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The Effects of Concept Mapping and Academic Self-Efficacy on Mastery Goals and Reading Comprehension Achievement

개념도 그리기와 자기효능감이 숙달목표와 읽기이해성취에 미치는 영향

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서울대학교 대학원
교육학과 교육학전공
앤 드 류

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지도교수 신 종 호

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앤 드 류

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위 원 장 金東一 (인)
부위원장 이 선명 (인)
위 원 신 종호 (인)

Abstract

The Effects of Concept Mapping and Academic Self-Efficacy on Mastery Goals and Reading Comprehension Achievement

The purpose of the study is to investigate the effects of concept mapping on mastery goals orientation and academic self-efficacy in a collaborative learning environment. The current study employed a randomized controlled pretest-posttest group design to examine if learning strategies such as concept mapping can help students with both reading comprehension achievement and intrinsic motivation of wanting to master a task at a high level. A total of 42 5th grade students at Ilshin Elementary School in South Korea participated in this study. The experiment group (n=22) has undergone concept mapping training while the control group (n=20) has not. All students were required to fill out questionnaires based on mastery goals, performance goals and academic self-efficacy. The results indicated that concept-mapping did not increase mastery goals and mastery goals had no effect on test scores. In addition, the interaction effect between academic self-efficacy and condition did not increase mastery goals and had no effect on test scores. In conclusion, the reduced number of samples may have caused a potential source of instability considering the statistical procedure chosen.

Keyword: concept mapping, learning strategies, mastery goal, academic self-efficacy

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Table of Contents

I. Introduction 1
1. Statement of Problem 1
2. Purpose of Study 4
3. Organization of Chapters 5
4. Research Questions 5
5. Definition of Terminology 6

II. Literature Review 10
1. Concept Mapping 10
2. Learning Strategies 25
3. Mastery Goals 40
4. Academic Self-Efficacy 56

III. Research Hypothesis 73

IV. Methodology 74
1. Participants 74
2. Procedures 75
3. Materials 78
4. Measures 80
5. Data Analysis 81

V. Results 83
1. Descriptive Statistics 83
2. Correlation 85
3. Research Question Results 85

VI. Discussion 89
Summary and Discussion 89

Reference 98

Appendix 111

List of Tables

Table 1. Participants Gender and Condition 75
Table 2. Descriptive Statistics for Experimental Group 84
Table 3. Descriptive Statistivs for Congrol Group 84
Table 4. Correlations Amongst Variables 85
Table 5. Output Resulting From Multiple Regression Analysis 1. 86
Table 6. Output Resulting From Multiple Regression Analysis 2. 87

List of Figures

Figure 1. Procedure of the Experimental Group 77
Figure 1. Procedure of the Control Group 78

INTRODUCTION

Statement of Problem

Educational psychologists have recognized that motivation is a significant factor for students to engage and achieve a desired academic outcome. Research has suggested that encouraging students to do their best through motivation is the key to success both inside and outside the classroom because academic motivation is the enjoyment of school learning characterized by mastery goals orientation, curiosity and persistence (Broussard & Garrison 2004). In addition, "overcoming difficult challenges will increase student's self-esteem" (Gottfried 1990, p. 525). Concept mapping may increase student's motivation because it is a learning method used to help students acquire cognitive learning strategies through understanding and organizing concepts (Russel, Comello & Wright, 2007). This is significant because concept mapping can help stimulate the situation response conditionals that help students reflect the organization of materials to enhance academic outcomes. This will ultimately enhance the student's ability to recall information which should help increase test scores (Anderson, Byrne, Douglass, Lebiere, & Qin, 2004). Empirical research has examined that motivation plays an important role to employ cognitive learning strategies, especially for reading comprehension (Park 1999). However, little is known about the relationship between concept mapping and motivation and how it may increase reading comprehension

achievement.

Broussard & Garrison (2004) defines motivation as the willpower and ability to do a task that moves students to do something. Students will make a choice whether he/she will benefit enough from the desired act or not. However, the student's ability and efforts plays a vital part of a student's success because it accounts for the intensity, strength, direction, determination and persistence of effort given to achieve a task. People tend to work harder if they are able to obtain rewards depending on the value of effort that has to be put in to task achievement (Jobbins and Judge, 2007). For example, students may want to score better on a test; however, depending on the value of effort that's needed to up the score, they must decide if their motivation level is high enough for the desire to be worth the cost.

Goal orientation theory is a social-cognitive concept that explains why students are motivated to achieve a task in their academic work (Benabo & Tirole, 2003). There are two major types of motivation which are intrinsic and extrinsic (Amabile, Hennessey & Tighe, 1994). Although four different types of motivation exist (i.e. extrinsic, intrinsic, instrumental and integrative motivation) they all conceptually overlap one another. Instrumental motivation and integrative motivation are a part of extrinsic motivation and integrative motivation is a part of instrumental motivation. Therefore, intrinsic and extrinsic are two primary types of motivation.

According to Deci, Koestner and Ryan (1999) intrinsic motivation is the ability to want to do something from the heart due to the lust for enjoyment rather than any external or outside rewards. This motivation comes from obtaining pleasure from the task itself and the sense of gratification when achieving results. Students with high intrinsic motivation are most likely to use mastery goals orientation. On the other hand, Lepper, Greene and Nisbett (1973) defined extrinsic motivation as a desire influenced by external factors as opposed to inner willingness to act or behave in a particular way to achieve a task. Extrinsic motivation drives people to do things that will result in tangible rewards such as money or a trophy. Students with high extrinsic motivation are most likely to use performance goals orientation.

Although there has been a strong debate whether mastery goals or performance goals are better than the other, both goal orientations are used in the learning environment to entice students to do well. However, research has indicated that mastery goals are more effective in the long run because students have more willpower to last longer and not burn out as easily. Students are able to weather the storm because there is an inner passionate desire to accomplish a task (Kusurakar et al., 2011). On the other hand, Performance goals may have negative effects in the long term because through this goal, students learn as a means to an end and seek extrinsic reward such as good grades or recognition to prove that they are more

superior to their classmates. Many researchers have found new ways to explore how mastery goals can be increased to have a more meaningful and richer learning experience. Intrinsic motivation is a better approach for the learning environment because it's more desirable and will result in better learning outcomes than extrinsic motivation (Deci et al., 1999). Within this study, we explored ways to increase intrinsic motivation through learning strategies and academic self-efficacy.

Purpose of Study

The purpose of this study is to investigate how concept mapping can increase mastery goals and academic self-efficacy can be increased. Although students are more likely to be intrinsically motivated to master a subject or task through mastery goals, the problem is that students with weak or no learning strategy skills may not be as successful when compared to their higher performing peers. These students without the development and training may struggle because they are not able to fully manage the absorption of new material that’s been taught in class. There is limited research as to how learning strategy called concept mapping can promote and enhance reading comprehension achievement and increase mastery goals. However, if students do not have positive academic self-efficacy, concept mapping may not increase mastery orientation as much. This study addressed these shortcomings of mastery goals orientation.

Organization of Chapters

Chapter I. introduces an overview of the theoretical and practical issues in regards to concept mapping and how it may increase mastery goals and academic self-efficacy. Chapter II. provides a critical review of the literature on characteristics of concept mapping, learning strategies, mastery goals and academic self-efficacy. Chapter III. describes the research methods of the study. Chapter IV. presents the results for each of this study's research questions. Lastly, Chapter V. includes a general discussion of the study as to what our limitations were and what went wrong. It also addresses why the present research is significant to other researchers and our field of educational psychology.

Research Questions

Based on the extent of research that has been done, this study has been geared toward research questions that will examine the relationship of classroom mastery goal orientation and the effects of concept mapping. In addition, an investigation will also be conducted to see if higher self-efficacy enhances mastery goal orientation. The reason for this is because if students don't have the desire, self-confidence or determination to produce a desired result, then there may be negative reading comprehension achievement. This research will primarily examine how independent variables such as concept mapping and self-efficacy can affect our

dependent variable mastery goals and task achievement. To discover the effects of our research, two research questions have been generated to analyze the results or consequences that could happen as a result of change.

Question 1: Does concept mapping promote mastery goal orientation and reading comprehension achievement?

Question 2: Do the effects of self-efficacy enhance concept mapping strategy on mastery goal orientation and reading comprehension achievement?

Based on the previous studies on mastery goals, concept mapping and self-efficacy, it is predicted that mastery goals should be enhanced if students are able to strongly comprehend what concept mapping is after it is taught. In addition, mastery goals will be further increased if students have high academic self-efficacy because they will have the confidence, talents and abilities to be capable of performing a task at a higher level so that they can obtain the desired outcome of higher reading comprehension achievement.

Definition of Terminology

The purpose of the study is to investigate the effects of concept mapping on mastery goals and self-efficacy. For this specific research purpose, we considered mastery goals, concept mapping, academic self-efficacy and task achievement as major variables. A comparison and

contraction of each variable will indicate if the effects contribute to increased mastery goal orientation and intrinsic motivation in an educational setting.

Mastery Goals

Mastery goal is defined as an intrinsic type of motivation and focus on learning a task thoroughly. In addition, according to self-improvement motivation, mastery goals help with the development of new skills and competence of trying to accomplish something challenging. It derives from an individual's motivation for personal enjoyment, interest, or pleasure (Schunk, Pintrich & Meece, 2008).

Performance Goals

Performance goals are defined as extrinsic motivation. Students are more focused on doing a task because of a reward that will be given. The side effect of this goal orientation is that students usually do well in the short term but will gradually lose interest as the task persists. In addition, students may also give up on a task because the effort may not be worth the reward in terms of work they need to put in for reading comprehension achievement (Midgley, Kaplan, & Middleton, 1997). Performance goals was used in the study to compare the results between mastery goals

Academic Self-Efficacy

Academic self-efficacy refers to an individual belief that students are able to successfully achieve a desired result at a designated level on an academic task or specific academic goals (Bandura, 1997; Eccles & Wigfield, 2002; Linnenbrink & Pintrich, 2002). Academic self-efficacy also plays a critical role in how challenges are handled to overcome obstacles and achieve desired results (Bandura, 1997).

Concept Mapping

Concept mapping is a learning methods in which students are required to draw a bubble map to represent the conceptual knowledge they read from learning materials. Through concept mapping, students are required to build a visual representation of a set of abstract concepts usually in a form of a bubble or square and chain link those concepts with details. Concept mapping can foster the acquisition of knowledge in individual or collaborative learning (Chang & Chen, 2002). Concept Mapping was used in the study to see if students were able to increase test scores.

Collaborative Learning Environment

Collaborative learning is defined as a situation in which two or more people learn or attempt to learn something together for the purpose of

problem solving. Collaborative learning will also help students re-organize their ideas and elaborate higher thinking with social interactions among peers. Students will share knowledge as a group to better understand concepts and ideas through elaborated explanations which should improve comprehension of task achievement (Dillenbourg, 1999). Collaborative learning environment was used in the study because students were required to work with a partner when constructing a concept map.

Reading Comprehension Achievement

In the study, reading comprehension achievement is defined as the student's ability to understand learning material with accuracy. It will also be used as a tool to measure the total points scored by each student on taking the quiz. The readings will be comprised of TOSEL jr. passages with multiple choice type questions that all students must answer to determine task achievement levels. The reason why TOSEL jr. test was selected for this experiment is because it was a test designed for Korean 5th grade students to determine their current English level. The test was validated, created and administered by the Educational Broadcasting System (EBS) used as an alternative to the TOEIC and TOEFL test.

LITERATURE REVIEW

In the chapter, the literature review has been is organized into two categories. First concepts and characteristics of a specific topic will be introduced. Afterwards, the literature review will compare and contrast many previous studies to see if there is an agreement or disagreement amongst researchers, hypothesis, or ideologies. The variable will be summarized to understand a broader picture of the effects in full detail based on the benefits and weaknesses it may possess. The literature review will also present solutions as to how these benefits can be strengthened based on the limitations that were identified within the previous studies. The research topics or variables that will be discussed includes: concept mapping, learning strategies, mastery goal orientation and academic self-efficacy

Concept Mapping

Concepts and Characteristics of Concept Mapping

The concepts and characteristics of concept mapping was first introduced and developed in the early 1970's by J. D. Novak and his research team at Cornell University. These people firmly believe that concept mapping can enhance critical thinking skills because it is a technique for providing a graphical representation of concepts and links in between ideas which can promote deeper understanding and reading

comprehension (Lanzing, 1997). Concept mapping refers to graphical tools used for organizing and representing knowledge. It can also include important segments from reading passages, usually enclosed in circles or boxes of some type and used to connect the relationships between two concepts or more through the use of connecting lines.

Within concept mapping words or phrases on the line are referred to as linking words or linking phrases, specify for the relationship between the two concepts (Novak & Canas 2006). Concet mapping is also used because it is a learning strategy that establishes a bridge between how people retain knowledge by learning critical and thinking skills. Through the use of concept mapping students will enhance meaningful learning as a way to resolve problems and complete a task. Although sensible learning is associated with concept mapping, Karpicke and Blunt (2011) enhances the idea that a concept map is used by students to construct a diagram in which nodes are used to represent concepts. The students are then required to link concepts together by connecting the nodes. Concept mapping is highly considered an active learning task. Critical thinking is increased because it serves as an elaborate study activity due to the fact that students are producing a map based on the notions or readings that they are trying to learn. It requires students to enrich material that students are trying to grasp through encoding meaningful relationships between theory and thought.

Novak and Gowin (1984) research supports this claim because

concept mapping also explores the relationship of ideas that presents meaningful forms of proposition and critical thinking ability. Since proportions are two or more concepts linked together if students can find a way to analyze the relationship between them is then it could enhance analytical skills retention of knowledge. The reason is because through concept mapping, it will help students externalize ideas and propositions created by concept labels. Concept mapping can also help students explore how they can learn better and more effectively by providing the fundamental key elements that are essential to connecting the main ideas with supporting details. It has the ability to facilitate creative work and provide a more efficient and organized way for ideas to be interconnected.

