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Effect of Self-Regulatory Behaviors on Task Completion

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Abstract

This study sought to determine if the implementation of a cyclical process of student goal setting, monitoring of progress, and reflection would improve task performance and intrinsic motivation in middle school learners. Fifteen upper-elementary children in a public Montessori classroom were selected and grouped according to student and teacher perception of their performance the previous year. Prior to the intervention, students completed an assessment of their self-regulation abilities. All students received lessons on goal setting, monitoring, and reflection with the use of a self-regulation notebook to make themselves aware of the standards, set goals, track their progress, and reflect on performance. Teachers collected data regarding on-task performance and on-task behavior. The results showed an increase in both on-task behavior and task completion, but no consistent increase in students' perception of their self-regulation abilities. A suggestion for further research could be conducting a study of the effect that intentional conversation and student interviews would have on student self-perception of their ability to self-regulate.

Keywords: cyclical process, intrinsic motivation, upper-elementary, Montessori, self-regulation, standards

What inspires one to strive for great heights with no prize at the end or to finish the long race with no medal in hand? Our individual, internal motivation can speak to our ability to seek satisfaction from the act rather than the reward. In "Introduction to Psychology: Gateways to Mind and Behavior with Concept Maps," the authors describe intrinsic motivation as occurring, "when we act without any obvious external rewards. We simply enjoy an activity or see it as an opportunity to explore, learn, and actualize our potentials" (Coon & Mitterer, 2012).

Intrinsic motivation and the ability to self-regulate learning can be a struggle for middle-level students. Earning grades for the first time can cause students to shift their focus extrinsically. Students may complete tasks to earn a grade where work may previously have been more intrinsically focused prior to grades. Extrinsically motivated students, through task completion, may gain knowledge of a subject along the way but often work is completed with an end goal of a check on the to-do list. When I assumed my role as an upper elementary Montessori guide, I anticipated a group of children well versed in the art of intrinsic motivation who were able to self-regulate their learning to achieve high academic standards. I quickly discovered that many students seem to lose this desire to learn for the sake of learning. Many begin to question the worth of their work and quantify their learning on a grading scale rather that qualify their work as they seek to improve themselves. Through this observation, I became interested in the research of self-regulation techniques and implementation strategies to foster intrinsic motivation, a component for authentic learning in middle school learners. What effect would the implementation of a cyclical process of student goal-setting, monitoring of progress, and reflection have on task performance and intrinsic motivation in middle school learners?

This research focus addresses sixth grade students' abilities to self-regulate their learning by means of establishing learning goals, monitoring their progress, and reflecting on their

learning in order to set new learning goals. The subjects in this study were enrolled in a Mid-Michigan 5 / 6 grade Montessori classroom. Prior to implementing the study, fifty five students completed a self-assessment questionnaire measuring their perception of themselves as learners. Students responded to five items from the Students Life Last Year form. The five items included the students' perception of their ability to: (1) complete work/projects, (2) understand content, (3) be prepared, (4) show effort, and (5) produce quality work. The students responded to each item and a point value was assigned to each answer. The responses of the students' previous year teacher were used as a cross-reference to determine if the student view of themselves closely reflected that of their previous year's teacher. Based on the mean point values, a representative sample of five students received placement in three categories: Excelling, Average, and Below Average resulting in a sample study of fifteen students.

<div align="center">Review of Literature</div>

According to dictionary.com, intrinsic motivation is personal satisfaction derived through self-initiated achievement. Intrinsically motivated students have the ability to self-regulate their learning. Self-regulation is favorable to the process of acquiring knowledge. Self-regulation can benefit this acquisition by helping students develop good learning habits and strengthen study skills (Wolters, 2011), apply methods to increase learning (Harris, Friedlander, Sadler, Frizzelle, & Graham, 2005), monitor their task performance (Harris et al., 2005), and reflect on their progress (de Bruin, Thiede, & Camp, 2001).

What is Self-Regulation?

Self-regulation is the practice in which students take an active, participatory role in the management of their thoughts, behaviors, and emotions. It is ideal for there to be a marriage between cognitive and social-emotional self-regulation (Bandy & Moore, 2010). This dual

process allows students to take control of their experiences with learning. The practice of self-regulation that is most commonly accepted and referred to is a cyclical design and presents three stages of progression. The stages are forethought and planning, performance monitoring, and reflections on performance (Pintrich & Zusho, 2002; Zimmerman, 2000)

During the first phase of forethought and planning, students evaluate the learning objective and set goals for attaining it. Pre-assessments allow for students to view the objectives on which they will be assessed. If the subject matter is familiar, this task is more manageable. When the task is not familiar, teachers and peers can assist the student in determining the best method through instruction or modeling.

The second phase for self-regulated learners is performance monitoring. This phase is active in that students implement strategies to achieve their learning targets. At the same time, students monitor their progress and evaluate the strategies they are using for effectiveness. Teacher observations and interactions play an important role in this phase as students may abandon new strategies if they are difficult. Frustration can hinder the process as students try new things. The monitoring of progress is important so that students feel success and are encouraged by their hard work.

John Hattie researched the efficacy of student achievement when they were allowed to set goals and self-report their growth. When quantifying the component of self-reporting grades, evaluations, and expectations there is an effect size of 1.44 (Hattie, 2012). Effect size measures the strength of a phenomenon. An effect size of 0.4 is above average for educational research, therefore Hattie's research on self-evaluation provides quantifiable justification for this research. The final phase of the self-regulatory process allows for student reflection on performance. Students should have the opportunity to consider the strategies they used and base the

effectiveness of the strategy on the outcomes achieved. Students may feel frustrated by unmet

goals or proud of positive performance. This self-reflection of progress helps students see the

need to continue this cyclical process. The chart below is provides a visual representation of

Zimmerman and Moylan's cyclical process.
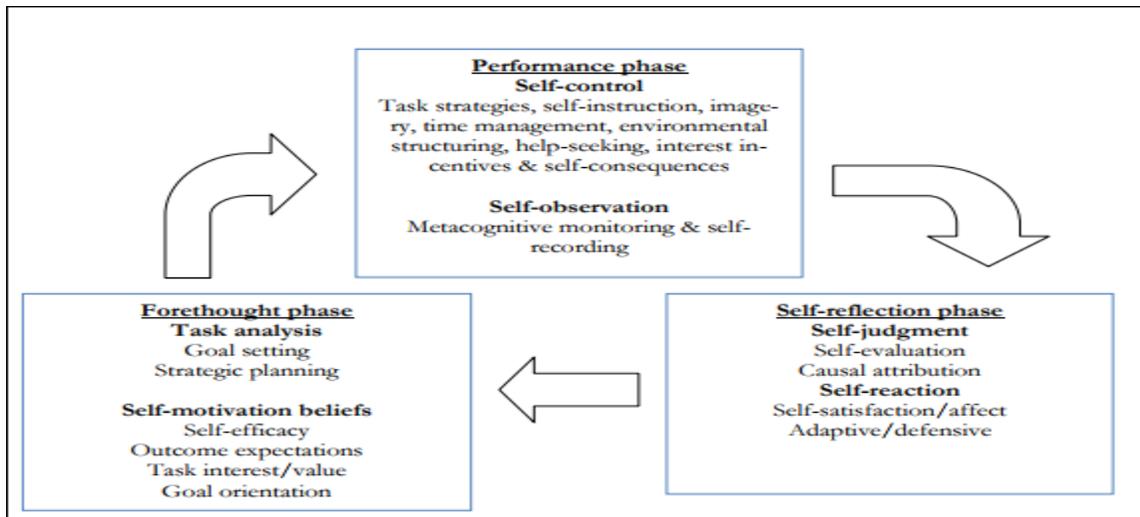
Figure 1. Phases and processes of self-regulation according to Zimmerman and Moylan (2009). © Routledge.

