles & Wigfield, 2002; Linnenbrink & Pintrich, 2002a). In this study, it pertains to students’ belief and trust for their capabilities for learning and performance.

Self-regulation for learning. This term refers to the extent to which students become “metacognitively, motivationally, and behaviorally active participants in their own learning process” (Zimmerman, 1986, 1989). In this study, it pertains to students’ ability to manage their beliefs and turns them into skills for learning.

CHAPTER 2

METHODS

RESEARCH DESIGN

This study used quasi-experimental design specifically the non-equivalent control group design. It is a research design which includes comparison of variables between the control and experimental groups and any noted differences are credited to be an effect of intervention (Grimshaw et al., 2000).

This design is widely used in educational research because groups may refer to classrooms or schools (Trochim, 2007). On the other hand, it accounts for initial differences that might exist in both groups prior to the treatment. To maximize this design, the use of covariate is strongly recommended to determine any significant difference between the control and experimental group (Campbell, Stanley, & Gage, 1963). The design is illustrated below:

Group	Pre-test	Treatment	Post test
Experimental	T_1	X	T_2
Control	T_3		T_4

SAMPLING AND PARTICIPANTS

The participants came from grade seven students of Captain Albert Aguilar National High School (CAANHS). The method used in assigning participants to groups is by matching the participants with their previous grade point average, then individually assigned them randomly to groups. The students in the experimental group were those who were exposed in using Examination Reflection (ER) Tool while the students in the control group were those who were not exposed to any treatment. The experimental and control groups were assigned as Grade 7 – Flores and Grade 7 –Sabbath respectively. The assignment of students for each section was done by the Grade 7 Level Chairman of CAANHS prior to this research for the purpose of generating homogenous classes for Grade 7 in school year 2019- 2020.

Both sections have a class size of 50 and were handled by same teacher to minimize the effect of teacher-related factors. Students on both groups will be taught with the same competencies from the Kto12 Curriculum Guide in Mathematics (2016). The treatment (the use Examination Reflection (ER) Tool) is the only factor that makes the teaching instruction on two groups different.

INSTRUMENTS

1. Demographic Profile Questionnaire

A demographic profile questionnaire was modified by the researcher to gather information (gender, age, family size, previous general average, time spent studying, and how frequent students prepare for the exam) and one open-ended question (What do you often do after knowing the result of your examination?).

2. Self-Efficacy Scale

A self-report instrument scale, Self-Efficacy for Learning Form – Abridged (SELF-A) (Zimmerman & Kitsantas, 2007), is administered to measure the students' self-efficacy based on their confidence with skills such as taking notes, getting ready for tests, and studying, as well as with motivation, time management, and attention. The main purpose of administering this scale is to assess self-regulation beliefs during academic learning. Using this, the overall self-efficacy is obtained through the mean of the 19-item instrument. Each item is scored on a 100-point scale from zero (“definitely cannot do it”) to 100 (“definitely can do it”).

This 19-item instrument has a single factor structure and has an internal consistency reliability value of 0.97 (Cronbach's alpha). The most often range of acceptable Cronbach's alpha a value is between 0.70 and 0.95 (Tavakol & Dennick, 2011). Thus, Cronbach's alpha value for the said instrument was considered highly reliable.

3. Examination Reflection Tool

A reflection tool is developed to guide the students to reflect before and after the examination. This will guide students in acquiring self-regulatory learning skills that will lead to a positive gain in self-efficacy. It consists of two parts: the pre-examination and post-examination. In pre examination part, there are three open-ended questions about preparation of students before the test and 6-item scale measuring the extent to which students have applied test preparation strategies. In post examination part, there are five open-ended questions that trigger reflective thinking towards the outcome of the examination.

The development and validation of the Examination Reflection (ER) Tool went through the following stages:

Stage 1: Content Validation

The researcher organized a focus group discussion to review existing relevant tools from related literatures and to design the initial draft tool for exam reflection. The group is composed of the researcher as moderator and eight teachers with specialization related to the study. The first draft consists of four –item open-ended questions and ten-item scale in the Pre-ER Tool and eight-item open-ended questions and ten-item scale in the Post- ER Tool.

After the formation of the initial draft, the researcher used Lawshe's method for establishing content validity. Wilson, Pan & Schumsky (2012) as cited by Ayre, Colin & Scally, Andrew (2013) defines Lawshe's method as a tool used to quantify

and establish content validity in various areas such as education, health care, personnel psychology, organizational development, market research, and the like. Based on the responses of the three experts, Content Validity Ratio (CVR) and Content Validity Index (CVI) were obtained. The Content Validity Ratio is widely used for establishing content validity and basis for rejection or retention of items (Wilson, Pan, & Schumsky, 2012). Items with CVR at most 0.5 will be deleted; items with CVR between 0.5 and 0.8 were subjected to revision; items with CVR between 0.8 and 1 were considered good item and were retained. The Content Validity Index is the mean of Content Validity Ratio for all the items included in the instrument. Davis (1992) suggests that a CVI of at least 0.80 is considered evidence of good content validity.

Three open-ended items in the ER Tool (pre and post) were deleted and two items need revision. Six items in the scale (3 in the pre ER and 2 in the post ER) were deleted and four items need revision.

The Content Validity Index of the final draft of the ER tool as an instrument is 0.87. Thus, the ER Tool has good content validity.

Stage 2: Pre-Study

A pre-study was conducted to ensure practical feasibility of the ER Tool. The second draft of the tool was administered to ten students who were chosen by

convenient sampling. An interview was conducted to discuss the comprehensibility of the questions in the tool.

After the interview with the students, two open-ended questions in the post ER were revised to cope with the comprehension level of the potential respondents.

Stage 3: Pilot Study

The researcher administered the third draft to twenty students to determine if the open-ended questions in the instrument can generate expected possible answers from the respondents.

Stage 4: Reliability

The updated draft of the tool is administered to 100 respondents to measure internal consistency of the pre and post ER Likert scales in the instrument. The internal consistency reliability values of Cronbach's alpha for the six-item scale in the pre ER and nine-item scale in the post ER are 0.76 and 0.74 respectively. No item needs to be deleted. Thus, the scale used in the ER Tool is accepted to be reliable.

DATA GATHERING PROCEDURE

The study has three phases such as pre-experimental phase, experimental phase, and post experimental phase.

Phase 1: Pre-experimental

The Self-Efficacy for Learning Form – Abridged (SELF-A) (Zimmerman & Kitsantas, 2007) was administered by the researcher and was used as the pre-test to determine the self-efficacy of students. ER Tool was developed and validated. Letters of request and parents consent were also made.

Before utilizing the ER Tool, all prospective participants of the experimental group were given orientation about the study. The orientation includes a brief discussion of the purpose of the research, guide on the use the ER tool, and an explanation of the rights of the participants.

Phase 2: Experimental

Using the ER Tool, students in the experimental group were asked to reflect on their summative tests for the whole quarter in their Mathematics class. On the other hand, the students who belong in the control group did not receive any treatment.

Phase 3: Post Experimental

The Self-Efficacy for Learning Form – Abridged (SELF-A) (Zimmerman & Kitsantas, 2007) was administered to the two groups the day after the experimental period. The results of the pre-test and post-test were analyzed using descriptive and inferential

statistics to determine the effectiveness of utilizing the ER Tool on increasing students' self-efficacy.

DATA ANALYSIS

Descriptive statistics in this study includes means, standard deviations, and ranges of all demographic variables on the questionnaires and dependent variables in the scale. All data were quantifiable through coding of numerical values. Frequency distributions and necessary graphs were also provided.

This study made use of inferential statistics specifically Analysis of Covariance (ANCOVA) which is an extension of the ANOVA (Analysis of Variance) where the main effects and interactions are considered after the effects of some other associated variables that have been removed. The influence of the covariate (pre-test self-efficacy scores) is removed by adjusting the scores on the dependent variable in order to address initial differences on the covariate (Mertler & Vannatta, 2002). SPSS was used as the statistical program to analyze these data.

ANCOVA has the following assumptions:

- A. The dependent variable and covariate should be measured in interval or ratio level.
- B. The independent variable has two or more categorical independent groups
- C. Independence of Observation.

- D. There is no significant outlier.
- E. The scores should be normally distributed for each category of the independent variable.
- F. There is homogeneity of variance.
- G. There is significant relationship between the covariate and the dependent variable.
- H. Homogeneity of Regression Slope

On the other hand, the ER Tool also includes open-ended questions that would trigger students to be self-regulated which would contribute to their level of self-efficacy. Participants' responses were analyzed through thematic analysis. Braun & Clarke (2006) defines thematic analysis as a qualitative method for 'identifying, analysing, and reporting patterns (themes) within data.' A coding framework was developed for the responses gathered from participants' answers in the open-ended questions in the ER Tool. Discussion of the results related to this is structured based on the themes that emerged from the responses. Data gathered from the open-ended questions underwent following phases in thematic analysis (Braun & Clarke, 2006) : (1) familiarising yourself with your data; (2) generating initial codes; (3) searching for themes; (4) reviewing themes; (5) defining and naming themes; and (6) producing the report.

ETHICAL CONSIDERATIONS

This study ensures that the respondents participated on the basis of informed consent provided with sufficient information with regard to taking part to this study that allows them to understand the implications of participation. In addition, participants were also informed about their rights to withdraw from the study at any stage whenever they wish to do so. Anonymity and privacy of the participants were also maintained. All the information related to them is confidentially handled. The use of discriminatory and offensive words was also avoided during the formulation of questionnaires, scales, focus group questions, interview, and the like. It also ensures that the researcher is not one of the teachers of the participants. Their physical and physiological safety is also prioritized.

With regard to the acknowledgement of works of other authors used in any part of this study, American Psychological Association (APA) referencing system was used. All the bases of the research data such as documents, records, works, performances, or archival materials are public domain.

CHAPTER 3

RESULTS AND DISCUSSION

RESULTS

In this section, descriptive statistics (mean, standard deviation, frequency, percentage) completed for each group are presented. Appropriate statistical tools were utilized to compare the two groups (Control and Experimental) in terms of the following variables: Chi-square test of independence for the comparison of gender; Mann-Whitney U test for the comparison of age; Fisher's exact test for the distribution of family size and comparison of participants' behavioral engagement; and Two-Independent sample t-test for the comparison of first quarter grade.

Moreover, to answer research question 1, mean and standard deviation for Pre and Post Self-efficacy of each group (Control and Experimental) was computed. Paired sample t-test was used to compare the two means for each group.

Most importantly, in order to answer research question 2, results of the ANCOVA and its assumptions are thoroughly discussed.

In this research, the overall gender distribution ($N=101$) showed that there were 48.1% (25) male and 51.9% (27) female participants in the control group; and 42.9% (21) male and 57.1% (28) female participants in the experimental group. Overall, there were 52 participants in the control group and 49 participants in the experimental group. Forty five

point five percent (45.5% = 46)) of the total number of participants consist of the control group and fifty four percent (54% = 55) consist of the experimental group.

Table 1.
Comparison of Gender

Demographic Variable for Gender	Control (n=52)	Experimental (n=49)	Total (N=101)
<i>Male</i>	25 (48.1%)	21 (42.9%)	46 (45.5%)
<i>Female</i>	27 (51.9%)	28 (57.1%)	55 (54.5%)
<i>Total</i>	52 (100%)	49 (100%)	101 (100%)

A Chi-square test of independence was calculated to compare the frequency of gender (males and females) in the control and experimental group. McHugh (2013) defines Chi-square as a non-parametric test used to analyze difference in groups when the dependent variable is at nominal level. He also states that like other non-parametric statistics, when it comes to data distribution, the Chi-square is robust.

Table 2.
Chi-Square Tests for Gender

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	.277 ^a	1	.599		
Continuity Correction ^b	.107	1	.744		
Likelihood Ratio	.277	1	.598		
Fisher's Exact Test				.690	.372

Linear-by-Linear Association	.274	1	.600
N of Valid Cases	101		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 22.32.

b. Computed only for a 2x2 table

No significant association was found ($\chi^2(1) = .277, p > .05$), demonstrating that there is no significant difference between the two groups when it comes to gender. A number of studies have found the differences on level of self-efficacy between genders (Mansor & Sawari, 2013). On the contrary, the recent local study of Dullas (2018) claimed that no significant gender difference existed on high school students' perceived self-efficacy. The opposing findings will not be an issue in this study since the two groups do not differ in gender.

Both the control group participants ($n = 52$) and the experimental group participants ($n = 49$) were of similar ages ($M = 13.4$, $SD = 0.81$ and $M = 13$, $SD = 0.5$ respectively). The overall average age for both groups was 13.07 years ($SD = 1.65$). Participants ranged in age from 11 to 15 years.

Table 3.
Comparison of Age

Demographic Variable for Age	Control ($n=52$)	Experimental ($n=49$)	Total ($N=101$)
Mean	13.14	13	13.07
SD	0.81	0.5	1.65

A Mann-Whitney U test was calculated to determine if ages differed significantly between the two groups (control and experimental). Shier (2004) defines Mann-Whitney U test as a non-parametric tool designed to test the null hypothesis that two samples come from the same population.

Table 4.
Test Statistics for Age

	Age
Mann-Whitney U	1222.000
Wilcoxon W	2447.000
Z	-.449
Asymp. Sig. (2-tailed)	.653

a. Grouping Variable: Group

The result indicated that age does not differ between control group ($Mdn = 52$) and experimental group ($Mdn = 49.94$, $U = 12222$, $p = .653$). This result was expected since the respondents on both groups are in the same grade level. Age was found to have a positive relationship on self-efficacy (Hassan & Alasmari, 2015). Since there is no significant difference in terms of ages on both groups, its potential effect on the self-efficacy (dependent variable) is minimized.

In terms of family size, 1.9% (1) belong to extra small (XS) family (2 members), 36.5% (19) belong to small (S) family (3 – 4 members), 40.4% (21) belong to medium (M) family (5 – 6 members), 9.7% (5) belong to large (L) family (7 – 8 members), and 11.5% (6) belong to extra large (XL) family (9 and above members) in the control group. For the experimental group, the distribution of their family size classification are 4.1% (2 from

XS), 38.8% (19 from S and M), 14.2% (7 from L), and 4.1% (2 from XL) respectively. For both groups, the entire participants comprise 3% (3 from XS), 37.6% (38 from S), 39.6% (40 from M), 11.9% (12 from L), and 7.9% (8 from XL) respectively.

Table 5.
Distribution of Family Size

Demographic Variable for Family Size	Control (n=52)	Experimental (n=49)	Total (N=101)
<i>XS</i>	1 (1.9%)	2 (4.1%)	3 (3%)
<i>S</i>	19 (36.5%)	19 (38.8%)	38 (37.6)
<i>M</i>	21 (40.4%)	19 (38.8%)	40 (39.6%)
<i>L</i>	5 (9.7%)	7 (14.2%)	12 (11.9%)
<i>XL</i>	6 (11.5%)	2 (4.1%)	8 (7.9%)

The data obtained from the family size of the respondents failed the assumption of Chi-square test of independence. For this reason, Fisher's Exact Test was used as an alternative to determine if difference on family size exists between the two groups (control and experimental). The Fisher exact test is a statistical test used to compare non-random associations between or among categorical variables (Frey, 2018).