Concept mapping refers to graphical tools used for organizing and representing knowledge. It includes concepts, usually enclosed in circles or boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts. Words or phrases on the line, referred to as linking words or linking phrases, specify the relationship between the two concepts (Novak & Canas, 2006). It is also used because it teaches a learning strategy that establishes a bridge between how people retain knowledge and sensible learning through critical thinking. This will help students with enhanced meaningful learning and academic achievement.

Although sensible learning is associated with concept mapping, Karpicke and Blunt (2011) enhances the idea that concept mapping can be

used by students to construct a diagram in which nodes are used to represent concepts. The students are then required to link concepts together by connecting the nodes based on the sequence of order that the information entails. Concept mapping is highly considered an active learning task. Critical thinking is increased because it serves as an elaborate study activity due to the fact that students are constructing a map based on the idea or readings that they are trying to learn and it requires students to enrich the material that is being learned through encoding meaningful relationships between ideas and concepts.

Concept Mapping and Collaborative Learning

There are two ways a concept mapping can be used. It can be for individual purposes or it can also be used within a group of two or more people. Within a group, concept mapping is a process that helps a group of students work together to describe and understand a task more efficiently. This is significant because when students work together it can promote and foster creativity and faster learning. Students are able to combine unique perspectives from different members within the group and create effective ways to interpret new concepts by writing down the ideas spoken by each member through the use of concept mapping. While students are conducting this process, it requires them to brainstorm what they have just read. They will then have the opportunity to share their ideas with group members so

they could sort concepts into bubbles (Osborn, 1948).

Concept mapping is a collaborative effort that is used effectively through input from one or more students. This in turn helps produce ideas and help shows other members how concepts are interrelated. Concept mapping may help people think more effectively as group while maintaining individuality and fresh ideas. Lastly, since concept mapping is a structured process that helps narrow the focus on a topic of interest, students may become more motivated and contribute more in a group to share their ideas and ways to solve a problem and to find new solutions (Trochim, 2004).

While students are constructing a concept map, collaborative learning can help students actively exchange of ideas within small groups and will not only increase interest among the participants but also promote critical thinking, metacognition and understanding. There is persuasive evidence that groups which cooperate strongly together will achieve higher levels of achievement because they will be able to retain information longer than learners who work quietly as individuals.

Lastly, when group members are sharing information it gives learners an opportunity to engage in discussion and eventually become greater critical thinkers. Rohrbeck, Block, Fantuzzo & Miller (2003) research support this claim because peers can serve as natural teachers to other group members that that will stimulate cognitive development and contribute to task orientation, persistence, and motivation to achieve a task.

In addition, this can be a great a great opportunity because students may further retain knowledge after the material is taught by them in the long term process.

Although exchanging ideas to promote higher levels of critical thinking are vital Ames & Archer (1988) states that changing the classroom structure to collaborative learning may not help some students that lack certain metacognitive skills. The reason for this is because if there is a huge gap between metacognitive levels amongst student then those with low metacogition may not understand the task fully and could rely on other group members with high metacogntiivive levels to carry them on a task or assignment.

This may not be as efficient because students with high metacognitive skills may only collaborate amongst themselves. These high performing students could determine the outcome of a task. Since they know that other group member may not be able to contribute heavily on a task these low performing students could be ignored by the rest of the group and their input may have no impact. In addition students with low metacognitive skills may also suffer because they are not aware of critical learning strategies or fully understanding the usage of the concepts behind it. Low performing students may struggle to adapt and will have a have a harder time to achieve academic success. Therefore, depending on the circumstances, the teacher should carefully evaluate the current level of

each student before attempting to make a decision to utilize a higher learning strategy.

Concept Mapping and Reading Comprehension

Concept mapping can increase reading comprehension achievement because it can help summarize significant key concepts and their relationships associated with the main idea of the content. In addition, concept mapping helps individuals store knowledge that act on declarative memory. This is referred to information that can be consciously recalled through the storage of long term memory in the locus. Concept mapping can help stimulate the situation response conditionals that help reflect the organization of the material to enhance reading comprehension achievement which will ultimately enhance the student's ability to recall information that could in turn help students increase their test scores and multiple reading assignments (Anderson, Byrne, Douglass,Lebiere, & Qin, 2004).

Although understanding key relationships is important in concept mapping to enhance academic outcomes, Poltnick (1997) would also further accept the idea that concept mapping may also aid in the creation for new ideas through brainstorming, design complex structures, communicate complex ideas, aid learning by explicitly integrating new knowledge and assess understanding or diagnose misunderstanding. With all these applied skills being used while a student is applying concept mapping, there is little

doubt that academic outcomes will be enhanced. Higher test scores and better academic performances are to be expected if concept mapping is used.

Redford, Thiede, Wiley & Griffin (2012) also investigates if concept mapping can increase academic outcomes through better test scores. Within the study, fifty-nine seventh graders partook of this experiment. Participants had an average age of twelve. There were thirty-three female and twenty-six male students. The majority of the students came from a poor socioeconomic background and over seventy percent of the students were eligible for free or reduced lunch from the federal government. Of the fifty-nine total students, thirty-eight students were put in the concept mapping group and twenty-one were in the control. Concept mapping training was provided to the treatment group across several days.

After the training was complete, all students were required to read three reading passages and answer questions based on the readings. The experimental group however, was required to create an additional concept map while taking the comprehension test. Each text was approximately 430 words long. Questions were designed to assess the generation of inferences or connections implied by the text, not on simple memory of facts contained in the text (Wiley et al., 2005).

The results indicated that the concept mapping group outperformed the control group in each experiment and had a better academic outcomes in experiment one, which contained three lessons on concept mapping. In

addition, test performance was positively correlated with concept mapping and students were able to benefit from using this concept mapping as the primary source of learning strategy. Students expressed higher self-confidence because they were able to utilize concept mapping as a better way to organize new thoughts and knowledge based on the reading materials.

Chiu (2008) conducted a similar research experiment and basically obtained the same results as Redford, Thiede, Wiley & Griffin (2012). This time not only did she explored the relationship between concept mapping to academic outcomes but she also discussed the students perception and how they felt about it. Afterwards, the study was conducted to examine if concept mapping can be used to help her accounting students improve their learning objectives and academic outcomes. The reason for this is because Chiu (2008) claims that learning strategies can be used to develop students to learn abilities and develop more independently. In addition, concept mapping serves as a good technique used to encourage students to obtain information more efficiently which can also increase academic outcomes. Lastly, there is limited research on concept mapping in a business university level course and how these students will perform after the learning strategy is implemented.

Chiu's wanted to understand if there is any relationship between concept mapping and improvement made by students through positive

attitude towards using concept mapping as a learning tool. A total of one hundred and four students from two classes in advanced accounting courses at the School of Management in Taiwan participated in the study. All participants were first semester students of 2002. The first group consisted of sixty-two students that were randomly assigned as the experimental group. The other sixty-two students were assigned as the control group.

The control group maintained normal traditional curriculum activities. Both groups used the same accounting textbooks over the course of the semester. Before the start of the class, none of the students reported that they knew anything about concept mapping. Many students stated that this was their first time hearing about the idea of concept mapping. In addition, both classes were required to take a pre-test to determine their prior knowledge of accounting and for the researcher to determine the reliability of concept mapping when compared to their experimental counterpart. According to the statistics, the data indicates that both the control and experimental group had almost the same identical scores. In addition, there was not that much difference between students with prior knowledge or lack of knowledge before the researcher began the experiment.

After the pre-test was complete, the experimental group underwent a three hour training session program based on concept mapping and the effective use of learning strageties. The researcher explained to her students why concept mapping was useful for its purpose of helping students retain

knowledge about accounting and how it can strengthen their comprehension skills to compare or differentiate between ideas. The researcher did this in accordance with research procedures done in a way that was suggested by Novak and Gowin (1984) because this experiment was a replication study to test the effects of concept mapping through the learning of accounting. The researcher taught from the textbook while using concept maps to link ideas to show a visual representation.

When each chapter was complete, students were required to create their own concept map based on what they have learned in class through lecture. After students created the concept maps to the best of their ability, the researcher examined possible errors and worked together with the student to identify any accounting misconceptions or misinterpretations that they may have made and clarified them. Students were then required to fix their mistakes and reconstruct their concept maps again with the corrections so that they can submit it to the researcher. The length of this process took twelve-weeks for the entire course to be completed. Within the control group, no concept mapping training or creation was required. Instead, after each accounting chapter, these students were required take notes and answer questions based on the main ideas of the reading passages. The researcher went over the questions with the correct answers in detail until all six chapters of the book was complete. The time frame of the course was the same with the experimental group.

According to the results, the data indicated that the concept mapping strategy group had a huge improvement over the control group of using traditional teaching methods for the experimental group. This represents that the concept mapping strategy had a significant impact based on student's retention of knowledge and ability to learn. In addition, most of the students were satisfied with using concept mapping as a primary learning strategy because it helped them understand key concepts and retain significant knowledge based on the accounting reading materials in the textbook. Since learning was more enjoyable, it enticed participants to benefit from the class more because students felt that accounting became way more interesting and enjoyable. In addition, there was a general consensus that concept mapping can be beneficial to other courses in the future.

Although the results turned out positive, there were some problems associated with the study. According to the implications, nearly half the students reported that they could not quickly adapt to the approach of concept mapping because of the difficulty of the learning strategy. The reason is because students have stated that the lack familiarity of concept mapping associated with learning technique to organize concepts and ideas can be frustrating for novice mapmakers. Students felt that at first concept mapping was tedious and time consuming because it was a hard learning strategy to master. Therefore, some students preferred to revert back to an easier learning strategy that they felt more knowledgeable. However,

towards the end of the course, students were more satisfied because they became more familiar with concept mapping through practice and noted that it became easier with time and consistency until it was convenient to use without much error. In addition, mastery goal orientation was increased because as students found the use of this technique to be easier, students eventually found an appreciation and enjoyment for the use of concept mapping.

Concept Mapping vs. High and Low Metacognition

Although concept mapping can be a great asset when assisting student with academic work to link concepts and idea, it must not be used at the expense of other learning strategies. The reason why this is significant because many high performing students are not fixated on just one learning strategy but would rather use a variety of learning strategies to achieve their academic goals (Blerkom, 1994). However, if only concept mapping strategy is applied without the aid of other learning strategies then there is a chance that performance levels can actually drop. In addition, if students do not have the knowledge to apply concept mapping because their academic performance is too low, then concept mapping may also serve them no good because their lack of knowledge needed to apply concept mapping strategies may not be high enough (Safayeni, Derbentseva, & Cañas, 2005).

Despite significant academic outcomes from Redford et al., (2012),

the problem is that concept mapping fails to address if high performing students can benefit as much compared to low performing students from the positive effects metioned. In addition, it is expected that the average student will benefit the most from concept mapping. However, further research should compare studies to investigate the effects of concept mapping with low metacognitive students to see if there is any correlation between their high metacognitive counterparts. If concept mapping does not increase low metacognitive students then a different and simpler learning strategy should be implemented.

According to studies from Haugwitz, Nesbit and Sandmann (2010), In Germany, high school students were required to study about the human circulatory system and work in a collaborative learning environment. The class was divided into two groups. The experimental group was required to construct a concept map and the control group was required to write an essay and take notes pertaining to the information taught at class. The results indicated that the concept mapping group outperformed the control group for low cognitive ability learners (d=0.57) but not for high cognitive ability learners (d=-0.07).

These results are significant because evidence indicates that concept mapping may not be effective for students that have high Metacognition or cognitive skills. The reason might be because high performing students could have been using other learning strategies prior to just using concept

mapping. Students with high cognitive ability are usually already successful at using multiple learning strategies and will have the ability to adapt and choose the best learning technique suitable for their specific task (Root, 1999).

Concept Mapping Limitations

Despite the numerous positive effects of concept mapping, the limitations could be that concept mapping is not very effective when used to analyze algorithmic solutions (Zeikik, et al., 1997). In addition, although educators encourage learning with visual aids, it must not be at the expense of critical thinking. Unfortunately concept mapping can interfere with problem solving when students are trying to accomplish a task. Concept mapping may also diminish reasoning skills and students may find it harder to learn new materials that have low metacognition (Woolfolk & Margetts, 2010).

Another major weakness pertaining to concept mapping is that if students do not have the intrinsic motivation to learn new materials that they are applying then it will not be as effective. Without positive behavior and dedication to learn or understand new materials, will be harder for students to connect key concepts with the main idea after reading and analyzing the text. Students will not be encouraged to produce meaningful learning to organize and share information effectively through concept mapping. In

addition, if students are forced to apply a learning strategy with a bad attitude then the full effect of learning will be hindered (González et al., 2008; Mann & LeClair, 2009; Pinto, 1997).

Learning Strategy

Concepts and Characteristics of Learning Strategies

Finding ways for students to further their academic knowledge through learning strategies gained momentum in 1975 when Rubin and Stern wanted to understand how students can learn more efficiently. McInerney (2001) states that students are becoming more demotivated to learn in the classroom because learning is becoming more disinteresting from traditional lectures. Instead, students may enjoy learning far greater if they had the opportunity to use hands on approach and use learning strategies that gives students experiential learning opportunities. This in turn, prompted many researchers to pinpoint the problem and to find a resolution based on the above mentioned issues.

Many scholars agreed that one of the primary reason why this for this motivational drop happened is because students do not possess the learning strategies and skills necessary to learn successfully and that learning strategies should be geared based on a student's eagerness and willingness to learn. An example would be using learning strategies that are hands on approach. If students are learning about geometry and engineering

then it might be better for the students to use lego blocks as a creative way for them to construct their own ideas and implement a satisfactory learning strategy (BouJaoude & Attieh, 2008). The reason why students may not perform well is because they lack a factor of quantity, quality or use of learning strategies (Kaylani, 1996).

According to Oxford (1990) learning strategies are used to by the learner to aid the acquisition, storage, retrieval, and use of information. This is significant because the learner is able to make learning easier, faster, and more enjoyable. Learning may also be more self-directed, effective, and transferable to new situations. However, Dansereau (1978) believes that the effects of learning strategies are only beneficial based on the situation and purpose of a student willing to accomplish a task. He categorized learning strategies into two parts. Students that use learning strategies to operate on education material directly are called primary strategies and strategies that operate to help create the support structure around primary strategies are called support strategies.