Self- regulation and Success

Students who are adept in self-regulatory behaviors tend to be more active and committed

to the acquisition of knowledge. Some of the characteristics of self-regulated learners are that

they choose seating that is near instruction (Labuhn, Zimmerman, & Hasselhorn, 2010), look for

extra sources of instruction when they need assistance with learning goals (Clarebout, Horz, &

Schnotz, 2010), choose to answer questions that are posed to the class (Elstad & Turmo 2010),

and make decisions in their setting that are conducive to meeting their goals (Kolovelonis,

Goudas, & Dermitzaki, 2011). The ability to look for counsel from those more experienced

(Clarebout et al., 2010) and seek out spaces that are conducive to learning (Labuhn et al., 2010)

are also characteristics displayed more commonly in self-regulated learners than in students who

do not possess high levels of self-regulation. Since the self-regulated student can be active and

present in their learning, researchers therefore are finding evidence of a direct relationship between self-regulation and academic achievement. These studies suggest that self-regulated learners do score higher and perform better on tests (Schunk & Zimmerman, 2007; Zimmerman, 2008). The research suggests that implementing self-regulation techniques can make the difference between academic prosperity and deficiency (Graham & Harris, 2000; Kistner, Rakoczy, & Otto, 2010). Furthermore, Pajares (2008) concludes that students have an increase in self-efficacy when they are able to use self-regulatory strategies.

Strategies for Achieving Self-Regulation: The Cycle

      1. Forethought and Planning.

      The cyclical process of self-regulation commences in the phase of forethought and planning. During this phase, students set goals and make plans for achieving them. Goals are the standards that regulate the student's actions (Schunk, 2001). Students may set goals such as letter grade attainment or mastery of a particular concept. Students work toward effective self-regulated learning by setting both short and long-term goals. The short-term goals help keep the student on track and motivated as they work toward achieving the long-term goal (Hattie, 2012; Zimmerman, 2004).

      Another component of this first phase is the planning of tasks and strategies that will facilitate the accomplishment of the set goals. According to research carried out by Schunk (2001), goal setting and planning work together when the planning of the tasks assists students in setting attainable goals with specific achievement strategies. The planning phase of forethought on the task occurs in three stages; goal setting, determining strategies that will be used to work toward the goal, and deciding how much time and what resource tools will be necessary to achieve the goal (Schunk, 2001). Self-regulated learning is the result for students taught

techniques of achieving goals by setting a plan (Pressley & Woloshyn, 1995; Schneid, 1993).

2. Performance.

After the forethought and planning phase, students embark on the performance phase. During the performance phase, there are several components that are focus areas for student success. The first is self-motivation. Self-motivation is key to assuming that students will stay the course of the planning phase and maintain control over their learning (Corno, 1993). Self-selection of work is an important component so students feel that sense of autonomy which assists motivation to learn (Montessori, 1917). In order to facilitate the deep-seated component of self-motivation, there should be an absence of external rewards. As students work towards autonomy in the absence of incentives, self-motivation becomes their driving factor (Zimmerman, 2004). There is a pleasant, gratifying experience that accompanies students who set goals and persist toward attainment (Wolters, 2003).

Another component of the performance phase of self-regulation is the student's ability to attain attentional control (Winne, 1995). According to Montessori's child developmental theory of the planes of development, students can achieve the ability to maintain control of their attention during the first plane of development (ages 0-6) in an environment that fosters uninterrupted work time on purposeful tasks (Montessori, 1917). If the control over attention is not achieved at this early age, students can learn this behavior if the skill level is in direct proportion to the challenge presented. This is known as an optimal experience and is directly related to the theory of flow (Kahn, 2003). Attentional control requires that students have the ability to self-monitor and work all the way through a task (Harnishferger, 1995). This requires the ability to experience extended, focused time on learning tasks (Kuhl, 1985). Learning environments should also facilitate attention and be conducive to the task of learning through

goal attainment. This can be achieved more effectively by removing distraction from the environment (Winne, 1995).

Self-monitoring is integral during the performance stage of self-regulation. Students need to feel a sense of control and ownership over their learning in order to interact with the process in a way that moves them toward their goals (Kistner et al., 2010). Monitoring the process allows students the opportunity to take responsibility for their outcomes. The process of goal setting, planning, self-motivated work toward goals, and the implementation of strategies all provide students with experiences of self-monitoring (Zimmerman, 2004). Classroom guides can inspire self-monitoring through the implementation of student record keeping. Students can track progress toward goals, time spent on tasks, strategies they implemented, and completion of goals. Visualization of self-monitoring is achieved through charts, check sheets, or reflective journals.

Some may misinterpret the skill of self-regulated learning as the ability to be completely independent and not require assistance from others in completing tasks. Self-regulation actually allows for the students' ability to reflect on the process and to seek help when needed (Butler, 1998). Self-regulated learners ask for help differently than students. Self-regulated learners ask for help with a goal of seeking more autonomy in the task. The assistance provides clarity and guidance for the students as they learn, and they do not wish to simply receive the answer. (Ryan, Pintrich, & Midgley, 2001). Classroom guides can provide feedback throughout the process of goal attainment rather than just upon completion. Students should also be given the opportunity to re-submit work that needs correction in order to make necessary changes that facilitate mastery of the skill.

　　　3. Reflection on Learning.

The final stage in the cyclical process of self-regulation is a period of reflection on the performance stage. Students who are given the opportunity to self-evaluate their learning independent of teacher evaluations are more likely to become self-regulated (Hattie, 2012; Winne & Hadwin, 1998). The skill and practice of self-evaluation allows the student to make modifications to the strategies they used. These modifications assist in continuing progress toward present and future goals (Schraw & Moshman, 1995). Teachers may encourage self-evaluation and reflection by providing tools for monitoring goal progression (Zimmerman, 2004) or through the implementation of work portfolios (Thorne, 2014).

The progression through the stages of self-regulatory behavior reaches a culminating stage in reflection and then the cycle begins again with new goals (Pintrich & Zusho, 2002; Zimmerman, 2000). The process of reflection allows a focus not on work completion but the re-ignition of the determination needed to fulfill the desire to learn. Students may continue along the path of refining skills or set other goals focused on new learning targets.