Table 6.
Chi-Square Test/Fisher's Exact Test for Family Size

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.680 ^a	4	.613	.636		
Likelihood Ratio	2.779	4	.596	.635		
Fisher's Exact Test	2.690			.642		
Linear-by-Linear Association	.778 ^b	1	.378	.408	.219	.057
N of Valid Cases	101					

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.46.

b. The standardized statistic is -.882.

The result indicates that the difference was not statistically significant ($p < .05$). Family size was found to have a significant contribution on self-efficacy because parents with several children may find it difficult to support them on the development of their self-efficacy (Meunier and Roskam, 2008). In this study, the two groups do not differ in family size. This will ensure the attribution of the difference on post self-efficacy on the given treatment (ER Tool).

For the first quarter grade, the general average grade of the participants were 85.9% ($SD = 3.39$) in the control group and 85.14% ($SD = 3.92$) in the experimental group. When combined, the overall average grade of the participants in the first quarter was 85.53 ($SD = 3.66$).

Table 7.
Comparison of First Quarter Average

Demographic Variable for Grade	Control (<i>n</i> =52)	Experimental (<i>n</i> =49)	Total (<i>N</i> =101)
<i>Mean</i>	85.9	85.14	85.53
<i>SD</i>	3.39	3.92	3.66

Two-independent sample t-test was used to determine significant difference between the first quarter grades of the two groups. It is a tool used to analyze if there is a significant difference between the mean scores for the two groups (University of Arizona Military Reach, 2009, as cited by Banda, 2018).

Table 8.
Independent Samples Test for First Quarter Average

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
First Qtr Average	Equal variances assumed	.859	.356	1.045	99	.299	.76099	.72824	-.68399	2.20597
	Equal variances not assumed			1.040	94.951	.301	.76099	.73146	-.69115	2.21313

The result shows that there is no significant difference between the first quarter grades of control group and experimental group at .05 level of significance ($t = 1.04$, $df =$

99, $p > .05$). This implies that the two groups have shown equal academic success in the quarter prior the study. It is necessary to obtain this homogeneity of school grades because it is found that there is strong interconnectedness between self-efficacy and academic grades (Taylor, 2014). This homogeneity will reduce the potential of school grade as a contributing factor on the differences of the post self-efficacy (independent variable) of two groups.

For the study time, 63.5% (33) of the participants from the control group and 55.1% (27) from the experimental group reported that they study every below 1 hour and 30 minutes a day (59.4% = 60 for both groups); 25% (13) from the control group and 34.7% (17) from the experimental group study every 1 hour and 30 minutes to 2 hours a day (59.4% = 30 for both groups); 7.7% (4) from the control group and 6.1% (3) from the experimental group study every 2 hours and 30 minutes a day (6.9% = 7 for both groups); 1.9% (1) from the control group and 2% (1) from the experimental group study every 3 hours and 30 minutes a day (2% = 2 for both groups); and 1.9% (1) from the control group and 2% (1) from the experimental group study every above four hours a day (2% = 2 for both groups).

In terms of their preparation for the exam, 1.19% (1) from the control group and 6.1% (3) from the experimental group (4% = 4 for both groups) stated that they never prepare for the exam; 80.8% (42) from the control group and 91.8% (45) from the experimental group (86.1% = 87 for both groups) stated that they sometimes prepare for the exam; and 17.3% (9) from the control group and 2% (1) from the experimental group (9.9% = 10 for both groups) stated that they always prepare for the exam.

Table 9.
Comparison of Participants' Behavioral Engagement

Demographic Variable		Control (n=52)	Experimental (n=49)	Total (N=101)
Study Time	<i>below 1hr & 30mins a day</i>	33 (63.5%)	27 (55.1%)	60 (59.4%)
	<i>1hr & 30mins – 2hrs a day</i>	13 (25%)	17 (34.7%)	30 (29.7%)
	<i>2hrs & 30mins – 3hrs a day</i>	4 (7.7%)	3 (6.1%)	7 (6.9%)
	<i>3hrs & 30mins – 4hrs a day</i>	1 (1.9%)	1 (2%)	2 (2%)
	<i>above 4hrs a day</i>	2 (1.9%)	1 (2%)	2 (2%)
Exam Preparation	<i>Never</i>	1 (1.19%)	3 (6.1%)	4 (4%)
	<i>Sometimes</i>	42 (80.8%)	45 (91.8%)	87 (86.1%)
	<i>Always</i>	9 (17.3%)	1 (2%)	10 (9.9%)

The data obtained from the study time and frequency of exam preparation indicate their behavioral engagement (Christenson, Stout, and Pohl, 2012). Since both failed the assumption of Chi-square test of independence, Fisher's Exact Test was used to determine the difference between behavioral engagement (in terms of study time and frequency of

exam preparation) of the two groups (control and experimental). Past studies found that behavioral engagement of student is highly related to self-efficacy (Majer, 2009, as cited by Dogan, 2015). Students who are more engaged have been found to have a higher self-efficacy than those with low level of engagement (Eccles, 1993, as cited by Dogan, 2015). Moreover, relationship between students' engagement and self-efficacy is more evident in high school (Dogan, 2015).

Table 10.
Chi-Square Tests/Fisher's Exact Test for Study Time

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	1.188 ^a	4	.880	.910		
Likelihood Ratio	1.190	4	.880	.910		
Fisher's Exact Test	1.723			.902		
Linear-by-Linear Association	.184 ^b	1	.668	.734	.378	.083
N of Valid Cases	101					

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .97.

b. The standardized statistic is .429.

Table 11.
Chi-Square Tests/Fisher's Exact Test for Exam Preparation

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	1.188 ^a	4	.880	.910		
Likelihood Ratio	1.190	4	.880	.910		
Fisher's Exact Test	1.723			.902		

Linear-by-Linear Association	.184 ^b	1	.668	.734	.378	.083
N of Valid Cases	101					

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .97.

b. The standardized statistic is .429.

The result indicates that the difference was not statistically significant on study time at home ($p > .05$) but statistically significant on the frequency of examination preparation ($p < .05$). This implies that the two groups spend equal time in studying at home but the control group prepares for examination more frequently than the experimental group. The frequency of examination preparation is a potential covariate in this study but was disregarded due to its non-significant relation to the post self-efficacy ($r = .124, p = .218$).

On the other hand, summary of responses (see Appendix E5) of the participants on the open-ended question in the demographic profile questionnaire suggest that most of the students in both groups (Control and Experimental) seldom reflect on the outcome of their exam. This implies that there is an emergent need to change this habit through the utilizing ER Tool.

Table 12.
Pre and Post Self-efficacy of Control Group

Control Group (n = 52)	Mean	SD	Difference Between Means	t-value	Sig. (2- tailed)
Pre-Self-efficacy	63.87	8.99			
			0.423	1.921	0.06
Post-Self-efficacy	64.29	9.07			

Table 12 indicates the pre-self-efficacy mean (63.87) and the post-self-efficacy mean (64.29) of the students who did not receive the treatment (Control group). A Paired Sample t-test was calculated to compare the two means. Salkind (2010) defines Paired Sample t-test as a test of hypothesis used to determine if the population of the two dependent groups is the same.

The result of paired sample t-test shows that there is no significant difference between their pre-self-efficacy ($M = 63.87$, $SD = 8.99$, $n = 52$) and post-self-efficacy ($M=64.29$, $SD = 9.07$, $n = 52$) at .05 level of significance ($t = 1.921$, $df = 0.432$, $p > .05$). This implies that the self-efficacy of students in the controlled group did not significantly increase over one quarter of the school year.

Table 13.
Pre and Post Self-efficacy of Experimental Group

Experimental Group (n = 49)	Mean	SD	Difference Between Means	t-value	Sig. (2- tailed)	Cohen's d
Pre Self-Efficacy	62.27	11.07	2.30	8.021	.000	1.14
Post Self-Efficacy	64.57	10.77				

Table 13 indicates the pre-self-efficacy mean (62.27) and the post-self-efficacy mean (64.57) of the students who receive the treatment (experimental group). A Paired Sample t-test was also calculated to compare the two means. The result shows that there is a significant difference between their pre-self-efficacy ($M = 62.27$, $SD = 11.07$, $n=49$) and

post-self-efficacy ($M=64.57$, $SD = 10.77$, $n = 49$) at .05 level of significance ($t=8.021$, $df = 2.30$, $p < .05$). This implies that the self-efficacy of students of the experimental group significantly increase over one quarter of the school year. The effect size for this statistical analysis used Cohen's d statistic. Cohen's d is defined as a tool used to determine the magnitude of difference between two or more groups on a given variable with larger values that represent a difference between the two groups on that variable (Salkind, 2010). The computed effect size ($d = 1.14$) exceeded the Cohen's (1988) convention for a large effect ($d = .80$) and suggested a very high practical difference between the pre-self-efficacy and post-self-efficacy.

The main research hypothesis in this study states that there is no significant difference between the post-self-efficacy of the students who experienced using Examination Reflection Tool (experimental group) and those who did not (control group), after controlling the effect of pre-self-efficacy in both groups. Analysis of Covariance was used to test this hypothesis. Before conducting ANCOVA, several assumptions should be met in order to ensure the robustness of its statistical power. These assumptions include: (a) the dependent variable and covariate are in interval or ratio level; (b) the independent variable has two or more categorical independent groups; (c) there is independence of observation; (d) there is no significant outlier; (e) the scores should be normally distributed for each category of the independent variable; (f) there is homogeneity of variance; (g) there is significant relationship between the covariate and the dependent variable; and (h) there is homogeneity of regression slope. When using ANCOVA, certain assumptions must

be checked. Failure of these assumptions may lead to erroneous conclusion. Thus, alternative approaches to ANCOVA must be considered (Johnson, 2016).

The first three assumptions were not violated based on the given methodology of the study. Both the covariate (pre-self-efficacy) and independent variable (post-self-efficacy) are in interval level. Students were assigned to two groups (controlled and experimental) using the match pair method. The remaining assumptions were confirmed using different statistical tests.

An outlier is an observation that appears to deviate from other set of data (Johnson, 1992, as cited by Ben-Gal, 2005). In order to find significant outlier, visual inspection on Box Plots for pre and post-self-efficacy of each group was used. Figure 4 and 5 show that there is no significant outlier for pre and post-self-efficacy of each group.

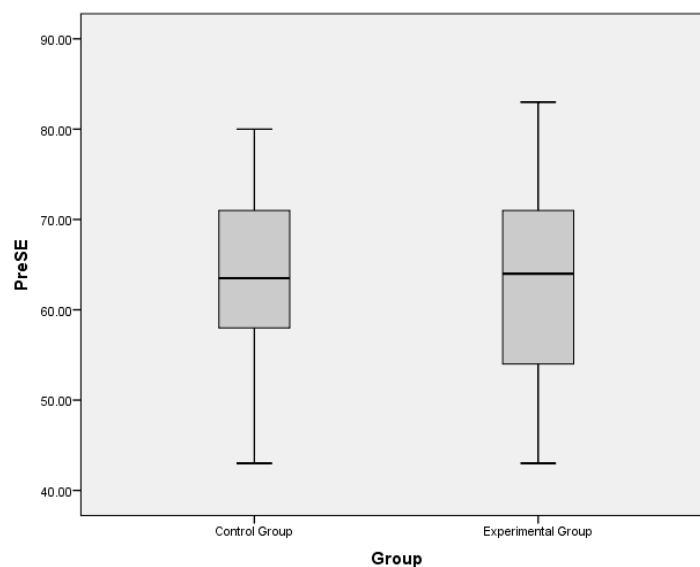


Figure 4. *Box Plot for Pre-Self-efficacy*

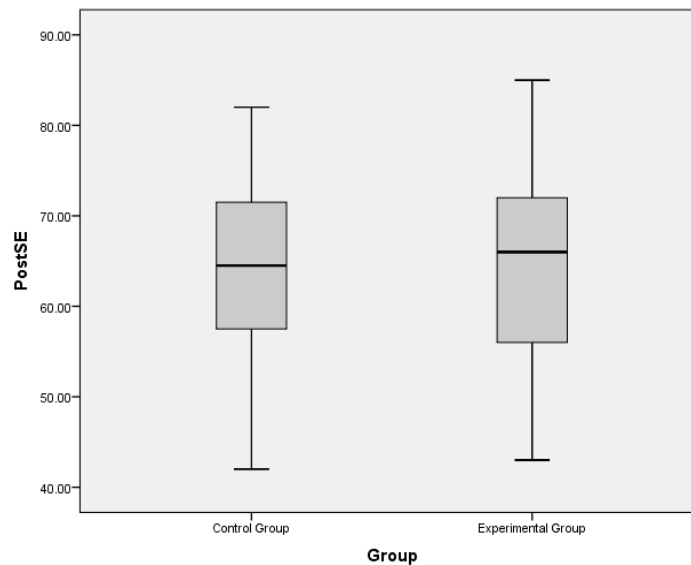


Figure 5. *Box Plot for Post Self-efficacy*

To test for the normality of the pre and post-self-efficacy, Kolmogorov-Smirnov and Shapiro-Wilk statistics were used. Chakravarti, Laha, & Roy (1967) define Kolmogorov-Smirnov as a test used to determine if a sample is from a population with a specific distribution. Peat & Barton (2005) as cited by Ghasemi & Zahediasl (2012) define Shapiro-Wilk as a test based on the correlation between data and corresponding normal scores. They also claim that it is more powerful than the Kolmogorov-Smirnov. Researchers also recommend Shapiro-Wilk as the best tool to test normality of data (Thode, 2002, as cited by Ghasemi & Zahediasl, 2012).

Table 14.
Tests of Normality

	Group	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
PreSE	Control Group	.120	52	.060	.973	52	.284
	Experimental Group	.093	49	.200*	.966	49	.173
PostSE	Control Group	.102	52	.200*	.980	52	.506
	Experimental Group	.109	49	.200*	.976	49	.428

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 14 shows the results of Kolmogorov-Smirnov and Shapiro-Wilk statistics of the pre and post-self-efficacy of both groups. The result indicates that the pre and post-self-efficacy of both groups have non-significant values ($p > .05$). This suggests that the data for pre and post-self-efficacy are normally distributed for each group.

Table 15.
Levene's Test of Equality of Error Variances

Dependent Variable: PostSE			
F	df1	df2	Sig.
2.713	1	99	.103

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + PreSE + Group

Table 15 shows the result for Levene's Test for homogeneity of variance. NIST/SEMATECH e-Handbook of Statistical Methods (2013) states that Levene's test is a tool used to verify the assumption of homogeneity of variance and also to assess if samples have equal variances. The result indicates that Levene's Test for homogeneity of variance

was not significant [$F(1,99) = 2.713, p = .103$]. Thus, the assumption of homogeneity of variance was not violated.

Table 16.
Relationship between Pre and Post Self-efficacy

		PreSE	PostSE
PreSE	Pearson Correlation	1	.979**
	Sig. (2-tailed)		.000
	N	101	101
PostSE	Pearson Correlation	.979**	1
	Sig. (2-tailed)	.000	
	N	101	101

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

Table 16 shows the result of Pearson correlation analysis for the entire sample (N= 102) for the pre and post-self-efficacy. Pearson correlation is a statistical tool used to measure linear relationship between two variables (interval or ratio) in which the value can be between -1 and 1 (Cramer, 1998, as cited by Chee, 2015). The result indicates that there is a significant relationship between the covariate which is pre-self-efficacy and the dependent variable which is post-self-efficacy ($r=.976$ and $p < .05$).