For example, students using primary strategies may be encourages to create concept mapping that can help organize ideas and show the relationships amongst concepts to help them visually see the flowchart as a schematic representation of sequences that happen in chronological order. In addition, concept mapping can also help with organizing timeframes associated with the reading passage. However, under the support strategies

students will find ways to create support for concept mapping by using a complimentary learning strategy called mind mapping by drawing pictures of the main ideas within the concept map to enhance learning.

Unlike the definitions mentioned above, Kaylani (1996), has a unique response because he strongly believes that learning strategies are broken down into task achievement, stage of the learner, age of the learner, the context of learning, individual learning styles, and cultural differences. The reason for this is because even though a student may be trying to improve their English reading skills, there are also many facets to consider. If a student is trying to learn vocabulary words, then the rote learning method may be more beneficial. For example, this can be achieved through flash cards by writing the words on one side and the definition on the other. However, if you are using those same vocabulary words in context, it might be better to consider another learning strategy such as concept mapping to create a graphic organizer to identify the main idea and concepts associated with that word. It is agreed upon by researchers that mastering a vocabulary word through the use of both these strategies is more significant because it helps students retain knowledge in the long term.

Multiple Learning Strategy

Using multiple learning strategies at once can be more useful. McGroaty (1985) states that students who are more successful are not

necessarily using a single learning strategy but rather a combination of them. In addition, a certain learning strategy may be considered good or bad depending on the student's learning level and the frequency that it has been used. For example, according to Abraham & Vann (1987) research, they concluded that unsuccessful learners could not apply the appropriate learning strategy to achieve a reading task through the use of concept mapping because it was too difficult for them. Unsuccessful learners lacked the necessary metacognitive skills necessary to successfully apply and utilize advanced learning strategies. It is recommend that these students undergo remedial training and reapply concept mapping until it is master and if time permits. However, if time doesn't permit, then it may be more efficient to use an easier learning strategy that is appropriate for the student's current metacognitive level.

Kaylain (1996) research supports this claim because even though using a combination of learning strategies can be beneficial in many instances, if students are unable to master multiple learning strategies or even a single learning strategy with the full understanding of how it is used then it could lead to more confusion, frustration and a lack of learning acquisition. However, if the students have the metacognition and capability to do both then using a combination of different learning strategies may lead to more academic achievement because students may be able to control the difficulty of a task by breaking it down into smaller steps and analyzing the

task accordingly.

Learning Strategy and Student Learning Styles

According to Sternberg (1994), learning styles are a student's unique way of learning educational material based on the model of instruction or study method which can enhance learning strategies. It is regarded as a student's preferred or best way of retaining information in regard to what mode of strategy is most effective. The main purpose of using learning styles is for students to interpret, organize and store information based on what was being taught in the learning environment. Students who understand their own learning styles are usually able to achieve higher grades, show better positive attitude, exhibit higher self confident by modifying their learning strategies and to fit their need of learning accordingy. In addition, these students usually show better attentiveness to learning. Learning styles can affect cognitive, affective and physiological behavior that is influenced by the student's experience, interaction, environment and cultural background. (Narayani, 2014).

According to Graf, Kinshuk & Liu (2009), depending on the subject being taught, students may learn better from one learning style as opposed to another in certain circumstances. Teachers who are aware of different learning styles can also help enhance learning and teaching by understanding different thought patterns and behaviors exhibited by students

in the learning environment. On the other hand, students without much experience or exposure in another learning method may struggle to adapt and will not benefit from the full effects until it is mastered (Shannon, 2008). It has yet to be proven that one learning style provides the best means for learning. There are three subcategories associated with learning strategies which include visual, auditory and kinesthetic. According to the modality theory, which describes how memory and learning is performed based on the assigned academic task, one or two of these learning styles are usually dominant whereas the third may not be as strong as the first two (Glenberg, 1984).

Learning Strategy and Goal Orientation

According to Payne, Youngcourt & Beaubien (2007) learning strategies can positively affect goal orientation because there is a positive link with self-regulatory behaviors such as planning and goal setting that will influence motivational levels and achievement. Students with high learning goal orientation with strong intrinsic motivation are more likely to perform better on academic tasks because they will use a combination of multiple learning strategies unlike low goal orientation students. The danger is that if there is no intrinsic motivation and the goal orientation shifts toward avoidance performance goal, then students are less inclined to seek the use of learning strategies and may show little ambition to succeed (Walle

& Cummings, 1997). Therefore, it is important that huge intrinsic motivation levels are needed to successfully predict both the quality of the engagement that will be displayed in an academic setting. When students find ways to develop learning strategies, they ultimately will have a higher probability of achieving their goals (Fadlelmula, 2010).

Wolters (2004) would agree with the above statements of how learning strategies can increase certain goal orientations (i.e. mastery goals can increase learning strategy; however, performance avoidance goals can lower the use of it) it is proven that learning strategies will help students learn information and solve complex problems to promote academic achievement. It was proven that mastery goals orientated students were motivated, engaged and procrastinated less because they persisted upon using more effective learning strategies than students with performance goals.

The results shows that learning strategies will help students become more active learners because metacognition is increased. It is useful for effective learning when trying to store and retrieve information (Weinstein, 1985). However, without the right goal orientated motivation, learning strategies can be useless. The reason for this because it is ultimately up to the student to decide if they are willing to use them to achieve academic achievement based on their current levels of motivation and effort they are willing to put in (Walle & Cummings, 1997).

To test the effects of learning strategies on of goal orientation Matos, Lens and Vansteenkiste (2007) conducted an experiment using one thousand, five hundred and five 8th to 10th grade high school students. Students were informed to complete a questionnaire based on the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991). A Likert-type scale (i.e. 1. Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree and 5 Strongly Agree). Matos, Lens and Vansteenkiste (2007) firmly believes that there are five subscales associated with the different kinds of learning that taps into various aspects of how knowledge is learned and processed into the brain. These five different kinds of learning includes: rehearsal, elaboration, organization, critical thinking, and metacognitive. The five types of learning is a means to enhance academic achievement to the best of a student's ability and to motivate students to do well.

First, rehearsal strategies are techniques used for basic memory retention. It is used to recite information until converted into memory with constant practice. This process is also known as rote memory of learning. It is a cognitive process that is practiced and repeated several times until the information is converted into memory; however, the effects are usually short-term. The reason is because working memory stores information or data at a high pace and can lead to students forgetting critical information overtime.

Secondly, elaboration strategies are the exact opposite of rehearsal strategies. Instead of short-term memory, it focuses on long term memory and retention of knowledge after it has been taught. It is a strategy meant to strengthen and use elements combined so that that students can expand the target of comprehension of information. This is most useful when students analyze concepts or create inferences between two passages and use them to compare or contrast them through integrating new concepts with knowledge that has been obtained in the past. This strategy is most effective when teaching students how to read for comprehension retention and achievement.

Thirdly, organizational strategies are actions that students will do through strategic planning. It outlines strategic steps intended to enhance learning. For example, if students create a time frame for educational purposes then he/she should follow that plan accordlngly (i.e. student should take notes in class, have the teacher correct mistakes afterwards and study the finished product at home).

Fourthly, critical thinking measures the student's ability to objectively analysis and evaluate an issue or problem. This strategy is meant to teach students the ability to think clearly and rationally so that can they become independent thinkers. It is also the ability to construct and evaluate arguments and reflect on their justification needs based on beliefs and values associated with an idea.

Lastly, metacognitive strategies refer to the methods that may help

students understand themselves better so that they will know how they will best learn. It is the cognition associated with the mental action of processing and acquiring knowledge through experimental experience or by perception of thought and learning. This is important because students will have a better idea of their cognitive process which could result in more control in the learning environment. In addition, reading comprehension achievement may be increased because if a student understands himself/herself it is possible to implement specific types of learning strategies that can be used to promote successful learning

According to Matos et al. (2007) states that mastery goals had the highest overall correlation associated with all five learning strategies. The three highest correlations were critical thinking, metacognition and mastery goals. However, school type and mastery goals correlated negatively. In addition, the same thing happened with mastery goals and performance-approach and performance-avoidance goals. These results are not surprising and should be disregarded because many students have indicated that performance-approach and performance-avoidance goals contradict mastery goals in terms of motivation by students. In addition, since mastery goals correlated highly this indicated that there was a strong reaction between how students perceive how important intrinsic motivation was for academic achievement.

In conclusion, this supported the researcher's hypothesis that out of

the three variables, that mastery goal orientation was positively associated with making more use of learning strategies and also with higher academic achievement. Out of the three achievement goals, mastery goals ranked the highest, performance-approach marked the second highest and performance-avoidance ranked the lowest in terms of learning strategies used when these goals were applied. It should also be noted that only high school students from 8th-9th graders were used; therefore, further research is necessary to identify if the same effects apply on younger children in their elementary or middle school years.

Learning Strategy and Academic Achievement

Although Matos, Lens and Vansteenkiste (2007) provided valuable research and insight based on the effects of learning strategies to goal orientation theory, it fails to distinguish the effects between high performing and low performing learners for academic achievement purposes and how gender may affect outcomes; therefore, Simsek and Balaban (2010) expanded on this topic and provided valuable insight through their experiment by analyzing the effects of learning strategies of undergraduate students and how learning strategies were related to students academic performance. This is important because without data on gender it is hard to analysis if there is a difference between male and female learning patterns or if there is any effect based on learning strategy. The researchers used a

wider variety of participants ranging from the high to low performing students.

According to Simsek and Balban (2010) Learning strategies should assess and accommodate students based on their academic needs; however, it is not an easy task because the use of learning strategies may vary significantly from one student to another depending on group instruction vs. individual learning context. Student's metacognitive abilities and eagerness to learn should be closely examined before any use of learning strategies is to be implemented. If students have low metacognitive levels then students should not use advanced learning strategies that they are not ready for because it can lead to a decrease level of reading comprehension achievement and frustration amongst learners. In addition, it can also decrease intrinsic motivation.

Within the study, two hundred seventy-eight undergraduate students were experimented upon to determine which learning strategies are most used among students. All participants were selected based on their cumulative grade-point average as being the most successful and least successful participant during their senior year. The reason why they did is because undergraduate students are relatively more capable of selecting and using appropriate learning strategies compared to elementary and secondary students who have yet to master the skills required for the study. Undergraduate students are more advanced and higher educated which

should result in a higher metacognitive level. In addition, senior year students were thought to be more experienced in the use of various learning strategies and are more conscious of how to use them effectively and productively.

For this research purpose, a Likert scale questionnaire was administered to all students to determine if high performing students score higher in terms of using multiple learning strategies compared to low performing students. In addition, the researchers also wanted to investigate if gender played a significant role because prior research indicates that girls are more attuned to verbal learning and have a higher attention span to stay focused compared to boys. However, girls are very emotional and may deviate from using different learning strategies based on their mood and how they feel. In addition, According to Pomerantz, Altermatt, & Saxon, (2002) learning strategies might be used differently because girls are more concerned than boys are with pleasing adults and making them satisfied (i.e. parents, mentors and teachers). However, boys are usually less motivated to study a subject taught in school unless the material is interesting or is essentially beneficial to their needs and wants.

The results indicated that high performing students used more learning strategies compared to low performing students. In addition, all categories within the learning strategies had an increase for high performing students compared to low performing students. It is also reported that high

performing students had the highest rating in metacognition and rehearsals whereas low performing students had their highest rating in rehearsals and metacognition. These results would significantly strengthen McGroaty (1985) claim that that students who are more successful are not necessarily using a single learning strategy but rather a combination of them. These scores from Simsek and Balaban (2010) would support this hypothesis due to the compelling evidence presented in the research. In addition, according to the ANOVA results, it revealed a significant difference for the achievement levels of students $F(1,274)=23,68$; $p<.001$, in favor of high-achievers.

When comparing both gender, the results indicated that females have a higher score overall compared to their male counterpart. In addition, females scored significantly higher in every statistical category. There is a huge gap between rehearsal for males and females. This indicates that females are more inclined to practice repetition as their primary learning strategy. For males, their primary learning strategy is metacognition. The results also show that the men use learning strategies that reflect upon their individual experiences and abilities to generalize solutions to solve complex problems. Seffar (2015) research supports these results because he tries to discover the effects of learning strategies possibly enhancing vocabulary learning. The results were very similar to Simsek and Balban (2010) study because girls show higher frequency of using learning strategy than boys in

all five statistical categories. For future research, an investigation as to why the outcomes are this way should be examined so that teachers and researchers can help male students become more successful through the use of learning strategies.

Learning Strategy and Limitations

Although learning strategies can be beneficial, there are several flaws associated with it. First, if students display no intrinsic motivation then they maybe more attuned to avoidance performance goal orientation. These students are less inclined to seek the use of learning strategies and may show little to no motivation. It is also important to know that if students use advanced learning strategies before they are ready then it could lead to conflict. Students may blame one another if there is no academic accomplishment. Students may experience a sense of frustration and anger because there could be a debate on how a task should be accomplished. If this is the case then students may revert to a lower level learning stragety that they have already mastered and not use a more advanced learning strategy that the teacher intended to teach students. This may hinder both growth and psychological development (VandeWalle & Cummings, 1997). In addition, Simsek and Balban (2010) stated that there were several errors and limitations to the current study; therefore, a need for further research is necessary to understand the full effects and problems associated with

learning strageties.

First, new research should target elementary and secondary students on what their preferred learning strategies are based on the fact that those students are not as capable as university students in deciding and employing proper or high learning strategies. Secondly, the effects of various learning strategies should be examined under experimental conditions for both elementary and university students. The reason for this is to determine if any interactions among peers change or challenge current learning strategies being used in the classroom. Lastly, if students find that the current learning strategy is too difficult, the teacher should spend more time trying to help students master that strategy before they are ready for a more advanced one. Through practice and hard work, eventually students will overcome this challenge and find ways that will benefit them from using advanced learning strategies. Lastly, teachers should use learning strategies to assess and accommodate students based on their academic needs and distinguish what is most effective in the learning environment.