Encouragement in the Classroom

Creating a classroom environment that encourages self-regulated learning is a challenging feat even for the most experienced teacher. To encourage this type of environment, we use strategies to provide encouragement. These strategies include modeling and direct instruction, guided and independent practice (a scaffolded approach), and guide and peer support through feedback.

The self-regulation technique is also taught using the most traditional of teaching approaches; direct instruction of the technique and modeling. Transparently sharing the process of self-regulation and giving explicit directions of strategies is one approach to implementation (Zimmerman, 2008). The guide who is candid and sincere with how he/she uses these practices

in their own life will receive more buy in from their students (Boekaerts & Corno, 2005). Direct instruction of self-regulation techniques has been proven the most effective approach for students new to this technique and young children (Levy, 1996).

After some of the ideas of self-regulation are introduced, teachers can begin scaffolding the practice. Guided practice shifts the responsibility of carrying out the learning strategy to the student. Conferencing with students is an effective practice for opening the lines of communication and assigning importance to self-regulation techniques (Montalvo & Torres, 2008). Guides must also provide intentional opportunities, with monitoring, for students to independently practice self-regulation (Schunk & Zimmerman, 2007). For long-term effectiveness, guided and independent practice (Lee, McInerney, & Liem, 2010) and frequent opportunities for practice (Montalv & Torres, 2008) are essential.

Learning is a social experience. Students who have the opportunity to receive support from peers and teachers tend to be more proficient in self-regulation (Patrick, Ryan, & Kaplan, 2007). Feedback is one of the methods of support provided by teachers or peers. Feedback provided effectively will include what went well (Labuhn et al., 2010), what needs to improve, and what can be done to make those improvements to the student's work (Black & William, 1998; Hattie & Timperley, 2007; Sadler, 1998). Progress feedback is the term used for this effective method of support (Duijnhouwer, Prins, & Stokking, 2010). This method of feedback has proven to benefit students academically (Brookhart, 2011), with motivation (Wigfield, Klauda, & Cambria, 2011), and with self-regulation.

Another component of the implementation of self-regulation techniques in the classroom lies on the shoulders of the teacher. Teachers who reflect on their practice have the most success with the self-regulation system. Reflective practice allows for the adaptation and revision of

pedagogical styles in order to better facilitate student progress (Gibson, Hauf, & Long, 2011).

Classroom observations of the effectiveness of the approach (Montessori, 1917) as well as

formative and summative assessments can direct reflective practice.

Conclusion

Research overwhelmingly supports the benefits of self-regulation techniques in the

classroom. Classroom guides who understand the importance of the intrinsic motivation that

comes from self-regulated learning can implement strategies in any classroom at any age. The

purpose of this research is to determine what effect the implementation of a cyclical process of

student goal setting, monitoring of progress, and reflection has on task performance and intrinsic

motivation in middle school learners. The research will show whether children who receive these

strategies will have an increase in task completion and in their perception of their ability to self-

regulate their learning.

Methodology

The two classroom teachers as well as the two teacher aides worked together during the

implementation of this intervention. Prior to data collection, the teacher provided parents and

guardians of students with an informed consent letter (Appendix A). Tools used for initial

collection of data prior to implementation of intervention strategies were the Student Life Last

Year (Student and Teacher version) form as well as the Self- Regulation Questionnaire (SRQ).

The teacher used each of these tools to collect data on student self-perception of their ability to

self-regulate their learning prior to strategic intervention. Student Life Last Year - Student form

(Appendix B) was used to gauge student interpretations of themselves as learners. This

information was cross referenced with the Student Life Last Year - Teacher form (Appendix C).

The teacher compared answers from student and teacher for similarity and consistency to select

students who could accurately assess themselves as learners. The form was comprised of

measures that were ranked on a 1 (poor) to 5 (excel) scale. Six measures were considered for

selection of students while five measures were asked for teacher information but were not

pertinent to this study. The teacher selected students based on similarity between student and

teacher perception, prior to intervention, in order to create a sample group of students who could

accurately judge themselves as learners. The teacher selected five students for each of the three

groups based on the students' scores on their forms. Five students reporting "below average"

scores or bottom third were selected, as well as five students with "average" scores or middle

third, and five students in the "above average" category or top third. The teacher chose to create

three, leveled groups in order to see the effect of the study on students with different self-

regulatory behaviors prior to intervention. These reports produced a sample group of fifteen

students who were used for study. All students received data tools and intervention but the

sample group was used to collect data for the study. Data was kept private by grouping and

numbering fifteen students.

A second measure used prior to intervention was the Self-Regulation Questionnaire

(SRQ) (Appendix D). The teacher also administered this data tool at the end of the study to

measure student growth in perception of their ability to self-regulate. The SRQ was used to

measure student ability to self-regulate their learning. The teacher gathered data on the

assessment of student perception of their self-regulatory behaviors both before and after the

students received lessons on establishing a cyclical process of planning, monitoring, and

reflection on learning targets. Students received the questionnaire with their assigned number

already noted on it so the fifteen students used in data collection could be identified. The teacher

gave an explanation of self-regulation and told the students that there were no right or wrong

answers. Students were asked to be reflective and honest in their answers. The teacher read each question aloud to the group and the scoring was clarified as well as terminology in each statement. SRQ statements are categorized into three components; goal setting, monitoring of goals, and reflection. Student scores were calculated (1-5) for each of the three categories to show student perception of their ability to perform these cyclical tasks before and after intervention.

In conjunction with the student completed forms (Appendix B and D), teachers also collected initial data on work completion (Appendix E). Verification of weekly work completion sample sheet was a chart showing weekly work expectations intersecting with student names. Teachers checked each box with a mark if the student completed the work. The teacher converted check marks to a percentage of works completed. This measure was taken both before and after implementation of the intervention.

Teachers also completed observational reports of on-task/off-task behavior during work time (Appendix F). All four classroom teachers participated in ten minute observations which they completed during the morning work cycle when students had the opportunity to choose independent work. On-task behavior forms give the option of "on-task" or "off-task" check marks every thirty seconds throughout the ten minute observation period as well as denoting what the off-task behavior was. The teacher calculated the percentage of on and off-task behavior over a ten minute work time period both before and after intervention for each student. This measure shows students' appropriate use of work time to see if the lessons produced an increase in productivity and on task behavior.

After collecting data to select students to participate in the study and collecting initial information on self-regulation, the teachers introduced students to the cyclical process of

planning, monitoring, and reflecting on their learning tasks. Each student received a two inch

notebook called the Self-Regulation Notebook (SR Notebook). In the SR Notebook, students

have a list of learning targets according to common core state standards (CCSS) as well as CCSS

listed as "I Can" statements for students in more friendly language to better digest what

expectations were. The teacher gave lessons on how to use their notebook as well as read

standards. In a separate lesson, the teacher taught students how to fill out their Student Progress

Monitoring Sheet "Tracking Progress to My Goals" (Appendix G). Students took a pre-

assessment to record their understanding of certain standards before lessons. The teacher gave

lessons and students performed follow up work to master the skills and then took a post

assessment which was scored and recorded by each student. If necessary (student score below

80%), students received more lessons and follow-up work then had an opportunity reassess that

standard. The teacher tracked practice work with a work completion sheet (Appendix E) and

students tracked progress toward mastering standards on their progress monitoring sheet

(Appendix G). Students set new goals on their progress sheet, monitored their progression

toward mastery, and reflected on their learning as the students graphed their assessment scores.