Table 17.
Tests of Homogeneity of Regression Slope

Dependent Variable: PostSE

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	9453.255 ^a	3	3151.085	981.433	.000
Intercept	20.715	1	20.715	6.452	.013
Group	10.441	1	10.441	3.252	.074
PreSE	9215.811	1	9215.811	2870.346	.000
Group * PreSE	3.380	1	3.380	1.053	.307

Error	311.438	97	3.211
Total	428983.000	101	
Corrected Total	9764.693	100	

a. R Squared = .968 (Adjusted R Squared = .967)

Table 17 shows the result of the test of homogeneity of regression slopes. Steyn (2013) states that in homogeneity of regression slopes or test of parallelism, there should have the same slopes across all levels of the categorical grouping variables in different variables and any covariate like in ANCOVA and MANCOVA. The result indicates that there is no significant interaction between the covariate (pre-self-efficacy) and the treatment [$F(1, 97) = 3.38, p = .307$]. This implies that the relationship between students' pre and post-self-efficacy are equal whether they belong to experimental or control group.

Since all the said assumptions were verified using different statistical tests, Analysis of Covariance was conducted and served as main analysis for this study. Based on the result of ANCOVA, the null hypothesis in this study was rejected. Thus, there is a significant difference between post-self-efficacy of the experimental and control group [$F(1, 98) = 26.332, p = .000, \eta^2 = .212$] after controlling the possible effect of pre-self-efficacy.

Furthermore, corresponding partial eta squared value ($\eta^2 = .212$) indicates a large effect size. Richardson (2011) and Cohen (1969) give values for partial eta squared such as .0099, .0588, and .1379 for small, medium, and large effect sizes respectively. This also implies that 21.2% of the variance of the post-self-efficacy is explained by the given

treatment which is the use of Examination Reflection Tool. Table 18 summarizes the result of the ANCOVA.

Table 18.
Tests of Between-Subjects Effects

Dependent Variable: PostSE

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9449.875 ^a	2	4724.938	1470.831	.000	.968
Intercept	24.817	1	24.817	7.725	.007	.073
PreSE	9447.855	1	9447.855	2941.032	.000	.968
Group	84.590	1	84.590	26.332	.000	.212
Error	314.818	98	3.212			
Total	428983.000	101				
Corrected Total	9764.693	100				

a. R Squared = .968 (Adjusted R Squared = .967)

Although this is not the focus of the study, comparison of quantitative and qualitative data between the first and last responses of the participants in the ER provides additional support for the positive effect of the treatment on their self-efficacy.

A thematic analysis was conducted to provide qualitative support on the quantitative findings in this study. Students initial and final responses from the ER tool were compared and analyzed based on established theoretical framework. This method explains how the findings are consistent with the pre-existing studies (Braun & Clarke, 2006). A summary of participants' exact responses categorized into the emerged themes is presented in tabular form. Three main themes are identified and discussed in no particular order.

Table 19.
Higher Academic Awareness: enthusiasm for improvement

Change in Response	
Responses on the First Reflection	Responses on the Last Reflection
"No, because I'm comfortable with my strategy and I'm nervous."	"Yes, I will do my best to the next exam and I will have more time to review."
"No, because the time I give for studying is enough."	"Yes, now I will pay more attention in studying than playing ML."
"No, because I believe I can do this things in my own way or strategy."	"Yes, because I want to have higher score."
"Yes, next time I will review all my notes."	"Yes, I will try to do what my other classmates are doing."
"Yes, I will listen more to my teacher and study how to solve."	"Yes, I will do my best to get high score in the next exam."
"No, I'm fine with it. "	"Yes, my new strategies are sharing information with my classmates and pray before the exam."
"No, I will memorize all the solutions and the songs if I have to."	"Yes. Because of that, maybe next time I will pass the exam. The new strategy that I will use is asking help from tutors."
"I am willing to change my preparations because it looks like it's not working and if I still continue it I will fail."	"Yes, I think I should change it because it's not effective. I even failed in the exam."

The theme "higher academic awareness" (see Table 19 and 20) which consists of two sub-themes such as "enthusiasm for improvement" and "more detailed/specified reflection" is prevalent on the change in response on the first and last reflection. These two are associated to metacognitive awareness in which Schraw & Dennison (1994) as cited by Hermita & Thamrin (2015) defined as the 'ability to reflect upon, understand, and control one's learning.' In their study, it is found that metacognitive awareness has a positive relationship with self-efficacy which implies that the higher the students' metacognitive

awareness the higher the students' self-efficacy (Ghonsooly et al. 2014). This relationship is inferred from Bandura (1997)'s concept of self-regulation.

Table 20.
Higher Academic Awareness: more detailed/specified reflection

Change in Response	
Responses on the First Reflection	Responses on the Last Reflection
"Bonus part because those questions are questions I've never encountered before."	"I think the transposing the absolute value because that's the most crucial part in the test."
"I think it's the bonus part."	"Numbers 3, 4 and the graphing solution and interval solution"
"The solving part because it's hard."	"Interval notation and graphical solutions because I'm always confused what will I write"
"In part of multiplying because I forgot the steps."	"In giving interval solution because I'm very confused which one will I write first whether it is the infinite sign or the number"
"The first part is hard."	"In transposing and when deciding if it is negative or positive and in the sign and graphing"

Another theme, "manifesting a greater inner drive" (see Table 21 and 22) which comprises the two subthemes namely "increased self-confidence" and "more positive motivation for studying" is illustrated on the difference between the students' first and last reflection. Based on the theory of self-efficacy, confidence and self-efficacy are two distinct variables that share a number of conceptual similarities (IHSAN et al. 2015). This indicates that students who have a higher self-efficacy are more confident. Consistent with previous literatures, IHSAN et al. (2015) found that a strong link between confidence and

motivation. According to Bandura (1997), being motivated is a good evidence of high self-efficacy. Bandura (1977) also claimed that self-efficacy is a pre-requisite of motivation and serves as its major ingredient. The higher the self-efficacy of students the more they are motivated to participate and accomplish learning task (Schunk, 2012 as cited by Firmansyah et al., 2018). The two variables are found to have a high significant relationship (Akram & Ghazanfar, 2014). This claim is consistent with a more recent study of Firmansyah et al. (2018) which found that students with high self-efficacy tend to increase motivation for learning.

Table 21.
Manifesting a Greater Inner Drive: increased self-confidence

Change in Response	
Responses on the First Reflection	Responses on the Last Reflection
"No, it's faster than all the strategies I have and I learn faster too."	"No, because I'm comfortable with my strategy and I can clearly understand the topic."
"No, because my strategy is always effective in other subjects because I always get test anxiety."	"No, because my strategy perfectly nailed what I aim."
"Yes, I will review my notes before the exam."	"No, because this is the best strategy that I can think of."
"Yes, I will use the formula."	"No, because this strategy is effective for me."
"No, because I know that it is effective but my notes are incomplete."	"No, because for me it really helps and if I don't have notes, I borrow the notebook of my classmates."
"Yes, I will not chill while taking the exam and while studying."	"No, because it really helped me a lot."
"Yes, by distributive method."	"No, because it helps me to the other part that I didn't remember."

Table 22.

Manifesting a Greater Inner Drive: more positive motivation for studying

Change in Response	
Responses on the First Reflection	Responses on the Last Reflection
"I always have notes and a friend who is good in math to help me."	"Review my notes and study the questions with friends/classmates because it is good when you are learning with fun."
"It is to make your own reviewer and be sure that the concepts are correct because you can easily remember the concepts if you do your own reviewer."	"Making your own reviewer because it feels good and it just boosts my confidence for the exam"
"First of all, I don't love Math because I lack more time in other subjects but I try to be better in Math. For me, my strategies to make myself comfortable is I make a research so I can easily solve it in shortcut. Then, I further ask for tutors on my classmates."	"Praying because God knows best especially if you partner it with more effort and hardwork."
"It's the one that I am going to ask my classmates especially our top 1."	"Reviewing my notes and if I don't get it, I'll call a friend to help me"
"I think the best strategies that helped us in exam are review your notes and memorizing important concepts but the best way is to listen to your teacher who was speaking in front."	"Review your notes and memorize important concepts, pray to God after and before your exam."
"Work hard because if you want something there's a way."	"Listen carefully to Sir and even if you are at home, study hard."
"Making flashcards that contain notes, because it is easier to bring anywhere."	"Have your own reviewer and pray because if you do, you don't need to borrow anymore and pray for guidance"
"I will review and check where I find it wrong to solve it."	"Study more and better and I will seek for tutors to let me understand what I can't understand in the exam"

The last theme, “seeking for more teacher support” (see Table 23 and 24) which involves both cognitive and affective is evident in the change of response of students in

their first and last reflection. The first subtheme “cognitive support” is a manifestation of academic help-seeking which is defined by Ames & Lau (1982) as ‘an achievement behavior involving the search for and employment of a strategy to obtain success’. It is found that when need arises, students who have higher self-efficacy will most likely demonstrate higher help-seeking behavior (Nelson & Ketelhut, 2008 as cited by Dullas, 2019). In line with this, Yang & Taylor (2013) as cited by Dayne, et al. (2016) found that self-efficacy influences students’ help-seeking. The second subtheme “affective support” is associated to social persuasion which is the third source of self-efficacy (Bandura 1997). Social persuasion involves various activities where students are persuaded to believe on themselves and receive encouragement to overcome their self-doubt.

Table 23.
Seeking for More Teacher Support: cognitive support

Change in Response	
Responses on the First Reflection	Responses on the Last Reflection
"Sing the math song in special product."	"Review us on our lesson before taking the exam."
"By giving tips and also by teaching a concept the best way (like the last time)"	"Review us before the exam."
"Maybe they can teach us more about the items in the exams."	"Give us the hardest problem to get highest score in the next exam."
"Give us many practice exercises."	"By giving us handouts and another reviewer and teach us carefully"
"By teaching us the lesson"	"I think giving more examples on that lesson"
"Before the exam, review all the concepts of exam and give us enough time to review."	"Review us before the exam and don't erase the reviewer on the board."
"Give formula, patterns and songs for the exam."	"More time and more examples"
"Share to us the technique for it to be easy."	"By reviewing us again and again until we master it"

Table 24.
Seeking for More Teacher Support: affective support

Change in Response	
Responses on the First Reflection	Responses on the Last Reflection
"Give some formula or shortcut to solve it or clues and most especially words of encouragement. "	"Just have moral support and always say that we can do it."
"By helping us to review for the next exam"	"By helping us to review before the upcoming exam."
"Encourage us to prepare or review our lesson and they will say, "you have to learn this because you lend time here, so you should listen and lend your ears" because they say that so it can't affect our future."	"Say this, "Do your best. It is just a number. What's important is you learn."
"By giving us words of encouragement"	"Review and give us more patience and show that he believes in us."
"Say that we can do it to perfect the test or to have 50% of the score."	"For me, by just saying, "You can do it!" That will help me to do better in answering my examination and I will take that as an inspiration."
"By telling/saying positive things and not comparing us with others"	"Telling positive thoughts"

The comparison of responses implies that students have gained more metacognitive awareness, become more confident and extra motivated, exhibit more academic help-seeking and expect to experience more social persuasion. These evidences provide a convincing and sufficient theoretical basis to claim that students have higher self-efficacy after the treatment period. This supports the prior quantitative findings that utilizing the ER tool is effective in increasing students 'self-efficacy for learning.

CHAPTER 4

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

SUMMARY OF THE STUDY

This study aims to determine the effectiveness of utilizing Examination Reflection (ER) tool in increasing students' self-efficacy for learning. The proposed intervention triggers learning strategies for building self-regulatory skills to students and leads to increasing their self-efficacy for learning. Developing this habit of reflecting on their exams, with the ER Tool as their guide, students may develop their self-regulatory learning strategies.

This study intends students to be exposed to a habit of reflecting before and after the test. Consistent practice of doing so prompts self-regulation which leads students to think of their enhanced strategies for preparing for the test. Continuous practice of utilizing the ER Tool, triggering self-regulation as mediating factor may increase students' perceived self-efficacy for learning. Various literatures provided significant effect of self-efficacy on students' academic achievement. Conversely, the idea of increasing self-efficacy through reflecting on assessment results has been barely explored.

In this study, the researcher used the Examination Reflection (ER) tool to enhance students' self-efficacy. The tool is intended to give solution to the concern on assessment which is students' failure on reflecting on their test result. With the aim of determining the effect of utilizing Examination Reflection (ER) tool on students' self-efficacy for learning,

this study seeks to answer the following research questions: 1.) What is the demographic profile of the students in terms of the following variables: gender; age; family size; first quarter average; study time; exam preparation? 2.) What is the pre-post self-efficacy of students on each group (control and experimental)? 3.) After controlling the effect of pre-self-efficacy, is there a significant difference between the self-efficacy of students in the experimental group (students who were exposed in ER Tool) and in the control group (students who were not exposed in ER Tool)?

From these research questions, instruments were generated and adapted such as: a modified demographic profile questionnaire to gather information; a self-report instrument scale, Self-Efficacy for Learning Form – Abridged (SELF-A) from Zimmerman & Kitsantas (2007), which was administered to measure the students' self-efficacy based on their confidence with skills related to learning; and Exam Reflection (ER) Tool developed by the researcher to guide students to reflect before and after the examination which also underwent the process of validity and reliability.

SUMMARY OF FINDINGS

The demographic data namely gender, age, family size, first quarter average, study time and frequency of examination preparation were reported and were compared between the control and experimental group. The two groups did not significantly differ on all the said variables except frequency of examination preparation. The control group prepares

more frequently before examination. This can be a potential covariate in this study but was disregarded due to its non-significant linear relation to the post self-efficacy. The non-significant differences on the demographic data between the two groups make them highly matched and reduce the possible threat of selection bias in this study. Thus, the difference on the post self-efficacy between the groups can be attributed to the treatment.

The mean for the pre and post self-efficacy for each group were reported and were compared. The result in the paired sample t-test indicates that there is a significant difference between the pre and post self-efficacy of students in the experimental group. On the other hand, no significant difference was found in the pre and post self-efficacy of students in the control group. The computed effect size for the significant difference of pre and post self-efficacy of students in the experimental group exceeded the convention for a large effect which implies that the difference is highly practical.

All the assumptions for Analysis of Covariance (ANCOVA) were not violated. The result of ANCOVA reveals a significant difference between post self-efficacy of the experimental and control group after controlling the possible effect of pre-self-efficacy. It also indicates a large effect size because the variance of the post self-efficacy is explained by the given treatment.

The intervention used in this study is aligned with the 2015 study of Mousavi & Moghtader which is utilizing self-regulation training with the use of goal-setting and cognitive skills to assist students for increasing their self-efficacy. It resolves the need for

directed and structured reflection tool which is the primary reason why students struggle with reflection.

The findings of this study offer a suggestive evidence for the literature claim that as the self-reflection ability improves, students gain more control over the learning process and acquire more conscious understanding of what is necessary for mastery. Exposure to the intervention in this study provides more engagement in authentic mastery experiences through reflecting on what they did or failed to do to obtain good result in the assessment process. Based on the self-efficacy theory of Bandura, these mastery experiences are influential sources of efficacy which leads to increasing self-efficacy. The results also confirm the positive effect of reflection on learning. Furthermore, the related literatures about reflection, self-regulation and self-efficacy presented in Chapter 1 are aligned to the findings of the present study.