Mastery Goals

Concepts of Mastery Goals

Mastery goals is described by characteristics that students with strong learning goals and a desire to excel will be more intrinsically motivated if they seek and acquire new skills to master a situation. Students

will be more interested in furthering their understanding on a specific topic (Dweck, 1986). The idea of mastery goals can also emphasize how much a student cans improve in terms of understanding new material. As long as improvement is made, students are usually satisfied and will still be highly motivated with their progress and progression. On the other hand, students that are performance goal oriented will feel frustrated if no improvement or progression has been made and will have a higher tendency to quit if a task is too hard or if a task is unachievable to their standards (Kim & Kim, 2011). Because of this reason, it is important learning through enjoyment prevails through intrinsic motivation because students will strive towards development and growth of competence. They will also find new ways to become more ambitious in a learning task. Students will also be more knowledgeable which can in turn strengthen learning and promote the use of higher learning strategies to obtain academic outcomes.

Coutinho (2007) states that mastery goals can benefit students because if a student does a task with an inner desire to succeed then they will obtain success. Since a students are intrinsically motivated, it will generally hold a high perception of their abilities to perform positively through learning tasks. Miller & Meece (1997) research supports this claim because if students are intrinsically motivated with good metacognitive skills, then it will lead to higher academic success and better performance on a task. In addition, mastery goals also produce the most positive patterns

of interaction between motivational goals and achievement. Students who pursue mastery goals use effort-based cognitive strategies because it will increase one's competence through learning skills, mastering task, self-improvement and understanding new material with intrinsic enjoyment (Schunk et al., 2008).

When comparing the characteristics of mastery goals to performance goals, the positive effect is that students with high mastery goals will not be pressured to compete against their peers as a way to establish credibility and dominance over them. Instead, they will acquire knowledge through intrinsic purposes and study the materials more closely because of their enthusiasm and desire for learning. Students with high mastery goals will focus on learning the essential information to the best of their capability and mastery of the content with the help of others. Mastery goals also emphasize the role of effort in achievement and individual progress. Students pursuing mastery goals can and will seek hard and challenging task as long as they are interested. They will thrive under difficult situations and will still find the enjoyment of learning because of their positive behavior and ambition. Students will be very dedicated and encouraged to find new ways so that they can acquire the results that they desperately seek to obtain (Rawsthorne & Elliot, 1999).

Lastly, according to Elliot & McGregor, (1999) students who use mastery goal orientation view their teacher as a significant resource for their

educational purpose and as a guide for their positive academic development. On the other hand performance oriented students may not and instead do the exact opposite. When feedback is given, students can take it one of two ways. In a performance goal orientation, students will view feedback as an attack and react negatively because they are threatened that their lack of intelligence is being exploited; however, students in a mastery goal orientation will engage in feedback as a way to enhance and improve their current knowledge. Mastery goal students will also find ways to internalize advice and produce a better product (Furner & Gonzalez-DeHass, 2011).

According to Lepper, Greene & Nisbett (1973) students who use performance goal orientation tend to be more extrinsically motivated and will work for an external reward such as a trophy or for recognition but may not do a task to the best of their ability. The reason for this is because extrinsic oriented students just want to get the task done as soon as possible to receive the reward. According to the study, two groups were required to create a drawing. The first group was promised that they will receive a reward if the work was well done. The second group was not promised anything. Both groups were given both paper and pens. As for the results, the first group of students did significantly better than the second group. However, when phase 2 of the experiment started using the same participants, the group who had been given a reward for drawing previously spent significantly less time and effort as compared with the non-reward

group.

The children who had been rewarded previously had negative effects because they showed little interest in playing with the pens again and they did not want to create a drawing to the best of their ability like last time. However, the students, who had not been rewarded, continued to play with the pens and still drew to the best of their ability. As a result performance goals influenced motivation levels and had a positive effect in the short term but in the long term, the results were negative and the group with no external reward performed the better.

To understand how students will react, it is important for teachers to constantly engage students with follow up questions on their previous assignments. This will help teachers validate how motivated students are and their reasons for feeling that way. Teachers will be able to develop better learning materials that will accommodate students more effectively. This is also important because it will be useful to determine the student's level of interest and their willingness with both the teacher and their peers (Grant & Dwek 2003).

Mastery Goals and Effort

Effort and mastery goal orientations can influence academic achievement and help students become a stronger academic performer. According to Li (2012), effort is the ability to earnestly and strenuously use

exertion of the mind or one's strength to achieve positive results. This is significant because without effort then there would be very low mastery goals amongst students. If effort is present then students will try harder and to persevere through resiliency if there is a setback. Students will be able to quickly recover emotionally in the event that failure does occur. Effort and resilience are vital because it help students by providing the aptness that an individual can and will maintain, improve and recover mentally following stressful events (Neill and Dias, 2001).

When students fail at a task through mastery goals and do not at first achieve success, they will usually find solution-oriented ways to improve upon their past failures through effort so that they can increase optimism and find positive results for the future. Students will strive to be the best that they can be and also do their best even during times of adversity because they will maximize opportunities for learning and use learning strategies to promote comprehension and reading achievement. This is important because without effort then students would give up and not care (Elliot et al., 1988).

There are several ways to overcome challenges through effort and bounce back stronger with higher mastery goals. If students find a reason that provides meaning and usefulness to the subject that they are learning, then it will draw out creative learning goals and new ways of thinking to succeed even if a task is challenging. Students who use mastery goal orientation and have adopted ways to learn intrinsically are found to engage

in deeper and more self-regulated learning. This in turn strengthened mastery goals and academic performance. In addition, it can also help create resilience in the face of challenge or setbacks (Ames et al., 1992). With effort, students will build resilience and resistance to a challenging task and will likely enhance the use of learning strategies because students will not be easily fazed when faced with hardship due to their intrinsic motivation.

Mastery Goals and Collaborative Learning Environment

In the learning environment, students may be required to work on an intrinsically enjoyable task with other group members. Should all the members have the same values and interest then it can ultimately increase mastery goal orientation. This is significant because if students are working together in small groups for the purpose of achieving a common goal then collaborative learning can be efficient because students can learn from one another and find common ground to help strengthen the learning environment to help not only themselves but other group members to as well (Srinivas, 2011). Over the years, the need for society to think and work together on issues pertaining to critical task has increased and results have indicated that people who work together successfully can accomplish more in a shorter amount of time to achieve a common goal (Austin, J. E., 2000; Welch, M., 1998) This is important because the emphasis of achieving a task is shifting away from individual efforts to group collaboration so that people

can build a stronger relationship to complete an assignment (Leonard, P. E. & Leonard, L. J., 2001).

There are numerous benefits when students are forced to work together in a collaborative learning environment because it can increase mastery goals. According to Schwartz, Black and Strange (1991) students working together are more engaged in the learning process; therefore, they are able to think more critically and find solutions for themselves rather than listen to a teacher passively. Mastery goals can be increased because students are using a more hands on approach to learn new skills and improve their understanding through group work. Students who are working together in groups rather than individually develop higher interpersonal skills such as communication and interaction with peers. In addition, students will also increase their interpersonal skills which can help them effectively portray information and express how they feel through verbal and non-verbal communication. These skills acquired from group learning can also carry into the future in terms of their professional and personal lives both inside and outside the classroom.

Johnson (1971) research strongly supports group work because when students work together, the process is beneficial to everyone in the group. There is always one student that's discussing the problem while the other students are listening attentively and analyzing new ways to unravel a problem to a solution. Both parties are developing valuable problem solving

skills by discussing the issue, receiving feedback and formulating an explanation to solve the problem as a group.

According to (Cooper, et al., 1995), another positive element in collaborative learning is that the interaction amongst peers is continuously present for students that are engaged in a group discussion. Teachers are able to observe and assess individual student's thinking skills who are actively involved in the learning process and approach to learning. These students are more likely to become dedicated to learning and may make more of an effort to attend school and do their best (Austin, 1977). When an environment that involves high interactions amongst students is present, it will increase participation, motivation, dedication and enthusiasm (Garibaldi 1976). Unlike lecture classes, students may become disengaged and not carefully listen to what the teacher is discussing because of boredom or lack of interest. Also, students may not take well developed notes because of the lack of attentiveness and awareness during a lecture (Burns, 1985).

According to Shin, Yeon, Lee, Chung, & Kim, M. (2011) Extensive research has proven that students with a sense of belonging are more likely to demonstrate greater positive learning behavior and satisfaction because students experience the emotional warmth and support in relationship to teachers, peers and parents that influence academic performance. This is significant because if students feel like they are supported and have good learning experience then they will be able increase mastery goals. Students

will feel that the learning environment will help them succeed in their task based on their academic goals and mastery goal orientation may increase significantly.

Lastly, the effects of collaborative learning may be diminished if students are working together and learns solely for an extrinsic reward and not for intrinsic purposes. The side effects could lead to a decrease in intrinsic motivation over time and students may not perceive mastery goals to be as high as they were. This result is likely to occur when an individual or a group of people regard reward as a means to an end for participating in an activity. At first this could be very motivating and tempting; however, over time the effects may wear off if there is a lack of success or if students lose interest in the reward. The means to a relationship between reward and activity also plays a crucial role in determining the level of motivation student's posses (Choi, 1996).

Mastery Goals and Academic Outcomes

According to Bloom (1976) academic outcomes of mastery goals are mainly related to the learner's academic self-efficacy, effort, confidence and a positive learning attitude. Bloom acknowledges that a learner would start to believe in themselves when adequately faced with difficult challenges. If students have a high level of motivation for learning and skill to achieve success then they will have a higher chance of obtaining their goal. Students

will also be in a better mental state and will feel less frustrated because they will want to do a task for enjoyment which is not forced upon them by an adult. Lastly, it can help students develop a lifelong interest in learning and intrinsic motivation. Christenson Reschly & Wylie (2012) research supports the above statements made by Bloom (1976) because through entity theory of intelligence, students will believe that their intellectual ability is fixed. Additional beliefs about intelligence are also associated with a list of adaptive outcomes that includes self-regulated learning, academic achievement and the use of remedial strategies especially at a time when self-esteem is low or is at their lowest or if it's being threatened.

An experiment conducted by Patrick (2004) further investigates the effects of mastery goals with academic outcomes. Mixed methods was used by collecting survey data and qualitative analysis to identify two classrooms perceived by students as having high and low emphasis on mastery goals. The academic outcome resulted that the classroom with high mastery goals had a firm understanding of the content because students were able to find better ways to self improve by viewing mistakes as a vital part of the learning process. Even more astounding is that school teachers showed concern towards students that are struggling and offered assistance to help them through after school office hours by providing the students help so that they can master a task. However, in the low mastery-focused environment, the academic outcome resulted in students focusing more on obtaining the

correct answers and doing their best to not embarrass themselves in front of their peers. In addition, students were unsatisfied because students felt that the learning environment became a place of competition. In order form these students to maintain face high scores were needed to impress others.

According to Schunk et al., (2010) an explanation as to why these academic outcomes resulted in certain behavioral changes was because students with low mastery goals will strive to appear smarter than others, do better than others, avoid appearing to look stupid and to be competitive so that others can acknowledge them for their competency. Although Patrick (2004) research showed strong correlation between mastery goals and academic outcomes, it fails to identify learning strategies that the teacher may have used to enhance learning outcomes, intrinsic motivation and metacognition. There is little evidence presented to determine the reliability if the students retained knowledge effectively after it was taught because there was no follow up procedure or data to strengthen their claim.

To further investigate the relationship between mastery goals and academic outcomes, a qualitative study conducted by Ames & Archer (1988). One-hundred and sixty high school students participated by taking a questionnaire that measures goal orientation, task challenge, attitude towards class and causal attribution. All participants that participated in the study scored in the 80th percentile or higher on Secondary School Admission Test. The results indicate that there was a strong relationship

between mastery goals and academic outcomes. High attitude towards the class also played a huge factor because students in the mastery goal setting scored higher whereas performance goal scored lower. It is safe to conclude that if there is no positive attitude then a negative correlation will be present towards academic outcomes and effort portrayed by the student. However, when students perceive mastery goals positively then their attitude towards learning, effort and task are greatly enhanced. In addition, students in mastery goals group will see their teacher as a vital resource as part of their educational learning process to further their task achievement and success.

According to Dwek (1998) this can be explained because mastery achievement goals are related to patterns and consequences associated with theoretical presumptions and a belief generated by the learner's emotions either being positive or negative. This in turn demonstrates field-based evidence because if students have negative attitude then this may decrease academic outcomes and lower achievement levels. In addition, students that are extrinsically motivated by the use of performance goals resulted negatively to the use of learning strategies and therefore outcomes were negative. It displayed lower levels of attitude and self-perceptions of ability for students to perform a task (Ames & Archer, 1988).

Mastery Goals and Metacognition

According to Fountas and Pinnell (2000), metacognition is the

ability to think to a larger degree while you are thinking about your thoughts. During this process, students are examining what the brain is able to process. It is also a cognition that reflects knowledge about knowing. It includes knowledge about when and how to use particular strategy for learning purposes or for problem solving awareness and understanding one's own thought processes. Metacognition also refers to higher order thinking that involves control over the cognitive processes engaged in learning. This is significant because with strong Metacognition, students may enhance mastery goals and learning strategies because if they are able to examine what is being processed then they may achieve academic success and higher outcomes.

Coutinho (2008) research would support Fountas and Pinnell (2000) because after conducting an experimental research, she found out that mastery goals are indeed enhanced through higher levels of metacognition. Within her experiment one-hundred and nine undergraduate students at Midwestern University participated within the study. Participants age range from eighteen to forty years old. A survey was administered to determine the goal orientation, metacognitive, and demographics asking for college GPA to measure task achievement. According to the results, there was a positive linear relationship between mastery goals with metacognition. For performance goals, results were not as favorable. These numbers represent that students who have strong mastery goals also have strong metacognitive

skills which demonstrates that they can comprehend material faster and uses learning strategies to accomplish a task. In addition, there is also a strong matrix correlation between academic self-efficacy and metacognition that also enhances mastery goals.

However, with performance goals, it may not result in positive academic outcomes because students are more willing to work for an external reward. The relationship between performance goals and academic outcomes is not as strong as compared to mastery goals. For example, mastery goals had a positive correlation with task achievement whereas performance goals did not correlate as well with task achievement.