Students met for weekly check in sessions with the teacher every Thursday throughout

the duration of study. These meetings took place to monitor appropriate, consistent use of their

SR binder. These conferences served as an opportunity to remind students to use their binders

consistently, but the teacher did not collect data during these sessions. In these meetings, the

teacher and student also added assessments to the binder and documented new scores, set goals,

and reflected on progress toward learning targets.

<div align="center">Analysis of Data</div>

The purpose of this study was to determine the effect of the implementation of a cyclical process of student goal setting, monitoring of progress, and reflection on task performance and intrinsic motivation in middle school learners. Would self-regulation strategies have a positive effect on intrinsically motivated task completion and appropriate use of work time?

Before implementation of intervention strategies, students participated in a questionnaire measuring their perception of themselves as learners (Appendix B). Similarly, the student's previous year teacher completed this questionnaire (Appendix C) from his or her perspective of the student's self-regulation qualities. A comparison of student and teacher perception was important to select students who seemed to have the skill to accurately assess their abilities. With the large number of students in our class (55 children), the use of a smaller sample size was more appropriate for the study. Having a sample group of children who seemed to be able to accurately assess themselves (based on similarity of cross-referenced teacher and student perception) as learners provided the researcher with the ability to begin the intervention right away rather than take the time to teach lessons on self-assessment. Three groups of five students were made that included students who were above average in student ability to regulate their learning (scoring 4 or above in mean), students in an average range (2.5-3 mean score), and below average (1-2.4 mean score). These three student groups allowed for the analysis of the impact this work has on students from three starting levels of self-regulation. Figure 1 shows the data of the students selected for the sample group.

Student Sample Group Selection - Student Life Last Year

Student	Work Completion		Project Completion		Understand Content		Being Prepared		Student Effort		Quality of Work		Mean
	Teacher	Student	Teacher	Student	Teacher	Student	Teacher	Student	Teacher	Student	Teacher	Student	
Above													
1*1	4	4	4	4	4	4	5	4	5	4	4	4	4.2
1*2	5	4	4	3	4	4	4	3	4	4	5	4	4
1*3	5	5	5	5	4	4	4	5	4	5	4	4	4.5
1*4	5	5	5	4	4	5	5	4	5	5	5	5	4.8
1*5	4	5	4	5	4	4	4	4	5	5	4	5	4.4
Average													
2*1	3	3	3	3	3	2	3	3	4	2	3	3	2.9
2*2	3	3	3	3	3	2	3	3	3	3	3	3	2.9
2*3	3	3	3	3	3	3	3	3	3	3	3	3	3
2*4	3	4	3	4	2	3	3	4	4	5	3	3	3.4
2*5	3	3	3	4	2	3	3	3	3	3	3	3	3
Below													
3*1	1	2	2	2	2	3	2	3	2	3	2	3	2.3
3*2	1	1	2	2	2	2	1	1	2	2	1	2	1.6
3*3	1	1	1	1	2	1	2	1	1	2	2	2	1.4
3*4	2	2	3	5	3	4	2	2	2	4	2	3	2.8
3*5	1	2	1	1	2	3	2	2	2	2	2	2	1.8
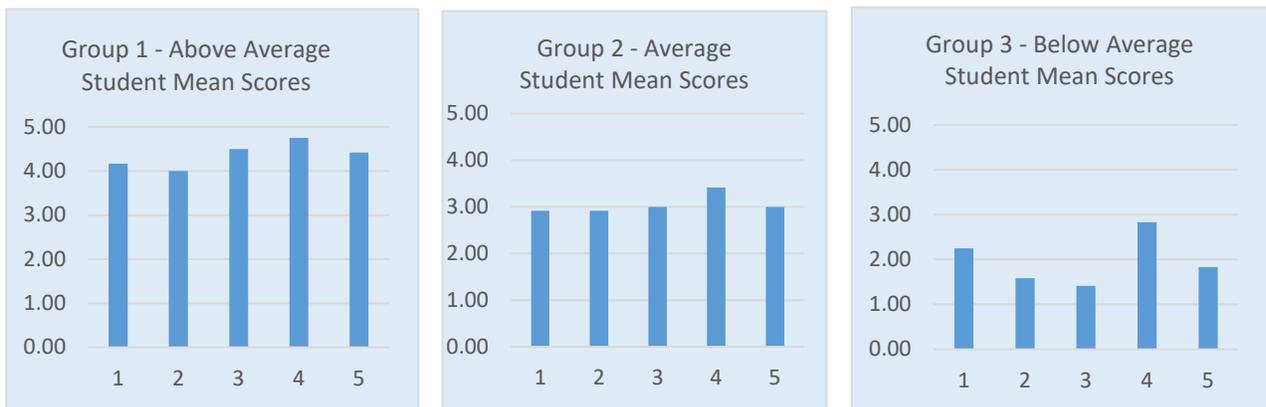
Figure 1. Student sample group selection based on Student Life survey