LIMITATION OF THE STUDY

The main focus of this study is to investigate the effect of Examination Reflection (ER) Tool to students' self-efficacy. The statistical results provide accurate evidence on the effectiveness of utilizing the ER Tool in increasing the student's self-efficacy. However, the study was also vulnerable to certain limitations. It is a must to consider the following limitations when attempting to generalize the findings to a different educational setting.

The study was conducted at Captain Albert Aguilar National High School. One of the limitations is the demographic factors in which the respondents for this study were living in a depressed area where their socio-economic status would affect the upbringing of the children, which might be different from other places. The participants came from the two homogenous sections in grade seven namely Grade 7 – Flores (experimental group) and Grade 7 –Sabbath (control group). Before the treatment period, the assignment of students for each section was done through matching of grade six averages. The study is also limited to a relatively small sample size. The number of participants in the experimental group and control group is forty nine and fifty two, respectively. Although randomization was not employed in this study, the experimental and control group are found to be similar in certain demographic profile such as gender, age, family size, first quarter average and study time. The treatment was carried out over the second grading period and the participants in the experimental group responded to the examination reflection tool for only four times. The ER Tool was administered before and after the four announced summative tests in their Mathematics subject only.

Although pre and post self-efficacy were measured using a very reliable scale, the result is still prone to the response biases since it is a self-reported survey questionnaire. The analysis is limited to quantitative approach and the main statistical treatment to test the main hypothesis is Analysis of Covariance.

CONCLUSION

Based on the findings of the study, the following conclusions are drawn:

1. Educators should extend their efforts on improving student's self-efficacy for learning. One of the finding of this study indicates that students' self- efficacy for learning does not naturally increase over time. This study offers a new reflective practice that uses well-developed and valid tool in the form of the Exam Reflection (ER) Tool. Utilizing the tool must be consistent where it should be given a day or two before and after the test. Items from the tool effectively elicited students' awareness with regard to their exam preparation habits which opened the gate for acquiring self-regulatory skills.
2. After reflecting on the results of assessments in one quarter using ER tool, students significantly improved their self-efficacy for learning. When compared to controlled group which is highly matched in terms of demographic profile, their self- efficacy for learning is much higher after taking their baseline self-efficacy as a covariate. The responses of students on ER Tool are enough evidence of the positive gain in their self-efficacy for learning.
3. Over-all findings of the study indicate that utilizing Exam Reflection (ER) Tool is highly effective in increasing the student's self-efficacy for learning. It is a challenge for teachers to seek ways on how to incorporate reflection not only as a form of assessment but also as a habitual practice.

RECOMMENDATION

Based on the findings and conclusion presented, the following recommendations are suggested:

For students. Students are encouraged to engage themselves to truthful examination reflection practices because this will provide them the opportunity to effectively reflect on the possible reasons behind the outcomes of assessment and find ways to improve. This will eventually help them become more self-regulated to the assessment process and will lead them to develop a high self-efficacy.

For teachers. Teachers are suggested to persistently incorporate examination reflection tool to the assessment process until students have embraced this as part of their study habits. Moreover, they can use the information generated by the tool to be more aware on how students prepare, what outcome they expect, how satisfied they are in the outcome and most importantly, what support they can give to improve their students' performance on the next assessment.

For administrators. Administrators may consider including this examination reflection practice in crafting relevant seminars/ trainings that aim to improve assessment literacy of teachers.

For future researches. Future researchers that are interested to the benefits of examination reflection practices may conduct a new study with the following suggestions: (1) use a larger and more diverse sample to determine if same result will be obtained or there will be variation on the new findings; (2) apply this reflective practice to other subject

areas in a longer period of time in order to verify the maximum potential of utilizing examination reflection tool in increasing students' self-efficacy; (3) use a mixed method approach to investigate how students' responses on the examination tool change over time and how other demographic variables can possibly influence the effect of this reflective practice; (4) refine the examination reflection tool in a way that it will be more practical and can cope with the diversity of learners; and (5) conduct new study seeking for the effect of utilizing examination reflection tool in teaching and learning related variables.

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APPENDIX A:
CONSENT LETTERS

A1. LETTER TO THE PRINCIPAL

August 30, 2019

Efren R. Parilla, Ph.D.
Principal II
CAA National High School

Dear Sir:

The undersigned is a student of PNU – Graduate School undertaking a study entitled, “Utilizing Exam Reflection (ER) Tool to Increase Students’ Self-Efficacy for Learning.” It is one of her objectives to help students increase their self-efficacy for learning through consistent use of exam reflection as a tool.

In this regard, I would like to request your kind permission to collect data relevant to my study among appropriate respondents who are currently enrolled in your school.

Jobelle A. Gabayeron
Researcher

A2. LETTER TO THE CLASS ADVISER

Date:

Dear Advisers:

The undersigned is a student of PNU – Graduate School undertaking a study entitled, “Utilizing Exam Reflection (ER) Tool to Increase Students’ Self-Efficacy for Learning.” It is one of her objectives to help students increase their self-efficacy for learning through consistent use of exam reflection as a tool.

In this regard, I would like to request your kind permission to collect data relevant to my study among your students.

Jobelle A.Gabayeron
Researcher

A3. LETTER TO THE PARENTS

Date:

Dear Parents:

The undersigned is a student of PNU – Graduate School undertaking a study entitled, “Utilizing Exam Reflection (ER) Tool to Increase Students’ Self-Efficacy for Learning.” It is one of her objectives to help students increase their self-efficacy for learning through consistent use of exam reflection as a tool.

In this regard, your child was chosen as one of the respondents of the study. He/she will be asked to answer the questionnaire which will be administered on _____.

Thank you for your cooperation. God bless.

Jobelle A. Gabayeron
Researcher

A4. LETTER TO THE RESPONDENTS

Date:

Dear Students:

I am a graduate student of Philippine Normal University undertaking a study entitled, “Utilizing Exam Reflection (ER) Tool to Increase Students’ Self-Efficacy for Learning.” As a result of my sampling procedure, you are chosen as one of the respondents of this research.

Indeed, your responses to the questionnaire are important in the study. Rest assured that your response will be strictly taken as confidential information.

Thank you for your cooperation. God bless.

Jobelle A. Gabayeron
Researcher

A5. LETTER TO THE EVALUATOR

August 5, 2019

Dear Evaluators:

The undersigned is a student of PNU – Graduate School undertaking a study entitled, “Utilizing Exam Reflection (ER) Tool to Increase Students’ Self-Efficacy for Learning.” This research is anchored on the concept of self-efficacy, self-regulated learning, and reflective learning.

Recognizing your expertise on the different dimensions of education, I would like to invite you to share your knowledge as an administrator, a head teacher/master teacher, and a stakeholder or in any capacity as a member of secondary education practitioner.

I know that you are a veritable source of input vital to this study. I hope that in conducting this study I will contribute to a better state of secondary education in our country.

Jobelle A.Gabayeron
Researcher

APPENDIX B:

DEMOGRAPHIC PROFILE QUESTIONNAIRE

Name (optional): _____

Gender: ☐ Male ☐ Female

Put a check (/) in the box of the following information about you.

Age:

Family Size:

☐ 10 years old & below

☐ Extra-small (2 members)

☐ 11 years old

☐ Small (3 – 4 members)

☐ 12 years old

☐ Medium (5 – 6 members)

☐ 13 years old

☐ Large (7 – 8 members)

☐ 14 years old

☐ Extra-large (9 members & above)

☐ 15 years old & above

First Quarter

Time Spent Studying:

Average (Grade 7):

☐ 75 & below

☐ below 1hr & 30mins a day

☐ 76 – 80

☐ 1hr & 30mins – 2hrs a day

☐ 81 – 85

☐ 2hrs & 30mins – 3hrs a day

☐ 86 – 90

☐ 3hrs & 30mins – 4hrs a day

☐ 91 – 95

☐ above 4hrs a day

☐ 96 & above

Do you prepare for your examination?

☐ Never ☐ Sometimes ☐ Always

What do you often do after knowing the result of your examination?

APPENDIX C:

SELF-EFFICACY FOR LEARNING FORM (SELF) - Abridged

(Zimmerman and Kitsantas, 2007)

Definitely Cannot Do It		Probably Cannot		Maybe		Probably Can		Definitely Can Do It	
0%	10%	20%	30%	40%	50%	60%	70%	80%	90% 100%

Percentage **Choose a percentage from the above scale to indicate your answer**

- _____ 1. When you miss a class, can you find another student who can explain the lecture notes as clearly as your teacher did?
- _____ 2. When your teacher's lecture is very complex, can you write an effective summary of your original notes before the next class?
- _____ 3. When a lecture is especially boring, can you motivate yourself to keep good notes?
- _____ 4. When you had trouble understanding your teacher's lecture, can you clarify the confusion before the next class meeting by comparing notes with a classmate?
- _____ 5. When you have trouble studying your class notes because they are incomplete or confusing, can you revise and rewrite them clearly after every lecture?
- _____ 6. When you are taking a lesson covering a huge amount of material, can you condense your notes down to just the essential facts?
- _____ 7. When you are trying to understand a new topic, can you associate new concepts with old ones sufficiently well to remember them?
- _____ 8. When another student asks you to study together for a course in which you are experiencing difficulty, can you be an effective study partner?

- _____ 9. When problems with friends and peers conflict with schoolwork, can you keep up with your assignments?
- _____ 10. When you feel moody or restless during studying, can you focus your attention well enough to finish your assigned work?
- _____ 11. When you find yourself getting increasingly behind in a new course, can you increase your study time sufficiently to catch up?
- _____ 12. When you discover that your homework assignments for the quarter are much longer than expected, can you change your other priorities to have enough time for studying?
- _____ 13. When you have trouble recalling an abstract concept, can you think of a good example that will help you remember it on the test?
- _____ 14. When you have to take a test in a school subject you dislike, can you find a way to motivate yourself to earn a good grade?
- _____ 15. When you are feeling depressed about a forthcoming test, can you find a way to motivate yourself to do well?
- _____ 16. When your last test results were poor, can you figure out potential questions before the next test that will improve your score greatly?
- _____ 17. When you are struggling to remember technical details of a concept for a test, can you find a way to associate them together that will ensure recall?
- _____ 18. When you think you did poorly on a test you just finished, can you go back to your notes and locate all the information you had forgotten?
- _____ 19. When you find that you had to cram at the last minute for a test, can you begin your test preparation much earlier so you won't need to cram the next time?

APPENDIX D:

D1. PRE-Exam Reflection Tool

(To be administered a day before the exam)

Please accomplish this form with sincerity. Your responses will not affect your grade. This self-assessment activity will help you identify the strategies that work best for your learning. This will be returned to you after the exam to serve as your guide for adjusting your approach in studying for the next exam.

Coverage of the Exam: _____

How much time have you spent preparing for this exam? _____

Indicate the extent to which you have used each of these activities in preparation for the exam. Write the number of your response in the blanks.

1 Never Frequently	2 Rarely	3 Occasionally	4 Frequently	5 Very
--------------------------	-------------	-------------------	-----------------	-----------

- _____ 1. Reviewing my notes, textbooks/handouts, sample exercises
- _____ 2. Discussing/studying questions with classmates/friends
- _____ 3. Browsing the internet for further information
- _____ 4. Making my own reviewer
- _____ 5. Memorizing important concepts
- _____ 6. Seeking help from tutors

What do you think is/are the best study strategy/strategies that helped you prepare for the exam? Why? _____

Based on the preparation you've made, what score do you expect to get from the exam?

D2. POST-Exam Reflection Tool

(To be administered 1 to 3 days after the exam)

This form will give you the chance to reflect on your performance in the exam as well as the preparation you've made. Again, this will not affect your grade. Your responses will be very helpful for your preparation for the next exam. Please answer sincerely.

Coverage of the Exam: _____

What is your score in the exam? _____

Rate how satisfied you are with your performance in the exam: _____

1	2	3	4	5
Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied

Indicate your agreement with the following statements. Write the letter of your response in the blanks.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

- _____ 1. My effort in preparing for the exam is accurately shown in my score.
- _____ 2. I was able to maximize the time given for the exam.
- _____ 3. I was anxious before and/or during the exam.
- _____ 4. I feel pressured by my classmates while answering the exam.
- _____ 5. I had trouble remembering some concepts and steps.
- _____ 6. I wasn't able to study some points in the exam.
- _____ 7. I had careless mistakes.
- _____ 8. I can do better on the next exam.

1. Which parts of the exam did you find hard? Why?
2. What study strategy could you have done to perform better for those items?
3. Are you willing to change your preparation strategy for the next exam? If your answer is yes, what changes will you do? If your answer is no, why do you think you have to stick with your previous strategy?
4. What support can your teacher give you for your preparation for the next exam?

APPENDIX E:

SUMMARY OF RESPONSES

E1. DEMOGRAPHIC PROFILE RESPONSES (EXPERIMENTAL GROUP)

	GENDER	AGE	FAMILY SIZE	1ST QTR. GEN.AVE	STUDY TIME	EXAM PREPARATION
1	1	3	4	5	1	2
2	1	3	2	2	1	2
3	1	2	3	4	1	2
4	1	3	3	4	1	2
5	1	3	1	3	2	1
6	1	3	3	5	1	2
7	1	4	2	5	1	1
8	1	4	3	4	1	2
9	1	3	3	5	1	2
10	1	2	3	4	1	2
11	1	3	3	4	1	2
12	1	3	3	4	1	2
13	1	4	2	4	2	2
14	1	3	2	5	2	2
15	1	3	3	4	1	2
16	1	3	2	4	1	1
17	1	3	2	3	2	2
18	1	3	2	3	1	2
19	1	3	2	4	2	2
20	1	3	5	4	1	2
21	1	2	2	4	1	2
22	2	2	3	3	2	2
23	2	3	2	4	1	2
24	2	3	2	3	2	2
25	2	3	3	4	4	2
26	2	3	3	2	2	2
27	2	3	3	4	2	2
28	2	4	3	3	1	2

29	2	3	3	4	1	2
30	2	3	3	3	2	2
31	2	3	5	4	1	3
32	2	2	2	3	1	2
33	2	3	2	4	1	2
34	2	3	4	4	2	2
35	2	4	2	2	2	2
36	2	3	2	4	5	2
37	2	3	2	3	2	2
38	2	2	4	3	2	2
39	2	4	1	3	2	2
40	2	3	4	3	3	2
41	2	3	2	4	3	2
42	2	3	4	3	1	2
43	2	3	2	3	1	2
44	2	3	4	3	1	2
45	2	3	3	3	1	2
46	2	3	4	4	2	2
47	2	3	2	3	2	2
48	2	3	3	4	1	2
49	2	3	3	3	3	2