Mastery Goals Limitations

Although mastery goals can increase student's task achievement, it may be ineffective if students do not like their classmates while working together on a project. According to Shin, Lee, Chung & Kim (2011) Extensive research has proven that students with a sense of belonging are more likely to demonstrate greater positive learning behavior and satisfaction because students experience the emotional warmth and support in relationship to teachers, peers and parents that influence academic performance. Roseth et al., (2008) research supports collaborative learning because it requires two or more people to work on a task with close communication; however, without positive warmth between group members,

collaborative work can be ineffective and may potentially damage relationships further.

Warmth and learning also plays a critical role in collaborative learning environment; therefore, teachers should find ways to enhance trust amongst classmates and students so that there could be a stronger sense of connectedness. If peers and teachers do not have a strong relationship then students may disregard feedback and view it as a negative attack rather than constructive criticism to help them improve. Students may also perceive their teacher as an enemy rather than as a supporter. This is especially prevalent Asia or any other culture with high confucian based norms (Heine, 2001).

Another critical issue with mastery goals is that students with high mastery goals show greater persistence following failure. However, if students experience low self-esteem and academic self-efficacy toward an academic task then it can hinder confidence and their ability despite being intrinsically motivated while learning. If this happens, students might resort to performance-avoidance goals, rather than mastery goals. The reason for this is because they might be tempted to secure normative validation for their efforts and to protect their egos or feelings (Peixoto and Almeida, 2010).

Niiya & Crocker (2007) research supports this statement because students who based their self-esteem on academic competence reported

lower self-esteem following failure than following success if low mastery goals is presented. However, if the effect of success and failure was eliminated when students had high mastery goals then the exact inverse would occur On the other hand, if academic self-efficacy is low even with high mastery goals then students will not have confidence in their ability to achieve the task.

Lastly, according to Malone and Lepper (1987) too much intrinsic motivation could be negative. Although it is important, to design activities that will help students strive to develop learning through mastery goals. Unfortunately many traditional paradigms suggest that most students find learning boring and a need of some sort of balance between extrinsic motivation and intrinsic motivation is needed to maximize effort. Therefore, if teachers can find the medium, which may be challenging, it will increase a student's desire to do better. In addition, it is also important to ask the students directly if one type of motivation is lacking or not so that the teacher can implement new techniques to make learning both enjoyable and fun so that students can feel included.

Academic Self-Efficacy

Concepts and Characteristics Academic Self-Efficacy

According to Pintrich and De Groot (1999) academic self-efficacy is the influence of momentous cognitive processes in the locus that influences

cognitive strategy and metacogntion. Academic self-efficacy plays a huge role in the cognitive engagement because if students display confidence and is motivated to accomplish a task then it could lead to an increase usage of learning strategies. Newly implemented designs can also be used to lay the foundations of a situational scenario to that may lead to higher academic achievement. These are skills necessary for students to become successful in the classroom; however, it should also be noted that students should not base their current level of academic self-efficacy from a previous task and the same level for a new task. Perceptions between prior achievement and current achievement can deviate from the perceptions made between prior attainments and production in the learning environment.

Academic Self-Efficacy and Academic Performance

According to Bong (1997) academic self-efficacy is the student's ability to engage and complete an academic task related to the best of their ability. It is the notion that students will be attempt to achieve a desired result based on their academic goals. For example, some students may want to achieve a satisfactory grade or excel academically in a specific subject such as reading comprehension or academic achievement. In addition, students with high academic self-efficacy will have the ability to perform at a higher level because if they set higher expectations for the future then it can motivate them to pursue their dreams. Higher academic self-efficacy

helps students realize that with a higher degree of self-confidence, it is recommended that they take higher risk and not give up to achieve academic success (Ormrod, 2008).

Pajares and Schunk, (2001) research would support the above mentioned research because students with high academic self-efficacy will find better ways to develop skills and knowledge necessary to execute a task successfully. Another positive attribute is that students will create certain levels of expectations before they begin the long grueling process of learning a specific subject and will feel a great deal of accomplishment if the task is achieved at their desired level. Students might be more willing to experiment with new ideas and take greater chances even if it leads to failure because the reward is worth the investment. Through intrinsic motivation, it is the main objective to achieve academic outcomes. High academic self-efficacy may develop higher amount of knowledge and increase efforts to overcome failures so that they can build resistance and not give up (Pajares & Schunk, 2001).

It has been proven by many researchers that students who believe that they can successfully complete a task with high academic self-efficacy will outperform those with low levels of academic self-efficacy and self-esteem. In addition, when faced with a difficult task, students with high academic self-efficacy will face the challenge and view it as something that must be learned and mastered since there is an inner desire to succeed.

Students will physically and mentally rehearse what they have learned to perfect a task and find ways to fix mistakes during temporary setbacks (Bandura, 1993).

For example, in the United States, several middle school students have the ability to choose from many electives after core courses are completed. Should students attend a dance class with no prior experience, then it should be noted that those with higher academic self-efficacy are expected to outperform those student with low academic self-efficacy because they will have more self-confidence and desire to improve their talents and abilities. High academic self-efficacy students will spend more time trying to improve upon their current level of skill by practicing harder. In addition, they will also seek more assistance to better themselves by requesting help from a professional with immense experience in their respective career field of study.

Breso, Schaufeli and Salanova (2011) conducted research to see the effects between academic self-efficacy associated with performance. The reason for this is because in the field of educational psychology, it is important to find new ways as to how performance can be improved. Previous studies demonstrated that past achievement, examination results and academic self-efficacy can hinder a student's future performance. These variables can also determine one's cognitive behavior through well-being and emotional health (Eskew & Faley, 1988).

Bandura's (1997) research supports this claim because academic self-efficacy can be promoted and strengthened if students have the motivation and the willingness to learn beyond their scope of knowledge. Students can perfect academic self-efficacy through vicarious learning, social persuasion, and mastery of experience. In addition, many students have established the effectiveness of intervention programs designed to enhance academic self-efficacy in an academic context to help students succeed (Breso et al., 2011).

Psychological state is one of the most important sources for academic self-efficacy beliefs apart from mastery goal orientation (Breso et al., 2011). Students who experience negative thoughts or anxiety will usually perform not as well because they may question their own talents and abilities. For example, if students believe that they are terrible at reading then that belief may eventually become true because negative fear or lack of confidence can hinder performance. What students believe and think may eventually lead to the negative belief that will become true because of what they perceive to be undeniable. This will lead to poor performance that can generate negative academic self-efficacy. On the other hand, students who generate healthy thoughts about themselves will generally do better and expect higher expectations. High academic self-efficacy can be associated with greater performance because if students display confidence in their ability and the willingness to learn from mistakes through intrinsic

motivation then greater development will occur.

Within Breso et al., (2011) study a total of seventy-seven students enrolled in the workshop. Thirty-three participated in the individual intervention program. Twenty-three participated in the stressed control group. Lastly, twenty-seven participated in the healthy control group. The students enrolled in the intervention program were subjected to four two hour sessions every week. The purpose is to help students reduce cognitive problems for anxiety. In this group, students were treated by a professional doctor that helped students improve their psychological state so they can control their emotions while testing. According to Barlow (2002) a cognitive behavioral therapy is most efficient for treating anxiety disorders; therefore, a professional that specialized in this field with six or more years of experience was included in the study.

Students were able to put aside their negative feelings of incompetence so that they can solely focus on exams and what they can do to improve results. All students from the three groups were required to take a academic self-efficacy survey based on (Midgley et al., 2000) questionnaires because it best defines student's beliefs concerning their future capacity to achieve adequate levels of academic performance. The researchers also collected questions based on exhaustion, cynicism, vigor and dedication. The purpose was to see if these variables can influence academic performance.

The results indicated that the healthy control group received favorable outcomes because academic self-efficacy was higher and also reported that they were more confident. In addition, their anxiety traits were also much lower which contributed to higher performance. However, what was interesting was that the stressed group scored slightly higher for academic self-efficacy the experimental group. These results were very compelling because it was hypothesized that with higher academic self-efficacy, performance would be increase. However, it should also be noted that the intervened group had a higher exhaustion and cynicism score than the stressed group that may have influenced the result of this experiment; therefore, for future studies it is recommended to create an interaction effect between two or more variables to see if it influences the results of academic self-efficacy

Academic Self-Efficacy and Mastery Goals

According to Middleton & Midgley (1998), researchers have consistently found that students who use mastery goal orientation to accomplish a task tend to have a higher academic self-efficacy rating. The reason for this is because they are more attentive in class and process information in a meaningful way. Students are also attuned to learning a new topic if it's important to them; therefore, they will master it because through more enjoyment and may retain valuable knowledge more easily.

Students will also see cognitive improvement overtime and formulate new outcomes for academic learning and find new ways to improve their current skill level and Metacognition levels.

According to Rotter (1966) students with high academic self-efficacy will also increase their capabilities to perform harder task even if it seems impossible at first. Students will have more supremacy of their locus of control because they are able to influence timelines and events from happening and will have the power to choose between classes that are more beneficial and helpful to motivate them in an intrinsic way. Students can also control their own life and environmental factors because of their actions to resist temptation that may damage or undermine academic achievement.

Hsieh, Sullivan and Guerra (2007) would support Middleton & Midgley (1998) claim because mastery goals and academic self-efficacy are the main factors as to why students successfully engage in an academic task. When students are faced with tough demands, they will do everything within their power to promote task achievement. In addition, students with high academic self-efficacy will associate themselves with mastery goals because it may enhance positive patterns of learning, academic achievement, and control of neuroticism. Those students with high academic self-efficacy can quickly develop and adapt to mastery goal orientation. It is important for students to realize that the necessary abilities and skills required to perform an academic task to the best of their ability is significant. However

it is also important that a strong belief is present so that students can justify the accomplishment. Through hard work and effort students will set individual goals that may influence actions, reactions, or motivation for learning (Shim & Ryan, 2005).

Al-Harthy and Was (2010) conducted research to see the effects between academic self-efficacy mastery goals, performance approach and performance avoidance goals. Their hypothesis was that academic self-efficacy will have a strong positive relationship with mastery goals. If students are confident in their own abilities to perform a task then it will result in higher intrinsic motivation. The reason for this is because academic self-efficacy can have a direct impact on academic achievement in conjunction with positive motivational variables such as achievement, mastery goals, learning strategies and effort (Bartels & Jackson, 2009 & Bouffard-Bouchard, Parent, & Larivee, 1991).

Zimmerman (2000) supports this research because when students are provided with a sense of urgency then they will find new ways to self motivate themselves so that they may enhance academic self-efficacy and confidence. Students will then be able to better process and strive for new ways to increase goal setting, self-monitoring, self-evaluation and the usage of single or multiple learning strategies depending on their circumstances. In addition, confidence may be increased and students will find new ways to excel at an academic task. If academic self-efficacy is high then students

may also demonstrates greater level of intrinsic motivation and mastery goal orientation through their strong willingness to try harder and to achieve their desired goals. An example would be receiving a better grade on a test or learning the education material to the best of their ability (Bouffard-Bouchard, Parent, & Larivce, 1991; Pintrich & De Groot, 1990; Wolters et al., 1996; Zimmerman, 2000).

Within the study, two hundred and sixty-five undergraduate students enrolled in educational psychology at Midwestern State University participated in the experiment. The data was collected from the start of the fall semester of 2003 and ended in the spring of 2006. Females represent 74% of the total participants while the males represented 26%. All participants were required to answer 51 MSLQ questions. These questions were divided into two sections which were motivation and learning strategy. The questions included parts from academic self-efficacy, task value, metacognitive self-regulation, learning strategy, resource management strategies, achievement goal orientation and course total score. After students answered all the questions, a correlations matrix was used to determine the reliability between the variables to determine the contributions associated with it.

The results indicated that academic self-efficacy for learning had a strong relationship between effort and task-value. This strengthens Pajares and Schunk (2001) research because as mentioned above, students with high

academic self-efficacy will develop knowledge faster and increase effort. Mastery goals and academic self-efficacy are main factors as to why students successfully engage in an academic task. It was expected that mastery goals and academic self-efficacy would have the highest positive relationship associated with this research experiment (Pajares & Schunk, 2001).

Lastly, of all the goal orientations, only performance-avoidance was correlated with a negative score with academic self-efficacy. The analysis provides insight to the relationships in the model because students who have high academic self-efficacy will not have high performance-avoidance score. In fact, it is counterintuitive because academic self-efficacy should enhance a desire for students to want to achieve their goal by taking risk and working hard to achieve their outcomes. As discussed earlier, students with performance-avoidance goals tend to have lower academic self-efficacy and have less challenge-seeking behaviors and intrinsic value for learning (Elliot, 1999).

Academic Self-Efficacy and Academic Challenge

According to Graham & Weiner (1996), students often take on more challenging tasks if they have high academic self-efficacy. An academic challenge is a student's willingness to work harder to meet standards or expectations set forth by a teacher or instructor. Students with high

academic self-efficacy are expected to put in more effort, show greater persistence and use learning strategies to overcome challenges. It also helps with synthesizing ideas for students to apply theories and concepts to practical problems so that they can find a solution. When students believe in themselves, they may also be more likely to develop meaningful learning which can make academic challenge intrinsically motivating and enjoyable through their willingness to overcome challenges (Gallini & Moely, 2003).

Students with low academic self-efficacy that question their abilities or capacities may avoid the learning task and opportunities to seek help. The reason for this is because students with performance-avoidance goals tend to have lower academic self-efficacy and have less challenge-seeking behaviors and intrinsic value for learning. This is a problem because if students feel that they are unable to achieve a task then this can hamper academic growth (Elliot, 1999). It is important for future researchers to understand the student's beliefs about why they feel they cannot do a task so that improvement can be made by constructing goals that will gradually build confidence.

The problem is that should a student with low academic self-efficacy fail, the effects can be up to three times harder than it is to succeed (Boshier, 1972). Instructors should create small but challenging tasks that are not way beyond the student's ability but just enough so that they feel challenged. Once the task is complete, it is important for the instructor to help the

students maintain that academic self-efficacy and build upon their current level to further develop student's confidence and academic self-efficacy to predict motivation and academic achievement (Graham & Weiner, 1996).