After the selection of the sample group, students received the Self-Regulation Questionnaire (SRQ) (Appendix D) to determine a baseline for their perception of their ability to self-regulate their learning. Questions asked for the students' self-perceived ability for both positive and negative self-regulation traits in the categories of goal setting, goal monitoring, and goal reflection. This measure was assessed again after the six week intervention. Figure 2 shows the data for the positive self-regulation traits for all three categories.
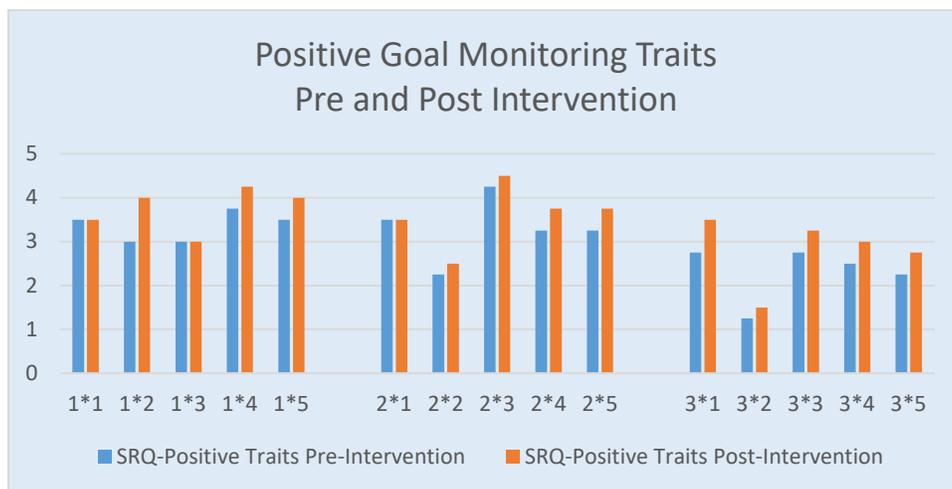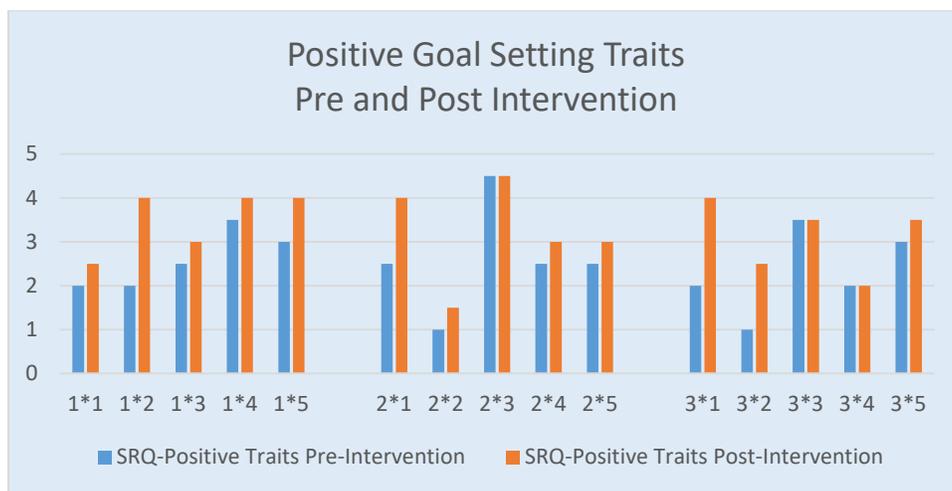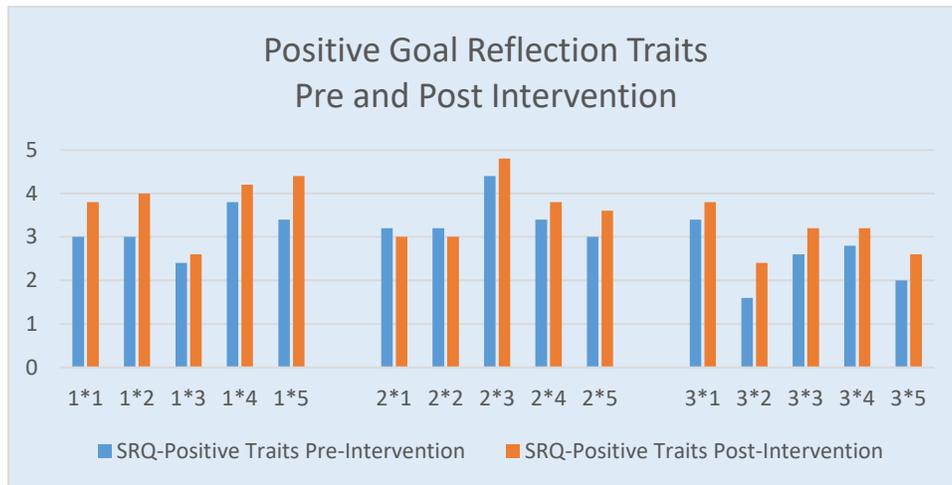
Figure 2. Pre and post intervention positive trait mean score

There was an increase in perceived, positive self-regulation traits in 82% of the students from pre-intervention to post-intervention. Overall, 13% of students had no change in their perception of their positive self-regulation traits, and 4% of students reported a decrease of positive self-regulation traits. One hundred percent of students reported an increase or no change to their perceived self-regulation abilities for goal setting and goal monitoring.

The same measure (Appendix D) also quantified negative self-regulation traits. These traits asked students to measure difficulties they had in the areas of goal setting, goal monitoring, and reflection on their goals. Figure 3 shows the negative self-regulation trait perception.

Negative Goal Setting Traits
Pre and Post Intervention

Negative Goal Monitoring Traits
Pre and Post Intervention
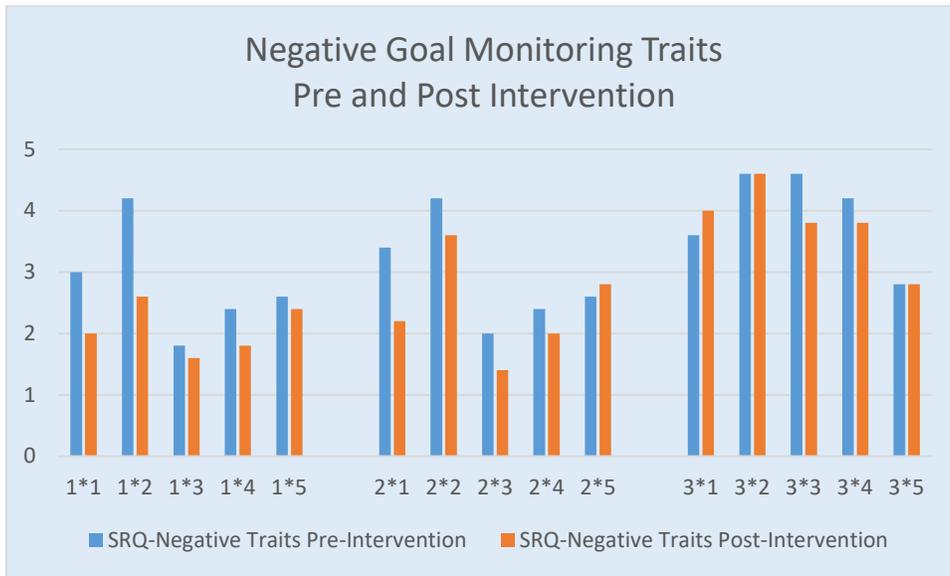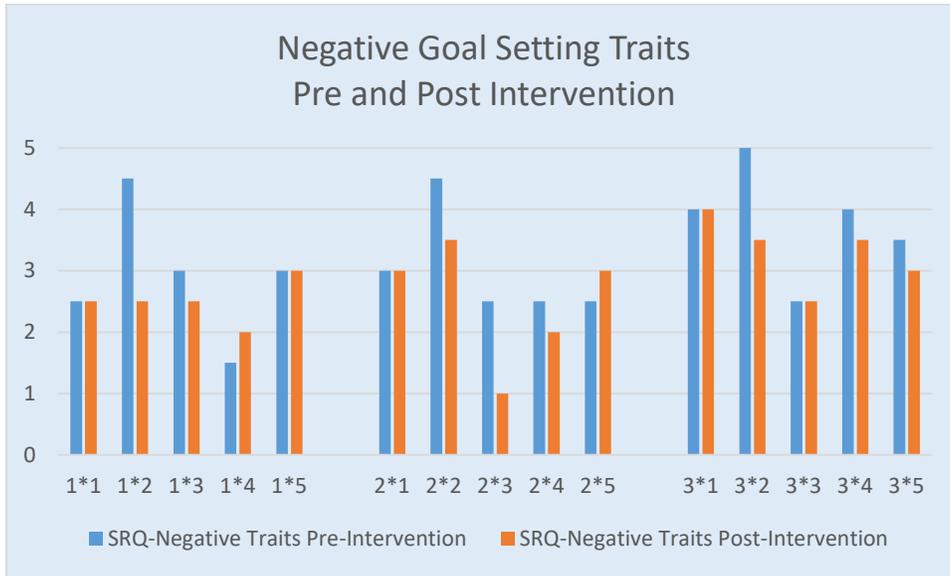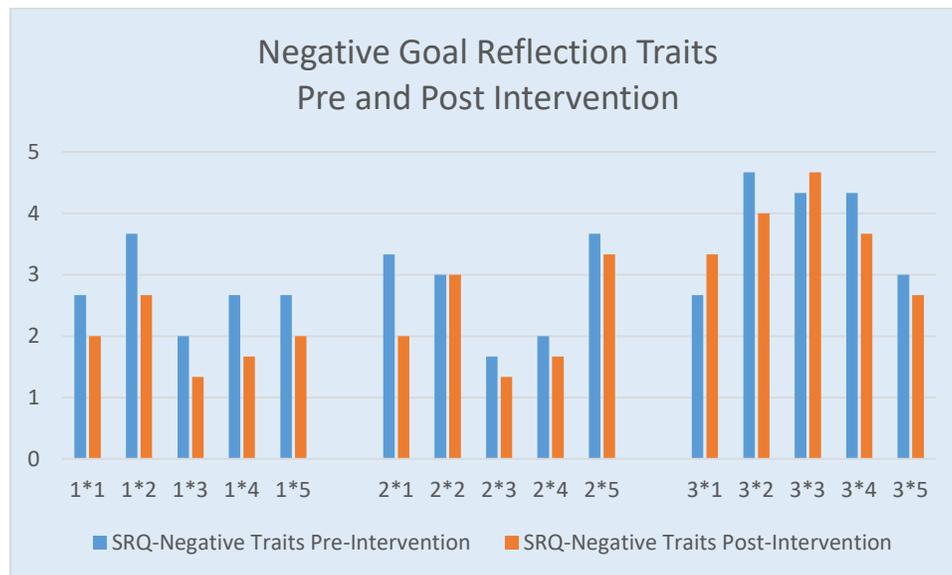
Figure 3. Pre and post intervention negative trait mean score