**E2. DEMOGRAPHIC PROFILE RESPONSES
(CONTROL GROUP)**

	GENDER	AGE	FAMILY SIZE	1ST QTR GEN.AVE	STUDY TIME	EXAM PREPARATION
1	1	3	5	4	1	2
2	1	3	2	3	1	3
3	1	3	5	5	1	3
4	1	4	3	4	2	3
5	1	2	2	5	1	2
6	1	3	3	4	1	2
7	1	5	3	3	5	2
8	1	3	5	3	1	2
9	1	2	3	4	1	2
10	1	4	3	3	1	2
11	1	2	5	4	1	2
12	2	3	3	4	1	2
13	2	4	3	4	1	2
14	2	3	2	3	1	3
15	2	3	2	3	2	2
16	2	3	2	4	1	2
17	2	3	3	4	1	2
18	2	3	3	5	2	2
19	2	3	3	4	2	2
20	2	4	2	3	2	2
21	2	6	5	3	1	2
22	2	3	2	4	1	1
23	2	3	2	4	1	2
24	2	2	1	3	1	2
25	2	3	3	4	1	2
26	2	3	2	4	1	3
27	2	3	2	5	2	2
28	2	4	4	3	1	2
29	2	3	3	4	1	2
30	2	2	2	4	1	3
31	2	3	3	4	1	2
32	2	3	3	3	2	2

33	2	3	3	4	1	2
34	2	3	2	4	2	2
35	2	3	3	5	1	2
36	2	3	3	4	1	3
37	2	3	3	4	1	2
38	2	3	2	4	1	2
39	2	3	2	3	2	2
40	2	3	3	4	4	2
41	2	3	3	3	3	2
42	2	2	4	4	3	2
43	2	2	4	5	2	3
44	2	3	3	4	2	2
45	2	4	4	4	1	2
46	2	3	2	3	3	2
47	2	3	2	3	2	2
48	2	3	2	5	1	2
49	2	3	4	4	2	2
50	2	3	2	3	1	3
51	2	3	2	3	3	2
52	2	6	5	4	1	2

E3. DEMOGRAPHIC PROFILE ESSAY RESPONSES (EXPERIMENTAL GROUP)

What do you often do after knowing the result of your examination?	
1	I often do nothing and I feel contented.
2	If I pass, I feel happy. If not, it's ok I'll just try again next time.
3	I'm slightly disappointed because my score is low while others are high. I will do my best next time.
4	Whatever my score is, I'm still thankful because I did my best. That's my attitude whether I got high or low. I'd rather be happy than anxious.
5	I always check where I got wrong and study it. If I passes the test, I'm happy. If not, I'll just do better in recitation to make up for my grade in that subject.
6	If it is high, I will show it to my parents then I will play ML because I'm happy. If it is low, I will just eat and sleep, no cellphone and TV, and I will not show it to my parents unless they asked for it.
7	I will play. I need to relax after the exam whether I just barely passed or failed. That sheet of paper won't decide my future.
8	I will just accept it even if it is high or low because I know that I did my best and I did not prepare for the test.
9	I'll be happy whatever my score is but I'm also afraid because if it is low, my parents will hit me using a stick.
10	I'm always nervous when I get the result of my exam because if it is low, I will be scolded by my parents and they will force me review sometimes, but it is also good for my grades.
11	I will just study harder next time if my score is low. If it is high, I will put my test paper in my bag and do nothing.
12	Sometimes I review the test and prepare for the next examination.
13	If my score is low, I will tell to myself that I need to improve and pass the next exam. If my score is average, I will study because learning can get a higher score.
14	If my score is low, I will tell to myself that I will try harder next time.
15	I celebrate when I got high and when it is low, it's just normal for me.
16	I will check where I got wrong and study it but sometimes I don't do it and I just put the answer sheet I my bag and play ML.
17	I won't tell it to my mom or dad because they don't care about me.
18	After knowing the result of my exam, I will be happy because all the lessons I studied are in the test and I'll be proud of myself because I study hard.
19	I study hard even if the exam is over. I don't even have reaction on my exam but I always say, "Better luck next time."
20	I am sad but slightly happy.

21	I will study next time and do better at the exam.
22	Sometimes I'm disappointed about my score and what I do after knowing it, I study more and my mom will not let me hold or touch some gadgets.
23	Sometimes I review my notes and study them.
24	If the result of my test is low, I study harder to pass the next test. If the result is high, I just do nothing.
25	Sometimes I got high or perfect, sometimes I got low. When my score is high I will tell to my mom. When my score is low, I will not tell it and I will do my best next time.
26	Sometimes I feel sad, and sometimes I feel low because sometimes I got high and sometimes I got low. So I'll do my best next time to get high score in exam.
27	Sometimes I felt disappointed to myself if my score is thirty and below. But if my score is above thirty, I feel happy but sometimes I don't care.
28	If I got a low score, I study more and spent more time for studying. If I got high score, I still study more so that for the next exam, I will get high score again.
29	When I got a low score, I read again the questions I failed so that I will know which topic I will focus more.
30	My parents will be happy in my score. I feel uncomfortable if my score is low and even if it is high, it's not enough so I want to improve more.
31	After knowing the result I feel like what I did is not enough but next time I will try harder for me to achieve my goals.
32	I feel sad if I got a low score and I'm happy if I passed or got a high score and I do my best next time.
33	When my score is higher than 1/2 of the items, I'm happy and I'm asking who got the highest score but when it is high, I'm sad but I accept it and I will do my best next time.
34	Sometimes when the result is low I often tell myself that it's okay, that I will do better next time so I'm studying hard to achieve those high scores in my examinations.
35	If my score is low I feel sad and I clean the house and I do best next time. if my score is high I'm happy and I also use my gadgets and I do my best to get high score again.
36	If my score is low, I will review my wrong answers and correct it, but if my score is high, I will say it to my mother.
37	I feel okay and contented.
38	I'm a bit disappointed in my score sometimes if it is low because I know I did my best to answer that I'm very happy if it is high because for myself it is unexpected.
39	I don't tell it to my parents because I'm scared to disappoint them. I will make a way to understand why I got a low score.
40	I always tell it to my parents whether it is high or low. If my score is not that high, ofcourse I'm disappointed and do better next time. if it is high, I always spoil myself.

41	I say it immediately to my parents because being honest makes you more confident to face them and even if I got low, I will study hard to make me understand that lesson and next time I will study hard.
42	After I saw the result of my exam I have mixed feeling. If I have a low result I'll be sad and make sure I'll do my best next time.
43	When I know the result of my examination, I feel happy and contented because I know that I do my best to take the test and I will try harder next time.
44	I feel sad but I will do my best next time to my parents will be happy.
45	I'm asking my other classmates' score and I get schocked when I find out that mine is lower than their's and I'm saying to myslef that I'm going to do my best next time but I'm still happy with my score.
46	I'm ahppy about the result whether it is low or high because I do my best to answer the exam correctly.
47	If I have a low score I am motivated that next time I should try my best so my parents will not be disappointed.
48	I'm ok with any score even if it's low or high because we are given a test not to test how smart we are. Test is given to know how much you understand the lesson from the start to the very end.
49	I just do normal life.

E4. DEMOGRAPHIC PROFILE ESSAY RESPONSES (CONTROL GROUP)

What do you often do after knowing the result of your examination?	
1	If my score is lower, my reaction will be sad, afraid and shocked. If my score is higher I am happy and surprised.
2	I am comparing my old score to my new score and if my new score is low, I review my test paper to see where I got wrong.
3	I'll review my quiz paper to see my wrong answers so next time I know the answer and sometimes I feel happy because I got a high score.
4	I feel nervous for the result of my examination. I feel scared but still thank God because he is the reason to reach a wish.
5	After the examination in the hardest subject, I review my wrong answers for the next exam.
6	I'm going to check if the correction is correct and if it is correct, I'm gonna accept it but if it was wrong I'm gonna talk to the corrector and explain.
7	If my score is the highest I'm very happy, but if my score is the lowest in Math, I am sad and I always thought to myself to improve and study hard.
8	I will show it to my mom and dad when I go home. If I'm low, I will review. If high, I will still review.
9	I feel nervous because sometimes my score is low.
10	When I got lower score I feel sad because my mother will get angry.
11	If my score in Math is failed, I'm worried because I'm failed in that subject and I try my best next time to pass that subject.
12	If my score is low, my reaction will be shocked and if it is high, my reaction is very happy.
13	I am happy when my score is high.
14	
15	After I know the result of my exam, I check if it is higher or lower than my test before. If it is higher I am thankful and if it is lower I am disappointed.
16	If my score in math is low I'm getting sad and being mad to myself, but if my score is high I'm getting happy and proud of myself but sometimes I'm getting nervous to my grades.
17	After knowing the result of myself, sometimes I say "very good" to myself and if my test is failed I keep it up. My family said that it is ok if you failed your exam. If I'm passed, they also say "very good" to me.
18	After knowing the result of my test, sometimes I say to myself that I should keep it up to make my family proud. As always, I will do my best to make it high.

19	Sometimes I'm so nervous my test is low but I'm trying my best to perfect or to pass my score and I want my family to be proud of me.
20	When I receive the result of my exam I feel so nervous when I got lower score in the exam but I'm telling myself that I will try my best next time.
21	When I got lower scores in Math and Science I got shy because sometimes my eldest sister or my father checks my exam if I got a lower score.
22	After knowing the result of my exam, sometimes I feel encouraged if my scores are high and discouraged if my scores are low.
23	If my grade or score is low I talk to myself and say that I will change this to high grades.
24	Sometimes when my score is low, I feel disappointed and it encourages me to study hard on the next quiz.
25	If I fail my exam sometimes I discourage myself and feel nervous for my family's reaction or maybe sometimes I study my mistakes until I got it correct. And if I passed the exam, I got disappointed for my mistakes.
26	Sometimes when my score is high I become happy.
27	When I received the result of my exam, I'm shocked because I'm trying my best but sometimes my score is not enough so one thing that I want to say to myself is "I can do this next time." I think positive and I trust myself.
28	I am nervous and happy also because I do my job wisely and I can do my best.
29	I show it to my parents sometimes or keep it in my bag and sleep, wake up, and study for 1 hour and re-study after 3 hours of resting.
30	It may depend on the result of the exam. I may study hard if my score is too low.
31	When I receive my exam, if it is bad, I will be sad but I told myself that next time I will do my best. If it is good, I will be happy and glad.
32	When I know my result or my exam and it is low, I do study the answer and the next exam, what I do is reviewing the lesson that we discussed.
33	If I received the result and I got high, I am happy and if not, I am sad and talk to myself and I said that I can do my best next time and when we have an exam again, I prepared early.
34	I will study harder to get a higher score next time.
35	I feel happy and glad and I keep it.
36	When I got lower score I feel sad because if I see that my family is sad, I also get sad because I don't want them to be sad so I do my best to get a better score.
37	When I receive the result of my exam, I'm shocked because I'm trying my best but still my score is not enough or I am still failed.
38	After the exam and after I know my scores, I feel nervous or happy and I study again to get more score or higher score.
39	Glad that I overcome the test. I know I did my best so whatever the result is, I have to

	accept it.
40	I review it again, then for the numbers that I have wrong answers, I make it right then in the next quiz, I study before the quiz.
41	Next time I will do my best to have a beautiful score and it's ok. The most important is I did my best to perfect the exam.
42	If I received the score of my quiz in math, I get shocked because my score is low but I do my best and after the class, I studied the lessons everyday to be ready in school.
43	I feel nervous and happy at the same time because of my grade, but after the examination, I treat myself as a reward.
44	I feel sad when I got lower scores because I do my best but I can't get the highest score.
45	I always tell to myself that "I will try my best next time" and try to listen to my teacher and I will try to learn new things again.
46	Next time, I will study for my exam to reach top 10 and above and listen to my teacher carefully so I can understand what the lesson is.
47	If it is high I'm gonna be happy, but if it's low, I am offended.
48	If I got below the passing score, I was so sad because I'm thinking that the score can affect my grade that can also affect my top if my score is too low, and if I got the passing score, I want to continue that score for next time.
49	I feel relieved because the exam is over but when I see the result sometimes I am proud of myself but when I got low score, I said to myself "It's okay I'll try my best next time."
50	Next time I will do my best. I will focus on this subject so my score is very well.
51	If I got below the passing score, I am sad.
52	I feel happy to know my score in the exam and I accept it and I'm still thankful because my score is not that low.

E5. COMPARISON OF PRE AND POST SELF-EFFICACY OF EACH GROUP

Control Group		Experimental Group	
Pre-Self-efficacy	Post Self-efficacy	Pre-Self-efficacy	Post Self-efficacy
58	60	66	69
64	65	55	55
74	72	59	64
66	67	74	74
63	63	65	70
51	51	62	65
54	56	44	48
58	56	68	69
56	59	55	60
71	70	78	80
73	74	71	76
62	63	71	71
77	75	68	69
76	77	60	61
63	65	51	55
71	74	74	74
66	68	44	44
70	71	66	70
63	64	47	51
63	62	58	62
69	69	52	53
58	58	65	67
63	62	81	84
53	52	70	71
65	64	54	56
70	70	76	76
55	56	59	60
71	73	52	57
71	70	64	69
70	69	66	70
47	48	73	75
80	82	48	51
52	54	49	51

77	79
69	69
73	74
58	61
63	65
69	69
63	63
54	54
59	57
61	60
78	75
71	74
51	52
43	42
66	64
76	76
50	48
48	50
69	72

73	77
58	63
79	82
58	60
66	67
49	54
79	75
75	76
64	64
83	85
45	47
45	49
66	66
56	57
43	43
67	72

E6. PRE-EXAM REFLECTION TOOL SCALE PART
(FIRST TEST - Quiz 1 out of 4)

Coverage of the Exam: *Special Product*

	1	2	3	4	5	6	Time Spent Preparing for the Test	Expected Score
1	1	2	1	2	5	1	10 minutes	85%
2	4	3	3	2	3	1	1 hour	25/30
3	3	3	2	4	4	1	10 minutes	20/30
4	4	5	2	3	5	1	5 minutes	34-40
5	4	5	2	3	4	3	10 minutes	70%
6	2	3	2	2	3	4	1 hour	80%
7	2	1	3	4	3	1	5 minutes	90%
8	4	3	3	2	4	2	10 minutes	80%
9	5	3	2	3	5	2	5 hours	48/50
10	5	5	3	3	5	1	1-2 hours	45/50
11	3	2	5	2	2	1	1-2 hours	35
12	3	3	3	2	4	2	1 hour	lower than half
13	3	4	3	5	5	2	30 minutes	80%
14	5	4	3	3	5	2	30 minutes	25
15	4	2	3	2	4	2	1 hour	30 and up
16	3	2	4	2	3	2	10 minutes	25
17	3	4	4	2	3	2	1 hour	30%
18	2	4	3	4	4	3	10 minutes	30%
19	4	2	4	3	4	1	20 minutes	no expectation
20	4	3	2	1	4	1	20 minutes	15
21	3	2	3	3	4	1	1-2 hours	more than half
22	2	3	3	2	3	4	less than 25 minutes	25%
23	3	2	5	3	4	3	2 hours	not so long but not so high
24	3	3	1	2	2	2	5 minutes	22
25	4	3	5	3	4	2	1 hour	15/30
26	3	3	3	3	4	2	1-2 hours	25
27	3	4	2	2	4	2	20 minutes	30 and up
28	2	2	4	3	4	3	1 hour	75%
29	5	2	4	5	5	1	30 minutes to 1 hour	high score