Academic Self-Efficacy and Eagerness

According to D'Alonzo & Stevenson (2004) academic self-efficacy can improve student's eagerness. The reason is because students with high academic self-efficacy will have more confidence in their ability to participate and engage in class debates. Students that are tardy or fail to attend a certain amount of class because of lack academic self-efficacy and eagerness may face profound consequences such as after school seminars, suspension or even expulsion. In addition, students may have to retake the same course again next year because of the federal mandated law that requires each student to spend a certain amount of time in each classroom to receive credit. Failure to do so may require the student to repeat the same class until both the state and school's requirements are met.

Enea & Dafinoiu (2009) argue that when students skip class, expulsion or punishment serve as an example for other students that they should not do it. However, if the majority of the class is skipping, then it serves as a failure to both the school and the instructor for not finding new creative, alternative and supplementary ways to increase student's attendance. A good way to fix this problem is to enhance student's eagerness

and academic self-efficacy by finding new ways to raise motivation levels so that students will not skip as much and can find new ways to increase learning.

Lastly, Eastwood (1989) states that not only is the students responsible for being absent but also the parents may face consequences as well depending on the state. In several states, the parents of the child that skipped class may be liable for jail time if significant improvement is not made through documented evidence recorded by the faculty of the school. As harsh as these penalties are, it is important to note that students under the age of eighteen are still classified as minors and parents are responsibility to encourage their student to attend class and find the eagerness for their child to be motivated. However, Pascopella (2003) states that sending the parents and student to jail or any form of detention is not a very productive idea because not only does it cost a lot of taxpayers' dollars and it can also cause traumatizing effects for families. This can lead to dramatic problems causing students to further distance themselves from school rather than encouraging them to come back.

Academic Self-Efficacy and Social Learning Theory

According to Bandura, (1977) social learning theory is a cognitive process that student can learn through direct or indirect observation that takes place within a social context. Learning can occur by observing

positive behavior or the consequences by other students. Social learning theory has been useful in explaining how people learn new information through observational learning and the immediate reaction that happens through a person's emotions after the act has been committed (Sincero, 2011). This is significant because if students are able to see how a task is done by observing other students first then it may increase academic self-efficacy. This will allow students to not be as nervous when it is their turn. They will have an idea of what they need to do and how it's done through the observation of others that performed the same task before them.

For example, if students are required to do an impromptu presentation, the last student will be able to learn a lot from the first few students that went before him/her by observing how the presentation should be done. In addition, the last students will have the ability to analyze what mistakes were made by previous students through constructive feedback given from teachers and classmates so that he/she will not to repeat the same error. This is a huge advantage for the last student because that student can utilize a variety of strategies designed to make a presentation more prominent at a higher quality than his/her previous counterparts. Should one of the prior students make a mistake and gets punished for it by the teacher, then it will be an example to other students not follows the same pattern.

Academic Self-Efficacy Limitations

The main issue with academic self-efficacy is that student may end up underestimating the task. Students may believe that their skill set and ability is adequate enough to handle such pressures when in fact they could be wrong (Moores, 2009). This is significant because students with high academic self-efficacy may have too much overconfidence in their aptitude. This in turn can lead to degradation in performance of a particular task. Should students demonstrate high levels of academic self-efficacy it can also lead to a false sense of belief and overvaluation of their current skills. Overconfidence can lead to employing wrong learning strategies, mistakes, errors, and constructive feedback (Clark, 2001). In addition, students that are overconfident in their abilities may let their guard down which may lower effort and attention being devoted to a task (Stone, 1994).

According to Manderlink and Harackiewicz, (1984), students may have positive or negative effects on academic self-efficacy depending on the context and environment. Verbal and tangible rewards may also have counteractive effects as well because if one particular reward is used too much then students will expect it next time or even want a greater reward. This is significant because if students are overly praised for doing something well, then they will oftentimes accept it without any strong meaning behind it. However, if praise is used rarely only after a student accomplishes a hard task, even through the teacher believed that the student

will most likely fail but found a way to find success, then that praise will have more meaning to the student. Lastly, the teacher should not constantly shower students with gifts to boost academic self-efficacy too much because it will promote extrinsic and not intrinsic motivation (i.e. candy, stickers, toys and etc). However, if that element is gone then students will oftentimes give up and not work as hard because here is no reward. It is important to find a balance to maximize student's eagerness so that they will be motivated to the fullest to learn.

Research Hypothesis

Based on the theoretical literature review, concept mapping will increase goal orientation if there is high academic self-efficacy because students will show a tendency to work harder and have more faith in their abilities to achieve greater desired results. However, if academic self-efficacy is weak then there is a possibility that concept mapping may not be as effective and task achievement will be diminished.

1. Does concept mapping promote mastery goal and academic achievement?

1-1. Participants who use concept mapping will increase mastery goal orientation and academic achievement.

1-2. Participants who do not use concept mapping will not increase mastery goal orientation and academic achievement.

2. Do the effects of self-efficacy enhance concept mapping strategy on mastery goal orientation and academic achievement?

2-1. Participants who have high self-efficacy will increase mastery goal orientation and academic achievement after learning concept mapping strategies.

2-2. Participants who do not have high self-efficacy will not increase mastery goal orientation and academic achievement after learning concept mapping strategies.

METHOD

The current study was designed to investigate the relationship between concept mapping, mastery goals, self-efficacy and reading comprehension achievement. The experimental group was required to fill out mastery, performance and self-efficacy questionnaires. Afterwards, students took the Pre-TOSEL jr. test. Students then learned how to construct a concept map in a collaborative learning environment. A post-TOSEL jr. reading test was administered. Lastly students were required to re-answerer questionnaires on mastery, performance and self-efficacy. On the other hand, the control group was not required to create a concept map nor were they taught how to create one. Instead they were required to take notes to the best of their ability.

Participants

A total of forty two (n=42) elementary students in 5^{th} grade students participated in the study. All participants were from Ilshin Elementary School in South Korea and the study took place on Sept 16, 2015 at 10:30am. Participants were recruited by teachers in every 5th grade class. Flyers were produced to promote the study and distributed to all 5th grade students. To ensure that CITI policy was in effect, all students were required to return a signed letter of consent. Since students are under the age of eighteen, students were required to get their parents signature and approval.

Those students who did not bring back a letter of consent did not participate in the study and was dismissed.

Table 1. Participants Gender and Conditions

	Treatment Group Structure		Control Group Structure		Total Participants	
Gender	*n*	*%*	*n*	*%*	*n*	*%*
Male	12	60	11	50	23	54.7
Female	8	40	11	50	19	45.2
Total	22	100	20	100	42	100

Procedures

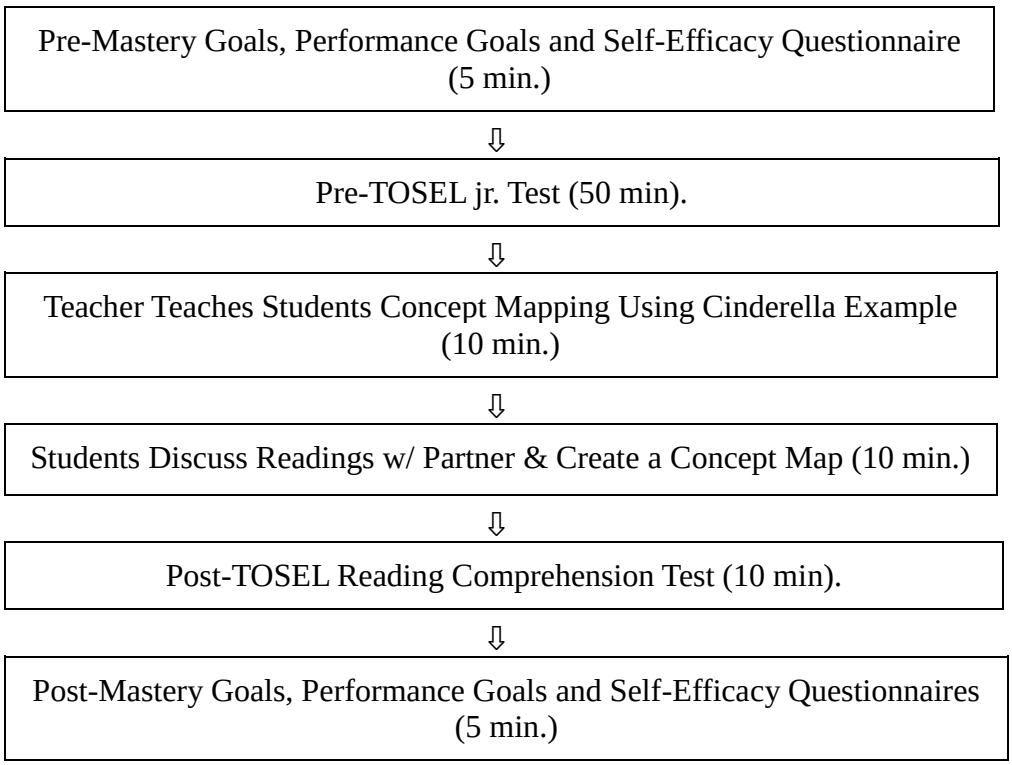
In the beginning, participants were randomly assigned to one of two groups. The experimental group had concept mapping training and the control group did not. Before the study began, all students were given (2 min.) to fill out pre-questionnaires with questions based on mastery goals (Midgley et al., 2000) performance goals (Boyle & Klimoski, 1995) and academic self-efficacy (Muris, 2001). Questionnaires were based on a five-point Likert scale (i.e. 1. Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree and 5 Strongly Agree). Afterwards, all students were required take a pre-TOSEL jr. test “Test of the Skills in the English Language Junior” (50 min.) to determine their pre-reading comprehension

achievement. Then all students were required to take a post-TOSEL jr. test of 3 reading passages to determine post-reading comprehension achievement (10 min). Lastly, students were required to retake the same post questionnaires on mastery goals, performance goals and academic self-efficacy again. All questions and test materials were reviewed by the head of the education department and senior professor that majored in Educational Psychology at Seoul National University.

Experimental Group

After the pre-questionnaires (mastery, performance and academic self-efficacy) and pre-TOSEL jr. test was completed, the experimental group (n=22) was required to learn how to create a concept map. The researcher used a Cinderella reading passage as an example to show students how a concept map can be created (10 min). Students were then required to work in a collaborative learning environment in groups of two to create a concept map for three different reading passages using the post-TOSEL jr. test (10 min). When the time was up, students were required to complete the post-TOSEL jr. test and answer all questions (10 min). Lastly, students were required to answer post-questionnaires on mastery, performance and academic self-efficacy again (5 min).

Figure 1. Timeline for Experimental Group

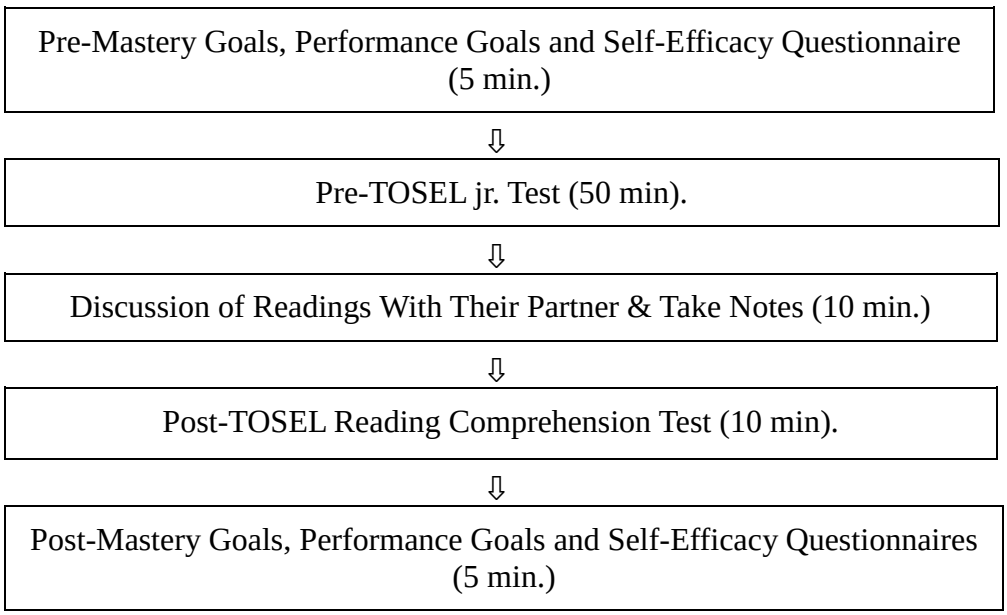


Control Group

After the pre-questionnaires (mastery, performance and self-efficacy) and pre-TOSEL jr. was completed, the control group (n=20) was required to take notes using the reading materials from the post-TOSEL jr. test. Students were required to work in a collaborative learning environment with a partner in groups of two (10 min). When the time was up, students were required to complete the post-TOSEL jr. test (10 min). Lastly, students were required to answer post-questionnaires on mastery, performance and academic self-

efficacy again (5 min).

Figure 2. Timeline for Control Group



To entice participants to do well, the researcher and the Korean co-teacher stayed inside the classroom during the experiment to ensure that all students do their best. After the experiment was over, the students were given a pack of Pokémon cards to congratulate them on their efforts.

Materials

The TOSEL jr. test was selected for this experiment because it was a test designed for Korean 5th grade students to determine their English test level. This test was validated, created and administered by the Educational

Broadcasting System (EBS) used as an alternative to the TOEIC and TOEFL test. The reason for this is because there was huge support by the Korean government due to the fact that no royalties had to be paid to foreign countries. Since the TOSEL jr. test is a domestic certification test, it is cheaper and more affordable (i.e. to take the TOSEL jr. test it cost one tenth of the amount compared to the TOEFL test). The TOSEL jr. test is broken down into two sections. The first portion consists of listening and the second is reading comprehension. There are 30 possible points awarded in the first portion and another 30 for the second. There are of 60 points in total with a total percentage score of 100%. For this experiment, the decision to use this test was determined after a professor that majored in educational psychology approved of the test.