There was a decrease in perceived, negative self-regulation traits in 69% of the students from pre-intervention to post-intervention. Eighteen percent of students had no change in their perception of their negative self-regulation traits, and 13% of students reported an increase in negative self-regulation traits. Of note is the fact that 33% of the increase in negative self-regulation traits data came from one student who tends to be particularly hard on herself.

Teacher observation provided data on students' use of in-class work time using the Teacher Observation of On-Task Behavior Form (Appendix F). Along with regular observations, students were intentionally observed for this study using ten minute observations with thirty second increments to record findings. Students were either reported as on-task (performing a purposeful classroom activity) or off-task (including off-topic conversation, wandering, disrupting others, etc.) The data collected for this study included only the report of on or off-task behavior.
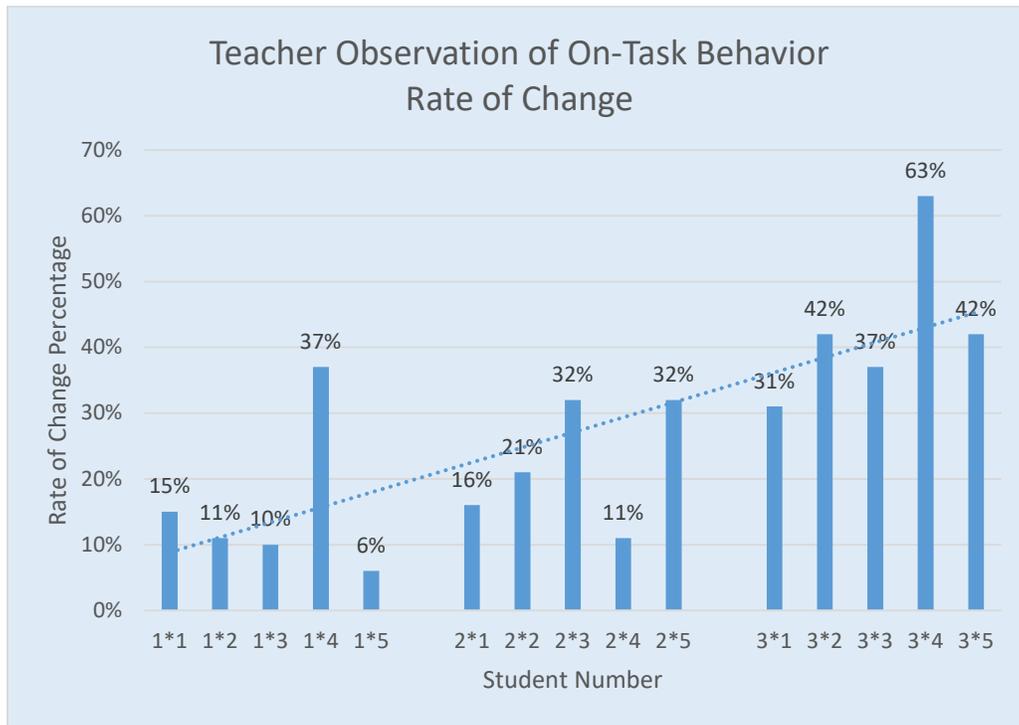
Figure 4. On-task behavior rate of change

The data revealed in figure 4 shows rate of change for student on-task behaviors pre and post intervention. The positive percentage for each student showed that 100% of students had an increase of on-task behavior from pre-intervention to post-intervention. Rate of change was calculated with student pre and post intervention on-task behavior percentage. For example, if student x displayed on-task behavior 15% of the time pre-intervention and 55% of the time post-intervention, student x would have a rate of change of 40% and the bar for that student would reach the 40% line for rate of change. Rate of change was calculated by finding the difference in on-task percentage pre and post-intervention. The most dramatic rate of change for on-task behavior occurred in the below average student group with a mean increase of 43% in the amount of times students in this group were observed being on task comparing pre intervention to post intervention. The average students had a mean increase of 22.4% and the above average

students had a mean increase of 15.8%. The dotted line represents the mean rate of change in

relation to each group and shows the increase of rate of change from one group to the next.