30	3	3	4	2	4	4	1-2 hours	40
31	4	5	2	4	5	2	1 hour	60%
32	4	3	4	2	5	3	2 hours	40/50
33	3	2	3	2	3	2	30 minutes	no expectation
34	3	4	4	2	3	2	20 minutes	70%
35	4	4	2	2	3	1	10 minutes	50%
36	4	4	3	2	3	2	1 hour	20
37	4	3	1	5	4	2	20 minutes	50%
38	4	4	4	3	3	2	15 minutes	20/30
39	3	4	4	1	5	1	30 minutes	15%
40	4	3	3	3	4	3	1.5 hours	50%
41	3	4	3	2	4	4	45 minutes	65%
42	3	3	4	2	4	4	30 minutes	75%
43	4	3	3	4	4	2	30 minutes	70%
44	3	3	2	2	3	1	25 minutes	15
45	3	3	4	3	3	2	15 minutes	40%
46	4	2	3	2	4	1	1 hour	90%
47	4	3	4	4	4	2	1-2 hours	80%
48	3	1	3	1	2	1	3 minutes	15
49	3	4	2	4	4	1	1.5 hours	60%

E7. PRE-EXAM REFLECTION TOOL SCALE PART
(FIRST TEST - Quiz 4 out of 4)

Coverage of the Exam: *Solving Linear Inequality Involving Absolute Value*

	1	2	3	4	5	6	Time Spent Preparing for the Test	Expected Score
1	4	4	1	3	4	4	30 minutes	15
2	4	2	4	3	4	1	30 minutes	14
3	4	2	2	3	4	1	1 hour	12
4	3	5	2	3	5	4	10 minutes	13
5	5	5	2	4	4	2	4 hours or more	12
6	2	3	2	3	4	4	1 hour	10
7	3	3	3	4	4	1	10 minutes	20
8	3	3	4	2	3	2	10 minutes	15
9	3	4	2	2	4	2	2 hours	18
10	5	5	3	4	5	1	20 minutes	15
11	3	3	5	2	3	1	2 hours	12
12	4	3	2	1	4	1	1 hour	12 and up
13	3	3	2	2	5	1	2 hours	15
14	5	4	4	2	5	3	30 minutes	15
15	4	2	2	3	4	2	30 minutes	15
16	4	3	3	3	5	2	20 minutes	15
17	4	4	3	3	5	3	1 hour	14
18	3	3	3	2	2	3	30 minutes	10
19	4	2	3	2	4	1	30 minutes	12
20	4	2	4	3	4	1	30 minutes	14
21	1	4	5	3	5	1	2.5 hours	16
22	4	3	2	2	4	4	1 hour	10
23	4	3	1	1	4	1	1 hour	12
24	4	3	3	2	3	2	1.5 hours	13
25	3	4	5	2	4	3	30 minutes	10
26	3	2	3	4	4	3	1 hour	12
27	3	3	4	2	4	3	30 minutes	15
28	4	3	3	2	4	2	1 hour	14
29	5	3	3	4	4	2	1 hour	15

30	4	4	3	3	3	4	2 hours	16
31	5	3	2	2	5	3	1 hour	15
32	5	4	3	2	5	3	1 hour	15
33	3	2	2	2	4	2	1 hour	11
34	5	3	3	2	5	4	3 hours	At least 15 and up
35	4	4	3	3	4	1	30 minutes	12
36	4	4	2	2	4	4	1 hour	13
37	5	4	1	3	5	3	40 minutes	12
38	4	3	2	3	4	1	1 hour	20
39	5	5	1	2	1	1	30 minutes	10
40	4	3	2	5	5	4	1.5 hours	12
41	2	3	2	2	3	2	45 minutes	8 and above
42	4	3	5	4	3	3	30 minutes	12
43	4	3	3	4	4	3	1 hour	12
44	4	3	2	2	3	3	30 minutes	15 or higher
45	4	4	3	3	4	1	35 minutes	12
46	5	2	2	1	3	2	1 hour	15
47	4	3	3	4	4	3	30 minutes - 1 hour	15
48	5	2	4	1	4	2	10 minutes	12
49	4	3	2	4	5	1	30-45 minutes	15 or higher

E8. PRE-EXAM REFLECTION TOOL ESSAY PART
(COMPARISON OF FIRST AND LAST RESPONSES - Quiz 1 and 4 out of 4)

QUESTION: *What do you think is/are the best strategy/strategies that helped you prepare for the exam?*

	RESPONSES ON THE FIRST TEST	RESPONSES ON THE LAST TEST
1	Memorizing the shortcuts	Memorizing important concepts to answer the test easily
2	Do not use cellphones or any gadgets because it may affect me.	Memorize the formula because it is the best way to pass the exam.
3	I think it is to memorize all the formula so you can solve the equation and always review so you can memorize it.	Memorize the steps and other concepts because when you memorize the steps you will know how to do or how to solve that equation.
4	Listen thoroughly is the best strategy because the information is directly to the brain.	For me, calculating some sample exercises will help you. It'll help you to know the formula and how to get it.
5	I always have notes and a friend who is good in math to help me.	Review my notes and study the questions with friends/classmates because it is good when you are learning with fun.
6	Remember the formula because any if there are equations with that need the same formula, you can answer it.	Reviewing notes because it can help us to memorize
7	It is to make your own reviewer and be sure that the concepts are correct because you can easily remember the concepts if you do your own reviewer.	Making your own reviewer because it feels good and it just boosts my confidence for the exam
8	Reviewing my notes that may be included in the exam.	Reviewing my notes, textbooks/handouts, sample exercises
9	Reviewing my notes, textbooks, handouts, sample exercises, because it can help me to pass the exam.	By memorizing those important concepts and formula on how to solve it

10	I will memorize important concepts and I will review my notes, textbooks, handouts, sample exercises, because it is the easiest and the best way.	Reviewing my notes, textbooks/handouts, sample exercises, and memorizing important concepts because it's easy.
11	Relax and review. You just have to review for 1 to 2 hours and then after that, relax your mind.	Prerapre and relax before the exam beacause it is helping me to answer correctly.
12	For me, it is by reviewing notes and memorizing important details.	Reviewing your notes and memorizing important concepts because it will help you a lot for the upcoming exam.
13	Memorizing important concepts because I'm lazy on reviewing my notes and I'm good in memorizing.	Memorizing important concepts because I know that I'm good in memorizing.
14	I review my notes again before the exam because it helps me to not forget the important concepts.	Memorize the important concepts and memorize the solution of a problem.
15	I sleep at 8:00 PM and I eat breakfast.	I memorized the formula in math.
16	Reviewing my notes and praying to God	Review my work to have knowledge for this exam.
17	First of all, I don't love Math because I lack more time in other subjects but I try to be better in Math. For me, my strategies to make myself comfortable is I make a research so I can easily solve it in shortcut. Then, I further ask for tutors on my classmates.	Praying because God knows best especially if you partner it with more effort and hardwork.
18	The best strategy that help me in preparing the exam is to memorize it because I am comfortable to memorize.	Memorizing because it may help me more in the exam so I am ready
19	By memorizing, taking notes and reading. It was very important because it helps your comprehension and mind to extend your knowledge about what is you are studying.	Just review all your notes and memorize important concepts because this helps you remember important concepst.
20	I think the best strategies that helped me prepare for the exam are reviewing notes and memorizing important concepts because it can	Study harder for better results.

	help you to remember the lessons.	
21	Reviewing notes and memorizing important concepts because it is easier to study than to do other strategies.	Review, study notes (do not review much because you will over review) review with your classmates.
22	It's the one that I am going to ask my classmates especially our top 1.	Reviewing my notes and if I don't get it, I'll call a friend to help me
23	Memorizing important concepts, making my own reviewer and browsing the internet. It helps me remember the topics when I was reviewing.	Reviewing my notes, textbooks, etc. and memorizing important concepts
24	I think the best strategies that helped us in exam are review your notes and memorizing important concepts but the best way is to listen to your teacher who was speaking in front.	Review your notes and memorize important concepts, pray to God after and before your exam.
25	The best strategy is making your own reviewer and memorizing important concepts.	Reviewing the lesson for stocked knowledge for the exam
26	Reviewing my notes in Math and memorize important concepts	Study the important notes and review before the exam.
27	Memorizing important concepts and reviewing my notes because it really helps me to answer those questions in exam.	Reviewing notes because for me, it really helps me to pass the exam and sometimes I'm seeking help from tutors.
28	Remember the important concepts of topic to easily answer it	Memorizing important concepts to increase my score
29	Review before the exam, don't cram, memorize and understand the important concepts.	Reviewing my notes, memorizing important concepts (how to solve it step by step) so that I can easily answer those questions
30	The best way is to review and don't forget the important information, and make your own identification.	Review and don't forget the lesson and memorizing each step to solve the problem.
31	Discussing/studying questions with classmates/friends is the best strategy because you can help each other you can also learn from each other.	Memorizing important concepts because by this you will know the procedure to solve

32	Review and solve the given problem and memorize the formula. This is my strategy because this is very helpful to me.	By reviewing my notes, memorize the formula and sample exercises
33	By the songs that my teacher teaches to us, it helps me study.	Memorizing it, because it makes me feel comfortable but I always get low scores.
34	I think it is by memorizing the important details.	For me the best study strategies are reviewing my notes and seeking help from tutors
35	For me it is by reviewing important concepts although I'm not good in Math.	By reviewing with classmate because it helps me and memorizing
36	Reviewing my notes because it helps my brain to memorize some concepts.	Study your notes and answer again the example that is given by the teacher.
37	Reviewing my notes before the exam and pray because it may help you to answer the questions.	Reviewing notes before exam and pray because it may help you answer the questions
38	Review your notes or what you have that can help you, research if you don't really understand a bit the lessons and give time to the subject that you're having a hard time.	Taking notes of the examples that are given and give time to the problem you are having a hard time with
39	Reading my notes everyday because it will help me remember all the topics that were discussed.	For me, the best way that helped me is read the notes.
40	For me, the best strategy/ies that help you prepare are: while studying, listen to relaxing music because it helps prevent stress, eat, hydrate and make sure that no one disturbs you, before taking the exam, eat some sweets like chocolates, and of course, study and ask help from someone, because it will be easier to answer if you memorize some concepts.	The best strategies for me are: studying your notes for recalling, listening to the teacher while discussing - this may help you to have stocked knowledge, and highlight those important concepts for quick memorizing.
41	Reading all the notes and if I don't understand the lesson, I will search the lesson on youtube to help me understand the lesson.	Review all the notes and if I can't understand I can seek for tutors.

42	Memorizing important concepts	I review my notes and I search in the internet to add more information.
43	Memorizing - it helps me to not forget the lesson	Reviewing my notes and memorizing how to solve it
44	I think the strategies that helped me for my exam is review my notes or handouts because you can remember the lesson that your teacher discussed.	Review your notes and if you have no notes, review with your classmates.
45	By the songs that my teacher composed, it helps me to remember our topic easily.	By making my own reviewer and to review with my classmates because it helps me
46	Reviewing my notes and sometimes I make my own reviewer.	Reviewing my notes because it helps me to memorize the formula
47	Work hard because if you want something there's a way.	Listen carefully to Sir and even if you are at home, study hard.
48	Memorizing the important concepts and browsing more information in the internet.	Studying and memorizing the important concepts and also do research for further information
49	Making flashcards that contain notes, because it is easier to bring anywhere.	Have your own reviewer and pray because if you do, you don't need to borrow anymore and pray for guidance

E9. POST-EXAM REFLECTION TOOL SCALE PART

(FIRST TEST - Quiz 1 out of 4)
Coverage of the Exam: *Special Product*

	Scale								Actual Score out of 30	Satisfaction Rating
	1	2	3	4	5	6	7	8		
1	2	4	1	1	1	1	2	5	14	3
2	2	3	3	2	4	3	4	3	12	2
3	3	2	3	1	4	3	3	4	13	3
4	2	2	4	5	4	4	3	5	12	2
5	2	4	5	5	5	4	5	3	13	3
6	4	3	5	2	5	3	5	4	17	4
7	3	4	3	2	2	3	4	3	30	4
8	4	2	3	3	4	4	4	3	14	3
9	3	4	1	3	4	2	4	5	20	4
10	4	1	1	1	4	4	4	5	20	4
11	2	4	2	2	2	1	4	5	9	2
12	3	3	4	2	4	4	4	5	17	3
13	4	5	2	3	2	3	1	5	20	5
14	5	3	1	2	2	1	3	5	28	5
15	3	4	3	4	2	2	1	4	17	3
16	4	4	3	3	5	4	4	4	24	4
17	3	4	3	3	4	3	4	4	9	3
18	2	4	4	5	4	4	5	3	9	3
19	2	3	1	2	4	4	3	4	16	3
20	2	1	4	2	4	2	4	5	13	2
21	3	2	2	1	4	4	5	5	20	4
22	4	2	4	3	4	4	4	4	6	3
23	3	4	5	2	1	3	4	3	10	3
24	2	3	5	5	5	5	4	5	0	1
25	4	4	4	3	3	3	4	5	12	3
26	2	4	4	4	4	4	4	5	3	2
27	3	3	1	1	3	2	3	5	14	3
28	3	4	4	2	3	3	3	3	9	2
29	3	2	3	1	4	4	3	5	17	2
30	2	4	2	4	3	3	5	5	6	2

31	4	2	1	1	5	5	5	4	13	2
32	3	4	3	4	3	5	4	4	16	3
33	3	4	4	1	3	3	4	4	17	3
34	2	4	5	4	2	2	3	5	16	2
35	2	4	5	5	5	5	3	3	3	3
36	3	4	3	2	4	2	3	4	11	2
37	2	2	3	2	4	3	3	4	5	1
38	4	4	3	3	3	3	3	4	19	4
39	4	3	5	4	5	5	5	3	4	4
40	2	4	4	3	4	2	5	5	12	2
41	4	3	4	4	4	4	4	3	12	2
42	2	2	4	2	5	4	5	4	0	1
43	4	4	3	3	2	4	4	4	11	4
44	3	2	3	3	4	2	3	4	12	3
45	3	4	3	2	2	2	3	3	16	3
46	4	4	3	3	2	3	2	5	23	4
47	3	2	3	4	4	4	4	5	5	2
48	3	2	4	2	4	2	4	3	5	3
49	2	4	5	1	4	2	4	4	7	2

E10. POST-EXAM REFLECTION TOOL SCALE PART**(FIRST TEST - Quiz 1 out of 4)**

	Scale								Actual Score out of 20	Satisfaction Rating
	1	2	3	4	5	6	7	8		
1	2	4	1	4	4	4	4	5	9	2
2	2	3	4	2	5	3	4	4	7	2
3	5	4	3	4	1	2	1	5	17	5
4	5	3	4	2	1	4	3	5	13	4
5	5	4	5	5	5	4	5	4	14	4
6	1	5	5	2	5	2	4	1	6	1
7	3	4	3	3	2	2	1	4	20	5
8	4	2	5	2	4	4	3	3	4	3
9	4	4	4	1	3	1	1	5	16	4
10	4	4	1	1	1	1	4	5	12	4
11	5	2	1	1	3	2	5	5	10	4
12	4	2	4	3	4	4	4	4	4	2
13	4	4	1	1	1	1	4	5	12	4
14	5	4	4	2	2	2	1	5	20	5
15	3	2	3	2	2	4	4	5	10	2
16	4	5	3	2	5	3	3	5	18	4
17	2	4	3	3	3	3	4	5	6	3
18	3	3	5	4	4	4	2	5	3	2
19	2	3	3	1	4	3	4	2	5	3
20	5	3	4	2	1	4	3	5	13	4
21	4	3	4	4	4	4	4	5	9	3
22	4	3	4	4	4	4	4	5	9	3
23	2	2	4	3	4	2	3	4	4	2
24	5	5	2	2	3	3	4	5	11	4
25	2	3	2	3	4	4	4	4	7	2
26	2	4	2	3	4	4	4	4	2	2
27	5	5	1	1	2	1	4	5	15	5
28	1	5	4	2	3	3	4	4	4	2
29	3	3	4	1	3	3	4	5	9	2
30	2	5	3	4	3	3	5	5	6	2

31	4	4	1	1	4	3	5	4	12	4
32	4	4	2	2	3	2	4	5	13	4
33	5	5	4	1	3	3	5	5	14	5
34	4	4	5	5	4	2	5	5	11	3
35	3	3	5	5	3	3	4	5	2	2
36	4	4	3	2	3	2	4	4	14	3
37	2	4	1	1	4	2	3	4	4	2
38	3	3	4	2	4	3	4	5	8	3
39	5	5	5	5	5	5	3	3	9	3
40	5	4	2	1	1	2	4	5	16	5
41	5	3	4	3	4	3	5	3	7	2
42	2	4	3	2	4	2	4	5	0	2
43	4	4	3	3	4	3	4	4	9	3
44	2	5	3	4	3	3	4	5	6	3
45	4	4	3	3	3	2	4	4	14	4
46	4	3	2	1	5	2	4	5	12	3
47	3	3	3	4	4	3	4	5	9	3
48	4	3	5	1	2	2	5	4	8	4
49	4	5	5	1	1	1	5	5	12	4

**E11. POST-EXAM REFLECTION TOOL ESSAY PART
(COMPARISON OF FIRST AND LAST RESPONSES)**

QUESTION#1: Which parts of the exam did you find hard? Why?