The TOSEL jr. test results are broken down in 10 categories based on how well a student performs and their knowledge of English. The 1st 급 represents all the students who scored in the top 10% of the nation. These students score an average of 95-100% on the test. However, the 10급 represents the bottom 90% in the nation. These students score an average of 10-15% on the test. From the data provided below, the average 급 nationwide is 5^{th}. These students score an average of 50-59% on the test. Any scores that that is higher than this threshold is above average.

Measures

Students responded to items on a 5-point Likert scale with 1 representing strongly disagree to 5 strongly agree. All questionnaires had been translated in Korean and validated by my senior professor that majored in Educational Psychology at Seoul National University. Mastery Goals (Midgley et al., 2000) Performance Goals (Boyle & Klimoski, 1995) and Self-Efficacy (Muris, 2001)

Mastery Goals was used to assess participant's current level or intrinsic motivation before and after the experiment. The five questions in the mastery goals subscale of Patterns of Adaptive Learning Scales (PALS): Midgley et al., 2000). The following are samples of the scale: "It is important to me that I learn a lot of new concepts this year" and "One of my goals in class is to learn as much as I can."

Performance Goals was used to determine student's extrinsic motivation levels before and after the experiment. The scale was created and validated by (Boyle & Klimoski, 1995). Five questions included following examples of "I am eager to prove to others how good I am at this task" and "I wonder how my score on the next trial will compare with people's scores."

Academic Self-Efficacy was used to measures student's confidence in their ability to execute and perform in order to solve a problem or accomplish a task. The scale was created and validated by (Muris, 2001).

Seven questions included following examples of "How well do you succeed in passing a test" and "How well do you succeed in understanding all subjects in school?"

Cronbach's Alpha was used to determine the internal reliability of 'Mastery goals (i.e."It is important to me that I learn a lot of new concepts this year, pre *a* =.80 and post .90 in the scale),' 'Performance Goals (i.e. "I am eager to prove to others how good I am at this task," pre *a*=.81 and post *a*=.81 in the scale)' and 'Academic self-efficacy (i.e. "How well do you pay attention during every class?" pre *a*=.92 and post *a*=.93). All questions were on a 5 point likert-scale. For this study, the English version of all questions were translated into Korean and reviewed by a Korean professor that majored in Educational Psychology.

Data Analysis

SPSS 18 (IBM, Somer, NY, USA) and Microsoft EXCEL 2010 (Microsoft, Washington, USA) were used to determine the internal reliability of the data. Descriptive statistics was used on all variables to determine the minimum, maximum, mean, standard deviation and Cohen's d. In addition, the *n* value for all the participants were used to differentiate between the treatment and control groups. To determine does concept mapping promote mastery goal orientation and reading comprehension achievement and do the effects of self-efficacy enhance concept mapping

strategy on mastery goal orientation and reading comprehension achievement, ANOVA was used to determine any significant differences between three or more groups and multiple regression was used to predict the internal reliability by computing both the dependent and independent variables.

RESULTS

The results of the current study were presented in regards to concept mapping, mastery goal orientation and reading comprehension achievement. Specifically, the study pays close to see if the effects of concept mapping can increase mastery goals and reading comprehension achievement. Two classroom climates were carefully observed which were concept mapping and no concept mapping group. The sample consisted of 42 5th grade students. The mean Korean age was 11.95 years (*SD*=0.21). Males (54.7%, *n*=23) were more represented in the sample than were females (45.2%, *n*=19). All respondents were native Korean and their native language was Korean.

Descriptive Statistics

The statistical descriptions of variables for the experimental group included mean, standard deviation, minimum, maximum and Cohen's d was displayed below. The data shows pre-test (*M*=31.35, *SD*=9.54) post-test (*M*=8.05, *SD*=3.70) and (*d*=3.22), pre-performance (*M*=3.44, *SD*=0.69) post-performance (*M* =3.33, *SD*=0.70) and (*d*=1.10), pre-mastery (*M*=3.92, *SD*=0.65) post-mastery (*M*=4.21, *SD*=0.83) and (*d*=0.38) and lastly, pre-academic self-efficacy (*M*=3.68, *SD*=0.67) post-self efficacy (*M*=3.74, *SD*=0.61) and (*d*=0.09).

Table 2. Descriptive statistics (experimental group)

Variable	N	Minimum	Maximum	Mean	SD	Cohen's d
Pre-Test	22	16.00	52.00	31.35	9.54	
Post-Test	22	0.00	13.00	8.05	3.70	3.22
Pre-Performance	22	2.00	5.00	3.44	0.69	
Post-Performance	22	2.40	5.00	4.21	0.70	1.10
Pre-Mastery	22	3.00	5.00	3.92	0.65	
Post-Mastery	22	2.80	5.00	4.21	0.83	0.38
Pre-Academic Self-Efficacy	22	2.50	5.00	3.68	0.67	
Post-Academic Self-Efficacy	22	2.75	4.75	3.74	0.61	0.09

The statistical descriptions of variables for the control group included mean, standard deviation, minimum, maximum and Cohen's d was displayed below. The data shows pre-test (*M*=29.59, *SD*=9.70) post-test (*M*=7.82, *SD*=3.01) and (*d*=3.02), pre-performance (*M*=3.48, *SD*=0.93) post-performance (*M*=3.36, *SD*=1.00) and (*d*=0.12), pre-mastery (*M*=3.30, *SD*=0.93) post-mastery (*M*=3.21, *SD*=1.04) and (*d*=.0.09) and lastly, pre-academic self-efficacy (*M*=3.23, *SD*=1.12) post-self efficacy (*M*=3.15, *SD*=1.12) and (*d*=.07).

Table 3. Descriptive statistics (control group)

Variable	N	Minimum	Maximum	Mean	SD	Cohen's d
Pre-Test	22	14.00	50.00	29.59	9.70	
Post-Test	22	1.00	13.00	7.82	3.01	3.02
Pre-Performance	22	1.80	5.00	3.48	0.93	
Post-Performance	22	1.00	5.00	3.36	1.00	1.12
Pre-Mastery	22	1.80	4.60	3.30	0.93	
Post-Mastery	22	1.00	5.00	3.21	1.04	0.09
Pre-Academic Self-Efficacy	22	1.00	5.00	3.23	1.12	
Post-Academic Self-Efficacy	22	1.00	5.00	3.15	1.12	0.07

Correlation

A statistical correlation was conducted to analyze if a pair of variables are strongly related or not. Within the study, the correlation of variables included both the pre and post results in regards to mastery, performance, self-regulation and test scores. The data suggest that there are correlations amongst all the variables displayed in the graph. The data indicates that there is strong correlation between pre-mastery and post mastery of (r=.76, p<.01) which is the highest. In addition, pre-self efficacy and pre-mastery also correlated well with (r=.71, p<.01) but went down to (r=.66, p<.01) in the post-test.

Table 3. Correlations among variables

Measure	1	2	3	4	5	6	7	8
1. Pre-Test	1							
2. Pre-Mastery	0.29	1						
3. Pre-Performance	0.2	0.51**	1					
4. Post-Test	0.54**	0.23	0.28	1				
5. Post-Mastery	0.15	0.76**	0.35*	0.22	1			
6. Post-Performance	0.34	0.38*	0.56**	0.28	0.33*	1		
7. Pre-Self Efficacy	0.35*	0.7**	0.47**	0.36*	0.62**	0.49**	1	
8. Post-Self Efficacy	0.26	0.7**	0.29	0.29	0.66**	0.5**	0.84**	1

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

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

Research Question 1

To examine the effects of whether concept mapping and mastery goals orientation increased reading comprehension achievement, the first part of question one is “does concept mapping enhance mastery goals

orientation." Multiple regression analysis was used to obtain results. The variables for the first part of the question included: dependent variable post-mastery and independent variable condition (control=0 and experiment=1), pre-mastery, pre-academic self-efficacy and interaction effect (between pre-academic self-efficacy and condition). The ANOVA results indicated that the model significantly explained 66% variance of dependent variable, $F(1,41)=18.40$, $p<.05$ According to table 4. the "condition" tab indicated that using concept mapping did not significantly increased mastery goals, $\beta=.19$ $t(41)=1.86$, $p>.05$

Table 5. Output resulting from multiple regression analysis

	Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for *B*	
	B	*SE*	*Beta*	*t*	*Sig.*	*LB*	*UB*
(Constant)	.532	.474		1.112	.269	-.429	1.494
Condition	.409	.220	.194	1.862	.071	-.036	.854
Pre-Mastery	.731	.176	.592	4.158	.001	-.375	1.087
Interaction Effect	.390	.259	.175	1.509	.140	-.137	.914
Pre-Academic Self-Efficacy	.085	.172	.076	.498	.625	-.263	.433

Note. Dependent Variable: Post-Mastery

The second part of question one is "does mastery goals have any effect on reading comprehension achievement". Multiple regression analysis was conducted to obtain results. The variables used to answer this question were dependent variable post-test and independent variable pre-test, condition (control=0 and experiment=1), pre-academic self-efficacy and interaction effect (between pre-academic self-efficacy and condition). The multiple regression analysis indicated that the ANOVA results explained

34% variance of dependent variable $F(1,41)=4.94$, $p<.05$ According to table 5. the "condition" tab indicated that mastery goals had no effect on test scores $\beta= -.07$ $t(41)= -.55$, $p>.05$

Table 6. Output resulting from multiple regression analysis

	Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for *B*	
	B	*SE*	*Beta*	*t*	*Sig.*	*LB*	*UB*
(Constant)	1.005	1.984		.507	.615	-.3015	5.025
Condition	-.506	.911	-.077	-.556	.582	-2.351	1.339
Pre-Test	.181	.052	.520	3.475	.001	-.075	.287
Interaction Effect	.926	1.167	.133	.735	.432	-1.438	3.290
Pre-Academic Self-Efficacy	.451	.913	.129	.735	.469	-.791	1.693

Note. Dependent Variable: Post-Test

Research Question 2

To examine the effects of whether academic self-efficacy enhances concept mapping strategy on mastery goals orientation and reading comprehension achievement, the first part of question two is "does the interaction effect between academic self-efficacy and condition affect mastery goals orientation?" Multiple regression analysis was used obtain results from table 4. The variables for the first part of the question included: dependent variable post-mastery and independent variable condition (control=0 and experiment=1), pre-mastery, pre-academic self-efficacy and interaction effect (between pre-academic self-efficacy and condition). The ANOVA results indicated that the model significantly explained 66% variance of dependent variable, $F(1,41)=18.40$, $p<.05$ According to table 4.

the “interaction effect” tab between academic self-efficacy and condition did not increase mastery goals orientation, β=.17 t(41)=1.50, p>.05

The second part of question two is “does interaction effect between academic self-efficacy and condition affect reading comprehension achievement?” Multiple regression analysis was used to obtain results from table 5. The variables used to answer this question were dependent variable post-test and independent variable pre-test, condition (control=0 and experiment=1), pre-academic self-efficacy and interaction effect (between pre-academic self-efficacy and condition). The multiple regression analysis indicated that the ANOVA results explained 34% variance of dependent variable F(1,41)=4.94, p<05 According to table 5. the “interaction effect” tab between academic self-efficacy and condition had no effect on test scores β=.13 t(41)=.73, p>.05

DISCUSSION

Summary and Discussion

This study investigated how concept mapping can promote mastery goals orientation and reading comprehension achievement. Since concept mapping may be used for helping students with improvement in academic learning (Lanzing, 1997; Novak & Gowin, 1984), the perception of why it can increase intrinsic motivation should also be investigated (Wolters, 2004; & Haugwitz, Nesbit & Sandmann, 2010). As a result, the study also investigated if academic self-efficacy can enhance concept mapping strategy on mastery goals orientation and reading comprehension achievement. The findings of the study in regard to the research purpose and limitations will be reviewed along with suggestions as to how improvement can be made for future research.

Concept Mapping and Mastery Goals Orientation

First of all, concept mapping did not significantly increased mastery goals orientation and reading comprehension achievement. The first part of question “concept mapping will increase mastery goals” was inconsistent with our study according to previous research that shows learning strategies such as concept mapping positively influencing mastery goals orientation. If students experience low self-esteem and academic self-efficacy towards

reading comprehension, even with the use of learning strategies, then it can still hinder student's confidence and ability to perform despite being intrinsically motivated. If this happens, students might resort to performance-avoidance goals, rather than mastery goals. The potential reason for this result is because students might be tempted to secure normative validation for their efforts and to protect their egos or feelings (Peixoto and Almeida, 2010). In addition, students who show little motivation to learn are less inclined to seek the use of learning strategies and therefore, will not enhance positive results (Vande Wallle & Cummings, 1997).

Concept Mapping and Reading Comprehension Achievement

For the second part of question "concept mapping will increase reading comprehension achievement" contradicted our hypothesis. Despite extensive research indicating that it will in previous studies, there are several limitations and issues associated with it. According to Woolfolk & Margetts (2010), concept mapping may diminish reasoning skills if students have low meta-cognition levels because it will make it harder for students to absorb new material. Chiu (2008) research supports this claim because a sample of (n=62) experimental students reported problems that they could not quickly adapt to the approach of concept mapping. The reason for this is because they lacked familiarity which frustrated novice mapmakers (p.320).

However, towards the end of the course, students were happier because they became more familiar with concept mapping and noted that it became easier with time and consistency. The teacher required students to fix their mistakes and reconstruct their concept maps again with the corrections. After each accounting chapter was covered throughout the 12 weeks, the students were required to answer questions based on the main ideas of the readings and construct a concept map.

In addition, although concept mapping can be a great asset when assisting student with academic work to link concepts and idea, it must not be used at the expense of other learning strategies. The reason why this is significant because many high performing students are not fixated on just one learning strategy but rather use a variety of learning strategies to achieve their academic goals (Van Blerkom, 1994). However, if only concept mapping strategy is applied without the aid of other learning strategies then there is a chance that performance levels can actually drop; therefore, it is expected that the average student will benefit from concept mapping more significant compared to very low or high meta-cognition students that will not.