The overall increase in student ability to stay on-task during worktime reflects on the

final measure of student weekly task completion. This is a weekly check in our classroom but

included below are the data from the week prior to intervention and the check-in six weeks later

following implementation of the intervention.
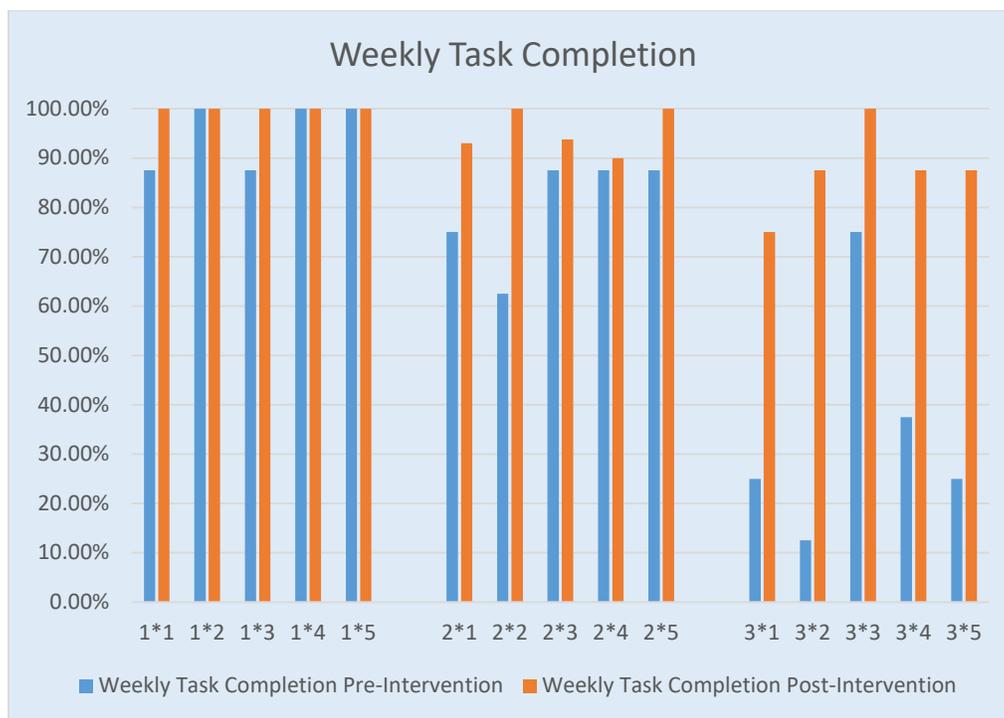
Figure 5. Student weekly task completion

The data showed that 100% of the students had an increase in the percentage of work that

they turned in over the six week intervention period. The most significant increase was, again, in

the below average student category. One student even showed a 75% increase in the amount of

work produced from pre to post intervention.

The data collected over the course of this study showed a positive correlation between the

implementation of a cyclical process of student goal setting, monitoring of progress, and

reflection and on task performance/intrinsic motivation. Middle school learners, who have a natural proclivity to be social, also have a drive to learn. The dramatic difference in on-task behavior data demonstrates that students who use a meaningful and detailed method of tracking their progress find more motivation in their work.

<div style="text-align:center">Action Plan</div>

The focus of this research was to determine whether intentionally introducing a cyclical process of goal setting, monitoring, and reflection would have a positive, negative, or neutral effect on student ability to self-regulate their learning. Results indicated there is a correlation between self-regulatory behaviors and an increase in student work time productivity and task completion. These self-regulatory behaviors were acquired through intentional lessons and materials designed to help students manage their own learning. Student work time increased for on task behavior by an average of 27%, with 100% of students observed having an increase in on-task behavior. Student assigned task completion also increased from pre-intervention to six weeks later by an average of 25%. This evidence of an increase in student ability to regulate their learning time and work production supported the continuation of self-regulatory behaviors.

The results indicated that the incorporation of self-regulatory lessons and methods of record keeping should be a permanent part of the classroom activities. Within three weeks of the SR notebook implementation, students were independently accessing their goal tracking sheets (Appendix G) and recording the progress they were making toward their goals. Several students asked to assess certain standards early because they felt confident that they could show mastery (80% or higher) even before practice work occurred. These students had the opportunity to be appropriately placed into work and have their individual needs met. Students were working on leveled tasks which may have also contributed to the increase in task completion. I plan to

continue inclusion of the SR notebook in daily proceedings of our classroom. The notebook, as well as time for the children to set goals, monitor their goals, and reflect on goals will continue as a cyclical process in each of the content areas. I also plan to introduce the use of this process for the students' personal goals. Now that the routine is in place, students will explore other areas that they want to improve. The format of documentation can remain consistent with the tracking sheet or can be completed as a written reflection depending on the nature of the goal (whether it is qualitative or quantitative). I believe this connection between academic (measureable) goals and personal (often unmeasurable) goals is important to help students become well rounded in the area of self-regulation. The addition of a "Personal Goals" tabbed section in the SR binder will include goal tracking sheets as well as lined paper. All goals should include a start date, reflection on their starting ability, a place for recording progress or the activities being done to accomplish the goals, and more reflection as the students make strides toward self-selected goals.

In addition, I would like to study the effect that intentional conversation and student interviews have on student self-perception of their ability to self-regulate. The data results in the area of students' self-perception, as identified in the Self-Regulation Questionnaire (Appendix D), were inconsistent and unremarkable. Some students actually reported a loss of positive self-regulatory behaviors and an increase in negative self-regulatory behaviors. These conclusions may be the result of an increased awareness of these abilities after intervention. I question whether conversation about the connection between the cyclical process of planning, monitoring, and reflection and student growth in self-regulation might produce a more accurate sense of the increase in ability to self-regulate. The students' perception of their abilities did not match the observations and data that I collected as the guide. At the middle school age, intentionally

speaking about the subject being taught and connecting the work to the students' overall ability may result in a more accurate self-perception for the students.

I would also like to study the effect of parental involvement in the cyclical process on students' achievement. Parents are the most influential figures in the life of a child. Holding parent education meetings to introduce parents to the cyclical goal setting, monitoring, and reflection process their children will be using would provide a home/school connection to the work. If parents have knowledge about the process, they might be able to help their children identify and set goals outside the classroom. Parents would also be able to follow their child's progress at or in between parent/teacher conferences. Results of the effect of parental involvement could be gathered through student interviews as well as parent feedback forms.

The positive results of this study in both use of work time and production of work occurred over the course of a six week implementation of intervention strategies. I intend to continue the use of these strategies and will be monitoring the success of the intervention as the year progresses. It is my goal to expand the process to incorporate other areas of goal setting as well as introduce a focus on quality of work. I look forward to the continuation of this work in order to help middle school students become self-motivated, self-regulated learners who feel a personal stake in their use of time and ability to acquire knowledge.

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Appendix A
Informed Consent
Effect of Self-Regulatory Behaviors on Task Completion
Parental Permission Form

Dear Base 410 parents/guardians,

As you may know, I am a St. Catherine University student pursuing a Masters of Education degree with an emphasis in Montessori Education. As a capstone to my program I will be completing an Action Research project.

As one of the lead teachers of students at Okemos Public Montessori at Kinawa, I have chosen to learn about student involvement in the regulation of their learning behaviors. I am interested in this work because intrinsic motivation for task completion is so important to student's ownership of their learning. I am working with a faculty member at St. Catherine University and an advisor to complete this particular project.

Students will benefit from involvement in this research by receiving instruction and materials to assist them in developing self-regulatory learning behaviors. The experience of having intentional opportunities to develop the skills of planning, monitoring, and reflecting on their work will allow for students to develop executive functioning skills. There are no risks associated with this study.