	FIRST TEST (Quiz1) ESSAY RESPONSES	LAST TEST (Quiz4) ESSAY RESPONSES
1	None, because I know how to solve all of them.	The interval notation, I can't remember what to do.
2	In part 1-8. I had trouble remembering some concepts and steps.	1-3 because I had trouble remembering the steps.
3	In one item because I forgot the steps on how to solve it.	The last part because I am nervous and frightened
4	The special product, I can't remember some concepts.	The part where I don't know which one is true and the correct solution
5	Basically, the lesson that comes first because I always forget things.	I think the transposing the absolute value because that's the most crucial part in the test.
6	Bonus part because those questions are questions I've never encountered before.	I think the transposing the absolute value because that's the most crucial part in the test.
7	The first part because my mind feels fresh like I'm just answering the risky questions.	I think the symbols because if you are careless you can be wrong.
8	Numbers 24-30 because I forgot how to solve that part.	Solving the graphical solution and interval notation
9	I think it's the bonus part.	Numbers 3, 4 and the graphing solution and interval solution
10	In the middle part (11-13) because I forgot how to solve them so I have a problem with those numbers.	Numbers 2-3 because it's hard
11	Numbers 24-26 because I can't remember what to do to those numbers.	In the first two questions, I didn't know what to do with those numbers
12	The special product of trinomials/3 terms because I forgot how to do it.	Graphical solution - I'm confused between greater than and less than. I don't know which one is greater or less than.
13	The parts that had many solving because it's hard to solve.	I find the last part hard because I forgot how to do it.
14	Cubing binomial because I have no idea how to solve it.	In one number because Sir taught us that part before the exam so I had trouble in remembering
15	The hardest part is square of trinomial because I'm confused on how to solve it.	The hardest part for me is number 5 because I was confused in distributing.
16	The last number because I didn't know how	The last part because I forgot that the last

	to solve it.	given has negative.
17	I'm having difficulty with the signs because I thought that wasn't part of the number.	Graphing the graphical solution
18	Numbers 23-30, it is hard for me.	In numbers 1, 2 and 5 because I forgot the steps in solving
19	The trinomials because I wasn't able to study those things because I don't have notes.	Number 5 because it is hard for me and I can't remember those things
20	Number 14-30 because I forgot how to do it.	The graphing part because I'm confused.
21	The cube of binomial and the square of trinomial because they are harder than just adding and subtracting.	When putting the unions and graphing and interval notation
22	The parts that I can't solve.	The first equation because I don't remember how to solve it
23	The solving part because it's hard.	Interval notation and graphical solutions because I'm always confused what will I write
24	All. I review the concepts of the exam but I had trouble remembering some concepts and steps and during the exam I feel pressured and nervous.	When it comes to interval and graphical solution
25	Square of trinomial because I forgot the steps and basic ways to solve it.	The last part because it has many solutions to solve it.
26	24-30 because I forgot to solve this question.	Questions 1 and 5 because I forgot the steps in solving
27	For me it is number 30 because it is hard for me to solve when the exponent is number 3 and I know that I didn't listen to Sir when he taught us how to solve it.	Changing the signs like greater than or less than and in interval notation
28	26-30 because I forgot how to solve it properly.	All except number 5 because it has an example or guide on the board
29	At trinomials because I forgot the steps.	I'm confused at interval notation and because I forgot it.
30	It's the last number. I don't know how to find the answer.	Putting the symbol and I don't know the steps how to solve it
31	I find it hard to answer numbers 9-13 because I didn't review and study this part.	In number 5 because the process is long
32	In adding and multiplying polynomials. I have a hard time in this part because the equation is so long.	Number 5 because the equation is so long and I don't have enough time
33	The special product (28-30)	The interval notation because I don't know

		it
34	The part of the exam that I find hard is the square of trinomial because I forgot how to solve it.	The part on the exam that I find hard is putting an interval notation and graphing.
35	The last part because it's hard for me.	Number 1 and 5 because the teacher said that it is hard
36	In part of multiplying because I forgot the steps.	In giving interval solution because I'm very confused which one will I write first whether it is the infinite sign or the number
37	The long equation with more variable because I didn't know where to start.	When I solve the graph and the interval notation
38	In 28-30 because I forgot the method.	Number 5 because I can't get the proper solving
39	Square of trinomial because I didn't study the lesson.	When it comes to graphical and interval solution
40	In putting negative and positive sign because of my clumsiness.	Number 4 because of the symbols, "<" and ">"
41	Numbers 7,8,12,13, and 25-30.	Number 1 because I forgot how to solve it
42	It is remembering all the steps and also because there are so many possible solutions, it mixed in my head and got confused on which is right.	The part where I need to transpose some numbers
43	The first part is hard.	In transposing and when deciding if it is negative or positive and in the sign and graphing
44	24-30 because I forgot to solve the problem.	The part that I find hard is everytime I put the sign because I thought it's negative.
45	The last number because I forgot the method.	Number 4 because I can't identify what symbol I suppose to put if it is "<" or ">"
46	The last part because it is very hard to solve and also lack of time.	In interval solution because I didn't remember which one is right
47	I think, all because I find the exam hard. My family problem reflects on my exam so I cannot concentrate on my studies.	In number 1 because I am not able to answer because the given doesn't have an absolute value
48	The last part because it is hard.	Number 1 and 5 because there's a lot of steps and I can't remember all of it
49	Squaring and the cube part because I thought I should not put the degree.	Transposing and careless mistakes because I feel anxious

**E12. POST-EXAM REFLECTION TOOL ESSAY PART
(COMPARISON OF FIRST AND LAST RESPONSES)**

QUESTION#2: *What study strategy could you have done to perform better for those items?*

	FIRST TEST (Quiz1) ESSAY RESPONSES	LAST TEST (Quiz4) ESSAY RESPONSES
1	Memorize the solution.	Memorizing
2	My strategy is solving.	The steps in solving the questions
3	Sing the binomial song that Sir taught us.	Review!
4	Evaluating with my classmates	Calculating some examples
5	Study with your friends. It's fun!	I think remembering the concepts and not carelessly forget them (but anxiety makes me forget)
6	Study them.	Study them and make reflection
7	Making your own reviewer	Making your own reviewer
8	Reviewing my notes, memorizing and analyzing the harder ones	Review notes better.
9	Reviewing my notes	By reviewing all my notes and answering some problems
10	Memorize the fomula on how to solve polynomials and etc.	I will memorize all the concepts.
11	Just remember the song.	Don't be anxious.
12	Reading notes and discussing with classmates	Reviewing notes and memorizing important information
13	Memorizing concepts and steps	Making my own reviewer
14	Review the formula.	I will review my notes if I have free time.
15	Review all my notes.	I need to study more.
16	Review all the lessons.	Study all of it.
17	Study my notes.	Memorizing
18	Memorize and review.	Study hard
19	Just remembering those things.	Read my notes and make my own exercises
20	Remember the lesson.	Review with my friends/classmates
21	I will study harder.	Review
22	Reviewing, memorizing concepts and formula	Review and read more
23	Review notes and memorize the formula.	Making and calculating my own problems
24	I think before the exam, I will review more and study harder.	Review

25	I will memorize the lessons that we've tackled.	Remember the lesson.
26	Just remember the songs.	Reviewing important notes
27	Review my notes	Study my notes
28	Remembering the concepts	Remembering important concepts
29	I did my best to solve and when I found the answer, I write it on my paper.	Making my own problems (Calculating problems)
30	Do my best to answer every item.	I will not always be anxious.
31	I will ask my classmates.	Review all the points of the exam.
32	Review and try to solve.	Review first your answer before you submit it to your teacher
33	Solving mentally	By memorizing more steps
34	Memorize the songs that Sir taught us and memorize the solutions.	By seeking the help of tutors
35	To review and practicing	By memorizing formula and solution
36	Read and always remember the steps on how to solve.	Practice answering same examples in solving
37	Reviewing before the exam	Review the reflection after we know the correct answer
38	I will review all the lesson coverage in examples.	I'm gonna read all my notes.
39	None	Reading notes
40	Study much better.	Just remember the most important concepts
41	I will review and check where I find it wrong to solve it.	Study more and better and I will seek for tutors to let me understand what I can't understand in the exam
42	I could have studied and reviewed more and give my best. Also, I'll try to understand hardly and try not to get confused.	Read my notes and listen to the discussion
43	Remembering the lesson	Review and memorize
44	Review the notes.	Review my notes
45	Read my notes four times	Review with my classmates before the exam
46	Mental solution	Reviewing notes
47	I will study hard and I will never be distracted.	I will memorize the steps and study in my house.
48	Memorize all the formula and steps.	Memorizing the steps
49	Review and listen more carefully.	Prevent careless mistakes

**E13. POST-EXAM REFLECTION TOOL ESSAY PART
(COMPARISON OF FIRST AND LAST RESPONSES)**

QUESTION#3: *Are you willing to change your preparation strategy for the next exam? If your answer is yes, what changes will you do? If your answer is no, why do you think you have to stick with your previous strategy?*

	FIRST TEST (Quiz1) ESSAY RESPONSES	LAST TEST (Quiz4) ESSAY RESPONSES
1	No, because my strategy is useful.	No, because I get used into it.
2	No, because I'm comfortable with my strategy and I'm nervous.	Yes, I will do my best to the next exam and I will have more time to review.
3	No, because the lyrics of the song is the steps on how to solve tha problem.	No, because if I review, I will memorize the steps and concepts in solving.
4	No, it's faster than all the strategies I have and I learn faster too.	No, because I'm comfortable with my strategy and I can clearly understand the topic.
5	No, because my strategy is always effective in other subjects because I always get test anxiety.	No, because my strategy perfectly nailed what I aim.
6	No, because the time I give for studying is enough.	Yes, now I will pay more attention in studying than playing ML.
7	No, because it works well so I don't think I need to switch strategy.	No, because it works good so there is no point in changing my strategy for the exam.
8	Yes, I don't know yet but I am sure that I need to change my strategy.	No, because I don't think I can do another strategy.
9	No, because reviewing my notes can help me by preparing for the next exam.	No, because it really helps me to remember some concepts.
10	Yes, I will not only memorize but also add some advanced reviewing and find some shortcut if it is long.	Yes, I will review all of the items that will be on other exam and will do all of the strategies.
11	Yes, I will review my notes before the exam.	No, because this is the best strategy that I can think of.
12	No, because it helps me in understanding the lesson.	No, because this is the strategy I use before the exam.
13	No, because I believe I can do this things in my own way or strategy.	Yes, because I want to have higher score.
14	Yes, I will use the formula.	No, because this strategy is effective for me.

15	No, because I have no other strategy.	No, because I need to review more.
16	No, because it is helpful to me.	No, because I think I'm comfortable with it.
17	Yes, I will review and I will put all my attention to who's speaking in front.	Yes, I will improve it more or enhance it.
18	Yes, I will change it because it may help find another strategy.	Yes, I will change it because it may help me.
19	Yes, I will do the notes and study them hard so I can pass the exam.	Yes, I will do better and spend my time on that lesson.
20	Yes, next time I will review all my notes.	Yes, I will try to do what my other classmates are doing.
21	Yes, I will study harder and do my best.	Yes, I will extend by time for reviewing.
22	No, I am going to stick to my previous strategy but be better.	No, because it is somewhat helpful to me but I'll do it better next time.
23	Yes, I will memorize the steps and important concepts.	Yes, I will make my own problem and answer it.
24	Yes, I will study hard and review more.	Yes, I will review more on the specific coverage of the exam.
25	Yes, I will do my best to memorize the lesson to have a high score.	Yes, I will review clearly to pass the exam.
26	Yes, I will listen more to my teacher and study how to solve.	Yes, I will do my best to get high score in the next exam.
27	No, because I know that it is effective but my notes are incomplete.	No, because for me it really helps and if I don't have notes, I borrow the notebook of my classmates.
28	Yes, I will give more time to studying and remembering the concepts of exams.	Yes, I will give more time to study.
29	Yes, I'm going to study before the exam and when I can't understand it, I will ask help from my parents.	Yes, I will make my own questions on the topic that we are going to examine and I will answer it.
30	No, I will accept that reality is often disappointing.	No, because that's the best way for me and I always accept all the scores if I deserve it.
31	No, I'm fine with it.	Yes, my new strategies are sharing information with my classmates and pray before the exam.
32	No, because I know that my strategy is very helpful to me.	No, because I know that my strategy is so helpful to me
33	Yes, because my strategy is not working. I'm going to solve it harder.	Yes, I will try to use another strategy.