Academic Self-Efficacy and Mastery Goals

Secondly, academic self-efficacy did not enhance mastery goals orientation and it was also inconsistent with our hypotheses that the

interaction of academic self-efficacy will increase reading comprehension achievement. The first part of question “the interaction effect of academic self-efficacy will increase mastery goals orientation” was inconsistent with previous studies according to our results. Despite extensive research indicating that it will increase mastery goals, there are several limitations and issues associated with it. Breso, Schaufeli and Salanova (2011) explained that psychological state is one of the most important sources for academic self-efficacy beliefs that may influence mastery goals orientation. Students who experience anxiety will usually perform not as well because they may question their own abilities and talents.

This is important because despite having the intrinsic motivation of wanting to accomplish a task, if it is hindered by anxiety then it could lead to compulsive behavior or panic attacks because of fear, especially in the form of not performing as well. In addition, Bandura (1977) research supports this claim because even though students may have high academic self-efficacy it may not increase mastery goals orientation. The reason for this is because if students are unable to observe other students to see how a task is done first, then it can create a sense of nervousness when it is their turn to perform and the full potential of reading comprehension achievement may be hindered. Students will not have a solid idea of what they need to do despite the desire of wanting to do the task.

Furthermore, Csikszentmihalyi (1997) would have added that

overestimation of ability may also be a huge factor that could have been overshadowed despite extensive research that anxiety and nervousness may have hinder mastery goals orientation when combined with academic self-efficacy. When students overestimate their own ability beyond actual ability, it leads to misjudgment and an overemphasis of competency to complete tasks. The problem is that in today's day and age, students are given feedback in a more positive manner than what they're really saying behind our backs. This in turn could lead to ignorance and an inaccurate calculation of how students should evaluate themselves despite how they perform. In addition, academic self-efficacy is very subjective opinion based on the norms and perceived behavioral outcomes that shape intentions and is influenced by individual judgment.

Academic Self-Efficacy and Reading Comprehension Achievement

For the second part of question "interaction of academic self-efficacy will increase reading comprehension achievement" the results contradicted our results. Despite extensive research indicating that it will increase reading comprehension achievement in previous studies, there are several limitations and issues. Pajares (1996) argues that academic self-efficacy beliefs vary greatly between individuals; therefore, it will be hard to make an accurate assessment to evaluate academic self-efficacy. If students are basing academic self-efficacy for a new task on results of a previous task

then it could be misleading because personal factors can distort memories of previous performance. Despite the need for improvement to accurately assess academic self-efficacy, Ormrod (2008) would have emphasized that if students do not possess the necessary skills to work out the mechanics of a problem then it may hinder reading comprehension achievement. The good news however is that although achievement may not happen right away, students with have high academic self-efficacy will eventually find ways to better develop skills and knowledge to successfully achieve a task. Students with high academic self-efficacy will find ways to experiment and take greater chance even if it leads to failure because the investment will be well worth the end result rewarded. In addition, resilience will be developed because high academic self-efficacy students will not give up on a task that they are intrinsically motivated to do when compared with low academic self-efficacy students (Pajares & Schunk, 2001).

Bandura (1993) research supports this claim because students with high academic self-efficacy will face a challenge and view it as something that must be learned and mastered. After students obtain a fair assessment of their current achievement level, they will spend more time trying to improve their current skills by practicing harder and seeking assistance to better themselves by requesting help from a professional with immense experience in the same task that they are trying to achieve. In addition, theses students will persist in the face of difficulty and use learning strategies to make

studying more meaningful. When students believe in themselves, they are more likely to develop goals as they accomplish the task. Lastly, if students feel that they are making progress on a task then they will build academic self-efficacy in multiple areas that will increase ones confidence in mastering new domains and will remain calmer when approaching challenging task because persistence and focus on a given task will be increased (Ormrod, 2008).

Limitations and Improvements for Future Research

The results of the current study should be interpreted and applied to other contexts with caution due to the potential for over generalizing beyond the context of this study. The reason is because all participants in the current study attended only one school. Future researchers should be cautious when applying these findings to secondary or tertiary education in general because higher level students may use a combination of multiple learning strategies or more advanced strategies instead of a single learning strategy like concept mapping (Van Blerkom, 1994). In addition, educators should carefully note that this study was only conducted in the context of elementary-level Korean. Since middle school classrooms tend to operate under more competitive goals, educators should carefully consider the learning environment in order to replicate the effects from the current study.

Future research should expand this research by conducting mixed

methods because the need for interviews will be very helpful to help understand a student's thought process of why they rated themselves the way they did on the 5 point likert scale. In addition, it will serve as a good baseline to better understand why concept mapping was helpful to them and what can be done to make improvements in the future. Interviews will open up the student's opinions, values, and feelings as to why they behaved the way they did. Also, I think future researchers should ask background and demographic questions to try and understand a student's personalities through open-ended questions. In addition, because of the reduced number of participants, the statistical procedure chosen could have been a source of instability. Usually a minimum of 10 individuals for each variable is needed for the regression equation. However, our experiment uses a ratio of 7.3 individual's per variable.

Furthermore, because there was limited amount of time to conduct this study due to time constraints, future researchers should conduct this experiment over a course of a semester. This experiment was not the best in the world because students only had 10 minutes to learn concept mapping from the researcher. This is an area that could have been improved to help student's fully master concept mapping. If the school allowed a period of three weeks or more to conduct research and fully teach concept mapping then I firmly agree that concept mapping would have increased reading comprehension achievement and test results. This is proven fact because in

Chiu (2008) study, she did mention that students were at first frustrated with learning concept mapping as a new learning strategy because it was very unfamiliar to them. However, it took until the end of the semester for students to finally reap the rewards from learning concept mapping and successfully apply the strategy in the correct way after several practices and attempts. The teacher corrected mistakes and showed students what needed improvement in their previous concept maps. In our experiment, even though our students failed to improve reading comprehension achievement, it's really not an issue because with further extensive research and training this trend can and will be reversed.

Finally, it would be helpful to investigate collaborative learning environment. Although this study considered the possibility that working in a collaborative group may improve or hinder academic performance, future researchers should expand this study by incorporating an additional 5 point likert scale based on how students get along with their partner and the atmosphere of the learning environment. Extensive research has proven that students with a sense of belonging are more likely to demonstrate greater positive learning behavior and satisfaction because students experience support and emotional warmth in relationship to teachers, peers and parents that influence academic performance (Shin et al., 2011).

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Appendix

Pre and Post Questionnaire

Mastery Goals (Midgley et al., 2000)

1. It is important to me that I learn a lot of new concepts this year.
2. One of my goals in class is to learn as much as I can.
3. One of my goals is to mastery a lot of new skills this year.
4. It's important to me that I thoroughly understand my class work.
5. It's important to me that I improve my skills this year.

Performance Goals (Boyle & Klimoski, 1995)

1. I am eager to prove to others how good I am at this task
2. I wonder how my score on the next trial will compare with people's scores.
3. I am eager to show how much I know about the materials and procedures for this task.
4. I want to appear competent on the upcoming task.
5. I want to do better than others on the next trial

Academic Self-Efficacy (Muris, 2001)

1. How well can you get teachers to help you when you get stuck on schoolwork?
2. How well can you study when there are other interesting things to do?
3. How well can you study a chapter for a test?
4. How well do you succeed in finishing all your homework every day?
5. How well can you pay attention during every class?
6. How well do you succeed in understanding all subjects in school?
7. How well do you succeed in satisfying your parents with your schoolwork?
8. How well do you succeed in passing a test?

Korean Translated Pre and Post Questionnaires

Mastery Goals (Midgley et al., 2000)
1. 올해 새로운 개념을 많이 배우는 것이 중요하다고 생각한다.
2. 이번 강좌에서 내 목표 중 하나는 최대한 많이 배우는 것이다.
3. 올해 내 목표 중 하나는 다양한 기술을 학습하는 것이다.
4. 수업 내용을 완전히 이해하는 것이 중요하다고 생각한다.
5. 작년 보다 기술 수준을 높이는 게 중요하다고 생각한다.

Performance goals (Boyle & Klimoski, 1995)
1. 내가 어떤 일을 잘한다고 남에게 보여주고 싶다.
2. 다음 번 점수가 남들보다 높을지 낮을지 궁금하다.
3. 어떤 일에 대해서 잘 알거나 잘 할 수 있다는 걸 보여주고 싶다.
4. 앞으로 할 일도 잘 할 수 있다고 보여주고 싶다.
5. 다음 번에는 다른 사람보다 더 잘 하고 싶다.

Self-Efficacy (Muris, 2001)
1. 과제를 해결할 수 없을 때 선생님께 도움을 자주 요청하나요?
2. 흥미로운 주제가 생기면 잘 공부할 수 있나요?
3. 시험 범위로 한 단원을 잘 공부할 수 있나요?
4. 매일 마다 숙제를 잘 해낼 수 있나요?
5. 매 수업시간마다 잘 집중할 수 있나요?
6. 학교에서 모든 과목을 잘 이해할 수 있나요?
7. 학교 성적으로 부모님을 잘 만족시킬 수 있나요?
8. 시험에 통과하는 걸 잘 할 수 있나요?

Example of Script and Sample Question from TESOL jr.

Last summer, my mother and I flew to Japan to visit my uncle. This was the first time I had ever been on an airplane, so I was a little scared. We left from San Francisco, and the flight took 12 hours. I didn't know what I was going to do on the plane so I brought some books. When I sat down, I saw a small television screen in front of my seat. My mom told me I could watch movies or play video games. She showed me how to use it. I was so happy. In addition, I could drink as much coke as I wanted. The only problem I had was with the food. Airplane food does not taste very good. I had a choice of chicken or beef with rice. I chose the chicken. However, the chicken was very dry. The rice was a little too hard. When we got near Tokyo, I could see Mount Fuji out of my window. After arriving in Japan, all I could think about was flying back to San Francisco and what I would do on the plan!

1. How did the boy feel at first?

(A) Happy (B) Bored (C) Scared (D) Hungry

2. What did the boy eat?

(A) Beef (B) Uncooked Rice (C) Snacks (D) Chicken

Concept Mapping Manual

1. I will explain what a concept map is to Korean 5th grade students and have my Korean Co-teacher translate everything that I say. Afterwards I will show students an educational video about concept mapping through YouTube. "Concept maps are graphical tools for organizing and representing knowledge. They include concepts, usually enclosed in circles or boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts." https://www.youtube.com/watch?v=ZWVLrmfYYMw

2. For the experimental group only, I will hand out the reading materials of the story Cinderella and we will read the story together as a class.

3. After reading the story we will make a list of 10-12 related and familiar concept words and organize them from general to more inclusive concepts (i.e. Cinderella works hard (less general) because her stepmother over works Cinderella by making her clean the house, vacuum the floor, wash the dishes (more specific)).

4. Next we will connect the dots by constructing a concept map on a blank sheet of paper (i.e. the teacher will draw it on the whiteboard).

5. I will then have students read out some of the short sentences so that they can see the connection they made by using concept mapping.

6. I will tell students and ask them to share if there are any crosslink between concepts and add the other concepts on the map (i.e. fairy godmother made Cinderella happy and turned a pumpkin into a coach.

7. If time permits, I will ask students to share their concept maps with the whole class and ask them to explain their structure of how they created their concept map and why they designed it their way. The goal is to avoid criticism but to emphasize the positive elements and show them how they can make their own map better.

Cinderella Story

Once upon a time there was an unhappy girl who lived with her father, stepmother and two step sisters.

She was made to work hard by day and sleep on the cold floor near the floor by night and that is how she came to be known as Cinderella.

One day an invitation arrived inviting everyone to a grand ball held in honour of the prince. Then off they went leaving Cinderella behind, sad and all alone.

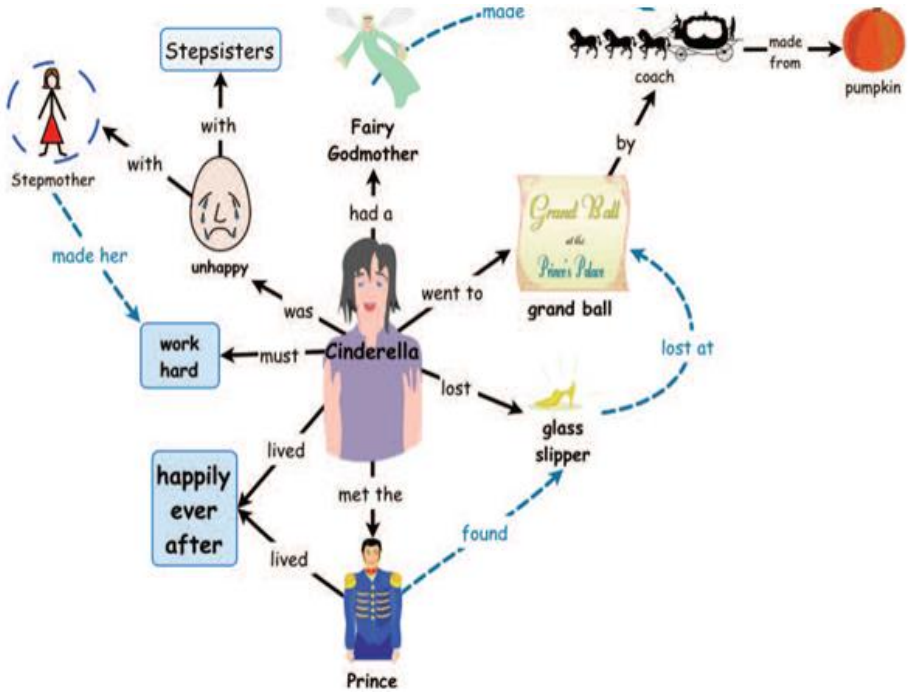
Suddenly a fairy appeared. She dressed Cinderella in a beautiful gown, changed a pumpkin into a coach, and mice into horses.

So off went Cinderella to the palace. As soon as the prince saw her he asked her to dance and would dance with no other all night.

However, at midnight, Cinderella ran from the prince but she lost one of her shoes. The prince searched for the owner of the shoe.

Finally he found Cinderella and they lived happily ever after.

Concept Mapping Diagram



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