The purpose of this letter is to notify you of this research and to allow you the opportunity to exclude your child's confidential data from my study.

If you decide you want your child's confidential data to be in my study, you don't need to do anything at this point.

If you decide you do NOT want your child's confidential data included in my study, please note

that on this form below and return it by September 6, 2017. Note that your child will still participate in the skill development lessons but his/her data will not be included in my analysis.

In order to help you make an informed decision, please note the following:

- I am working with a faculty member at St. Kate's and an advisor to complete this particular project.
- I will be writing about the results that I get from this research. However, none of the writing that I do will include the name of this school, the names of any students, or any references that would make it possible to identify outcomes connected to a particular student. Other people will not know if your child is in my study.
- The final report of my study will be electronically available online at the St. Catherine University library. The goal of sharing my research study is to help other teachers who are also trying to improve their teaching.
- There is no penalty for not having your child's data involved in the study, I will simply delete his or her responses from my data set.

If you have any questions, please feel free to contact me, by phone or email. You may ask questions now, or if you have any questions later, you can ask me, or my advisor, Karen Anway (KVAnway@stkate.edu), who will be happy to answer them. If you have questions or concerns regarding the study, and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739.

You may keep a copy of this form for your records.

_____   _____

Leslie Wertz   Date

OPT OUT: Parents, in order to exclude your child's data from the study, please sign and return by 9/5/17.

I do NOT want my child's data to be included in this study.

_____   _____

Signature of Parent   Date

Appendix B

Student Life Last Year - Student Version

Student Life Last Year

Name: _____**Date:** _____

Directions: As you consider the following, reflect on your student performance

last year. Rate yourself by placing a check in the box that best describes where

you were as a student last year in each area.

	Poor	Fair	Average	Very Well	Exceled
Work Completion					
Project Completion					
Working in Groups					
Understanding Content					
Classroom Behavior					
Relationship to Teacher					
Relationship to Peers					
Being Prepared					
Effort					
Quality of Work					
Enjoyment					

Appendix C

Student Life Last Year - Teacher Version

<u>Student Life Last Year: Teacher Version</u>

Name of Student: _____

Number of years child was in your classroom: _____

Directions: As you consider the following, reflect the student performance **last year**. Rate the student's effectiveness in each area by placing a check in the box that best describes the child's level at the end of your time with them.

	Poor Bottom 5%	Fair	Average	Very Well	Exceled Top 5%
Work Completion					
Project Completion					
Working in Groups					
Understanding Content					
Classroom Behavior					
Relationship to Teacher					
Relationship to Peers					
Being Prepared					
Effort					
Quality of Work					

Enjoyment					

Appendix D

SRQ: Self-Regulation Questionnaire

Please answer the following questions by circling the response that best describes how you are. There are no right or wrong answers. Work quickly and don't think too long about your answers.

	1 - Strongly Disagree	2 – Disagree	3 – Uncertain or Unsure	4 – Agree	5 – Strongly Agree
I usually keep track of my progress toward my goals.					
My behavior is not that different from other people.					
Other people tell me I keep on with things too long.					
I doubt I could change even if I wanted to.					
I have trouble making up my mind about things.					
I get easily distracted from my plans.					
I reward myself for progress toward my goals.					
I don't notice the effects of my actions until it is too late.					
My behavior is similar to that of my friends.					
It's hard for me to see anything helpful about changing my ways.					
I am able to accomplish goals I set for myself.					
I put off making decisions.					
I have so many plans that it is hard for me to focus on any one of them.					
I change the way I do things when I see a problem with how things are going.					
It's hard for me to notice when I've had enough (food, sweets, etc.)					
I think a lot about what other people think of me.					
I am willing to consider other ways of doing things.					

	1 - Strongly Disagree	2 – Disagree	3 – Uncertain or Unsure	4 – Agree	5 – Strongly Agree
If I wanted to change, I am confident that I could do it.					
When it comes to deciding about a change, I feel overwhelmed by the choices.					
I have trouble following through with things once I've made up my mind to do something.					
I don't seem to learn from my mistakes.					
I tend to compare myself with other people.					
I enjoy a routine and like things to stay the same.					
I can stick to a plan that is working well.					
I usually have to make a mistake only one time in order to learn from it.					
I don't learn well from punishment.					
I have personal standards and try to love up to them.					
I am set in my ways.					
As soon as I see a problem or challenge, I start looking for possible solutions.					
I have a hard time setting goals for myself.					
I have a lot of will power.					
When I'm trying to change something, I pay a lot of attention to how I'm doing.					
I usually judge what I'm doing by the consequences of my actions.					
I don't care if I'm different from most people.					
As soon as I see things aren't going right, I want to do something about it.					
There is usually more than one way to accomplish something.					
I have trouble making plans to help me reach my goals.					
I am able to resist temptation.					
I set goals for myself and keep track of progress.					

	1 - Strongly Disagree	2 – Disagree	3 – Uncertain or Unsure	4 – Agree	5 – Strongly Agree
Most of the time I don't pay attention to what I'm doing.					
I can usually find several different possibilities when I want to change something.					
Once I have a goal, I can usually plan how to reach it.					
I have rules that I stick by no matter what.					
If I make a resolution to change something, I pay a lot of attention to how I'm doing.					
Often I don't notice what I am doing until someone calls it to my attention.					
I think a lot about how I'm doing.					
Usually I see a need to change before others do.					
I am good at finding different ways to get what I want.					
I usually think before I act.					
Little problems or distractions throw me off course.					
I feel bad when I don't meet my goals.					
I learn from my mistakes.					
I know how I want to be.					
It bothers me when things aren't the way I want them.					
I call in others for help when I need it.					
Before making a decision, I consider what is likely to happen if I do one thing or another.					
I give up quickly.					
I usually decide to change and hope for the best.					

Appendix E

Verification of Weekly Work Completion

Student Name	Assignment			
	Timeline Follow up	Factors chart	Multiples Chart	Self-Selected Work
1-5				
2-5				
3-5				
4-5				
5-5				

Appendix F

On Task/Off Task Observation Form

	On task	Off task	Description of off task behavior
30 sec.			
1 min.			
30 sec.			
2 min.			
30 sec.			
3 min.			
30 sec.			
4 min.			
30 sec.			
5 min.			
30 sec.			
6 min.			
30 sec.			
7 min.			
8 min.			
30 sec.			

9 min.			
30 sec.			
10 min.			

Student:_____ M   F   Date: Observer:_____   Time Started:____Time Completed:____

Appendix G

Tracking Progress to My Goals

Shade in the chart for your pre-assessment, post-practice assessment, and reassessment (if needed) scores to monitor your growth.   Name: _____

	Assessment			Assessment			Assessment			Assessment		
	Pre	Post	Re (if needed)	Pre	Post	Re (if needed)	Pre	Post	Re (if needed)	Pre	Post	Re (if needed)
100%												
90%												
80%												
70%												
60%												
50%												
40%												
30%												
20%												
10%												

	Standard	Standard	Standard	Standard
	I can…	I can...	I can...	I can…