34	No, I will memorize all the solutions and the songs if I have to.	Yes. Because of that, maybe next time I will pass the exam. The new strategy that I will use is asking help from tutors.
35	Yes, to review more and to concentrate and focus in the exam.	Yes, I will change my preparation strategy by memorizing concepts and steps.
36	No, because since last year, that's my way to prepare for the exam.	No, because this is the way/strategy that I feel comfortable in preparation.
37	Yes, because next time, I want to be better and the change that I will do is review hard.	Yes, to review more.
38	No, because it's hard for me to change my strategy.	No, because I know I will get better someday without changing my strategy
39	Yes, I will practice our lessons everyday so that I will remember it in the exam.	Yes, I will read my notes earlier so that I will pass the next exam.
40	Yes, I will not chill while taking the exam and while studying.	No, because it really helped me a lot.
41	Yes, I will avoid using the gadgets and just focusing on the lessons and review all my wrong to correct it.	Yes, because if I always have my phone while studying, I can't focus on reviewing.
42	I am willing to change my preparations because it looks like it's not working and if I still continue it I will fail.	Yes, I think I should change it because it's not effective. I even failed in the exam.
43	No, because next time I will give more time for me to remember the lessons.	No, because for me memorizing is better to remember the concepts
44	No, because this is my way to remember the lesson that he discussed.	No, because everytime we have a lesson in math, I always copy it so I have a reviewer.
45	No, because I'm confident that my strategy is fine to pass the test.	No, because it helps me a lot to remember the topics.
46	Yes, by distributive method.	No, because it helps me to the other part that I didn't remember.
47	Yes, I will never be distracted and I will study hard.	Yes, because I'm not satisfied with my strategy.
48	No, because I have to memorize all the formula and steps.	Yes, I will change my preparation strategy. I will change it to memorizing the steps and concepts.
49	No, because the problem is I'm nervous during the exam.	No, because I'm satisfied with my score.

**E14. POST-EXAM REFLECTION TOOL ESSAY PART
(COMPARISON OF FIRST AND LAST RESPONSES)**

QUESTION#4: *What support can your teacher give you for preparation for the exam?*

	FIRST TEST (Quiz1) ESSAY RESPONSES	LAST TEST (Quiz4) ESSAY RESPONSES
1	Give longer time.	Answer it yourself and do your best to answer the question.
2	Sing the math song in special product.	Review us on our lesson before taking the exam.
3	Teach us more and more so we will improve next time.	Energize us and give us some clues that will help us to get high scores.
4	Evaluate some examples before the exam.	Teach us better, think, and ask us one by one even the majority cannot answer right so the teacher can aim our mistakes and we will get better at it.
5	Moral support because majority of my classantes are getting test anxiety.	Nothing, it's just on me to do things to improve
6	Make me feel that the exam is easy even if it is not because when I feel that the exam is easy even though it is really hard, I could answer it.	Teach us well again especially the important concepts.
7	By giving tips and also by teaching a concept the best way (like the last time)	Review us before the exam.
8	Maybe they can teach us more about the items in the exams.	Give us the hardest problem to get highest score in the next exam.
9	Give us many practice exercises.	By giving us handouts and another reviewer and teach us carefully
10	Give some formula or shortcut to solve it or clues and most especially words of encouragement.	Just have moral support and always say that we can do it.
11	By helping us to review for the next exam	By helping us to review before the upcoming exam.
12	Just give us motivation before the exam.	Always cheer us up during tests.
13	Discussing to us the hard parts clearly and completely	Teach better and give more examples.
14	Give a reviewer.	Just teach us.
15	I think no time for the test because I always lack of time.	Teach the part that all of us are having a hard time with, not only one.

16	By reviewing	Encouraging us to have some review
17	Encourage us to prepare or review our lesson and they will say, "you have to learn this because you lend time here, so you should listen and lend your ears" because they say that so it can't affect our future.	Say this, "Do your best. It is just a number. What's important is you learn."
18	Tell us to review hard and study all the lesson if it is hard.	No, I don't need support because he already gives us support everyday.
19	Our teacher always gives us support every time. It's just that I didn't review a thing that's why my score is like this.	I think he's great already.
20	None	For me, I will question him everytime I don't get the topic.
21	By teaching us the lesson	I think giving more examples on that lesson
22	I think it's giving us more examples and discussing it clearly to us. But I'm not saying that our teacher is not discussing it clearly to us.	By having a reflection
23	By giving us words of encouragement	Review and give us more patience and show that he believes in us.
24	Before the exam, review all the concepts of exam and give us enough time to review.	Review us before the exam and don't erase the reviewer on the board.
25	I want them to teach us in the way of playing because I have more idea if they teach us in that way.	Review the given examples and review the important notes.
26	Give formula, patterns and songs for the exam.	More time and more examples
27	For me, Sir always supports us but I'm not actually prepared.	Encourage us to review our notes or read our handout.
28	Remind us to upcoming exam.	Ask us to have reflection
29	Just tell us when the exam is so we can prepare.	Moral support
30	Give song for preparation for the exam.	By teaching us the point that we cannot answer
31	By reviewing me and my classmates.	Give more examples and try to solve it.
32	Give many problems that I can review.	Be better next time

33	Say that we can do it to perfect the test or to have 50% of the score.	For me, by just saying, "You can do it!" That will help me to do better in answering my examination and I will take that as an inspiration.
34	I think my teacher can just cheer me up and say, "you can do it" so that I will be able to perform well in the next exam.	By reviewing us before the exam
35	Always motivate us.	More examples to study before the exam
36	By giving some examples and then answer it	None.
37	Give clues.	A motivation
38	Motivation and teach us very well	Review and be more patient.
39	For me, there's no need for support because our teacher is always giving his best to teach us to be a better version.	Telling the right answers
40	It can be by teaching us better and letting us know that we can do it.	I think just have a deeper discussion
41	I think the support is just help us with our studies until we get it right or until we understand our wrong.	I think it's my fault because I always forget things.
42	My teacher can help me by making lessons more understandable.	Give more time
43	I think more time to review.	He always give us time so we can prepare for the test.
44	Share to us the technique for it to be easy.	By reviewing us again and again until we master it
45	By reviewing us a lot of time	Full support
46	Full support	I think he is just doing his job to teach us.
47	Just the hardhsip to teach us	Give more shortcuts for solving.
48	By telling/saying positive things and not comparing us with others	Telling positive thoughts
49	Give us handout for formula and steps for solving an equation or any problems in math.	

APPENDIX F:**SPSS OUTPUT****Chi-Square Test for Gender****Chi-Square Tests**

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	.277 ^a	1	.599	.690	.372	.138
Continuity Correction ^b	.107	1	.744			
Likelihood Ratio	.277	1	.598	.690	.372	
Fisher's Exact Test				.690	.372	
Linear-by-Linear						
Association	.274 ^c	1	.600	.690	.372	
N of Valid Cases	101					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 22.32.

b. Computed only for a 2x2 table

c. The standardized statistic is .524.

Mann-Whitney U test for Age**Test Statistics^a**

	Age
Mann-Whitney U	1222.000
Wilcoxon W	2447.000
Z	-.449
Asymp. Sig. (2-tailed)	.653

a. Grouping Variable: Group

Ranks

	Group	N	Mean Rank	Sum of Ranks
Age	Control Group	52	52.00	2704.00

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	2.680 ^a	4	.613	.636		
Likelihood Ratio	2.779	4	.596	.635		
Fisher's Exact Test	2.690			.642		
Linear-by-Linear Association	.778 ^b	1	.378	.408	.219	.057
N of Valid Cases	101					

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.46.

b. The standardized statistic is -.882.

Experimental Group	49	49.94	2447.00
Total	101		

Chi-Square Test and Fisher's Exact Test for Family Size

Two-Independent Samples t-test for First Quarter General Average

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
GenAve Equal variances assumed	.859	.356	1.045	99	.299	.76099	.72824	-.68399	2.20597	
Equal variances not assumed			1.040	94.951	.301	.76099	.73146	-.69115	2.21313	

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
GenAve	Control Group	52	85.9038	3.38543	.46948
	Experimental Group	49	85.1429	3.92641	.56092

Chi-Square Test and Fisher's Exact Test for Study Time and Exam Preparation**Chi-Square Tests**

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	1.188 ^a	4	.880	.910		
Likelihood Ratio	1.190	4	.880	.910		
Fisher's Exact Test	1.723			.902		
Linear-by-Linear Association	.184 ^b	1	.668	.734	.378	.083
N of Valid Cases	101					

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .97.

b. The standardized statistic is .429.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	7.421 ^a	2	.024	.022		
Likelihood Ratio	8.422	2	.015	.026		
Fisher's Exact Test	7.455			.016		
Linear-by-Linear Association	7.007 ^b	1	.008	.012	.007	.006
N of Valid Cases	101					

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 1.94.

b. The standardized statistic is -2.647.

Paired Sample t-test for Comparing Means of Pre and Post Self-efficacy

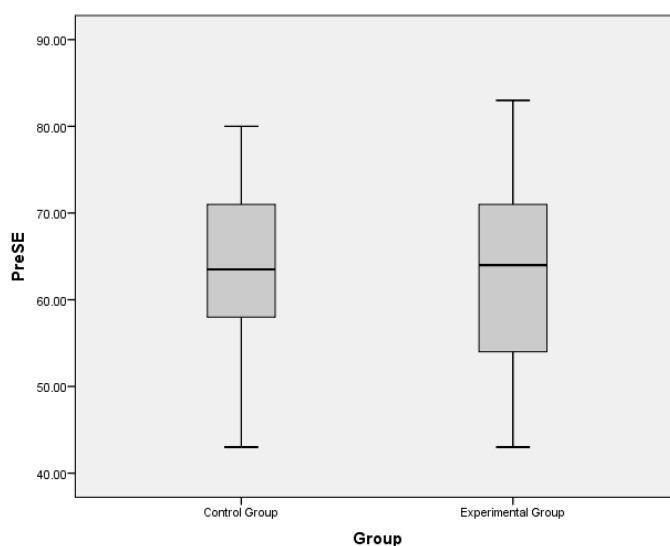
Paired Samples Statistics

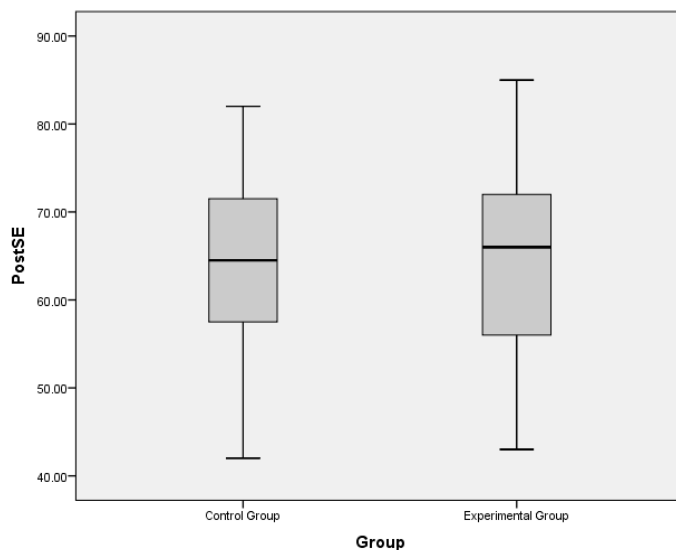
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreSECONT	63.8654	52	8.99243	1.24703
	PostSECONTROLLED	64.2885	52	9.07126	1.25796
Pair 2	PreSEEXP	62.2653	49	11.07884	1.58269

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PreSECONT - PostSECONTROLLED	-.42308	1.58851	.22029	-.86532	.01917	-1.921	51	.060
Pair 2	PreSEEXP - PostSEEXP	-2.30612	2.01250	.28750	-2.88418	-1.72806	-8.021	48	.000
PostSEEXP			64.5714	49	10.76840		1.53834		

Box Plots for Pre and Post Self-efficacy





Kolmogorov-Smirnov and Shapiro-Wilk for Test of Normality

Tests of Normality

	Group	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
PreSE	Control Group	.120	52	.060	.973	52	.284
	Experimental Group	.093	49	.200*	.966	49	.173
PostSE	Control Group	.102	52	.200*	.980	52	.506
	Experimental Group	.109	49	.200*	.976	49	.428

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Levene's Test for Homogeneity of Variance

Levene's Test of Equality of Error Variances^a

Dependent Variable: PostSE

F	df1	df2	Sig.
2.713	1	99	.103

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + PreSE + Group

Pearson Correlation for the Relationship of Pre and Post Self-efficacy

Correlations			
		PostSE	PreSE
PostSE	Pearson Correlation	1	.979**
	Sig. (2-tailed)		.000
	N	101	101
PreSE	Pearson Correlation	.979**	1
	Sig. (2-tailed)	.000	
	N	101	101

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

Homogeneity of Regression Slopes

Tests of Between-Subjects Effects

Dependent Variable: PostSE

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	9453.255 ^a	3	3151.085	981.433	.000
Intercept	20.715	1	20.715	6.452	.013
Group	10.441	1	10.441	3.252	.074
PreSE	9215.811	1	9215.811	2870.346	.000
Group * PreSE	3.380	1	3.380	1.053	.307
Error	311.438	97	3.211		
Total	428983.000	101			
Corrected Total	9764.693	100			

a. R Squared = .968 (Adjusted R Squared = .967)

Summary of Results of ANCOVA

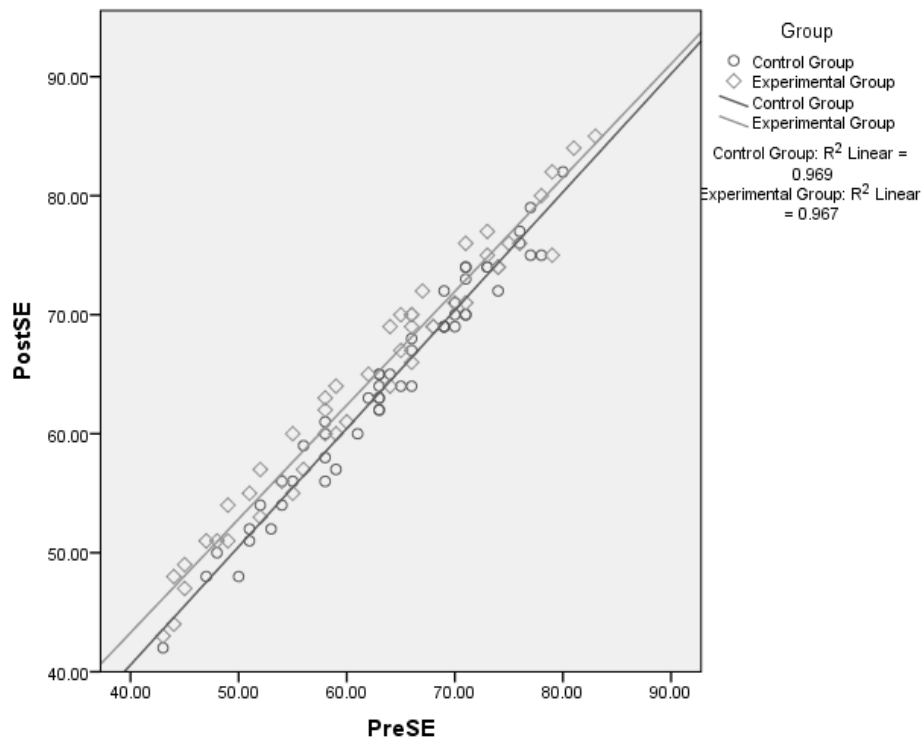
Tests of Between-Subjects Effects

Dependent Variable: PostSE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9449.875 ^a	2	4724.938	1470.831	.000	.968
Intercept	24.817	1	24.817	7.725	.007	.073
PreSE	9447.855	1	9447.855	2941.032	.000	.968
Group	84.590	1	84.590	26.332	.000	.212
Error	314.818	98	3.212			
Total	428983.000	101				
Corrected Total	9764.693	100				

a. R Squared = .968 (Adjusted R Squared = .967)

Scatter Plot of Pre and Post Self-efficacy



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Dane Publishing House, Inc.