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The Effects of Goal Setting and Self-Reflection on Student Work Completion and Work Habits in a Montessori Upper Elementary Environment

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Abstract

This study implemented goal setting and self-reflection as self-regulated learning strategies and explored how these affected student work completion and on-task behavior. Students in this environment struggled with self-regulated learning and were observed to not complete work on time and needed redirection to focus on work during the work cycle. The study took place in an upper elementary Montessori environment at a private international school. Thirteen 4th grade

students (ages 9-10) participated in the study. During this study, students were given lessons on goal setting and self-reflection and had group discussions about effective goal setting. Students set daily goals for themselves during the study and evaluated their progress at the end of the day. Students met with the guides for pre, mid and post-assessment discussions, where they reflected on their goals and progress. Students were observed twice daily for on and off-task behavior, and follow-up work was checked for completion. Despite the challenges of conducting this study during the COVID-19 pandemic, the results showed that student work completion and on-task behavior increased after students began setting goals. In particular, it proved to be beneficial to students who previously struggled with completing work. Further studies could look into integrating goal setting in a more streamlined manner to increase student engagement and interest.

Keywords: goal-setting, self-regulated learning, elementary, Montessori

Through her observation of children, Dr. Montessori determined that there are distinct stages of child development which she referred to as the “four planes of development.” These specific physical and psychological needs at each stage of development inform the Montessori educational approach, and these tailored classroom environments continue to meet these needs (Montessori, 1971).

The elementary years, when children are ages six to twelve, constitute the second plane of development. Dr. Montessori believed that the elementary age is the most intellectual period of life and that children of this age have an immense thirst for knowledge (Montessori, 2007). While first plane children (birth to six years old) seek to order the physical world around them, children in the second plane need intellectual order. Through their learning and explorations, they seek to understand the world around them and place themselves within this larger context.

In order to meet this need, Montessori elementary teachers, referred to as "guides," prepare a class environment where students can direct their own learning and present on a variety of topics to spark interest within the students. This structure of the elementary environment allows students to pursue their interests and conduct their own learning by providing a 3-hour uninterrupted work cycle. Students choose their own work and projects during this cycle, receive lessons in small groups, care for their environment and engage in creative and manipulative work, all with little adult intervention. In order to succeed in such an environment, students are expected to organize their work, keep track of time, and complete follow-up work based on lessons. These skills require students to engage in self-regulated learning (SRL). Balancing the freedoms of the environment with these responsibilities can be a challenging task for many elementary students.

The environment in this study provided a 3-hour uninterrupted work cycle each morning, where the students were free to choose their work while also attending lessons given by two Montessori guides. The guides observed that the students often needed direction or redirection during the work cycle to choose work or when they were exhibiting off-task behavior, such as chatting or running and playing in the classroom. While some students had work in front of them, they were not actively engaged in or concentrated on the work. The guides observed that many students did not complete the follow-up work on time and that the quality of the work appeared rushed.

Having a specific goal in mind can often help individuals work towards a specific objective and focus their actions and work. Research has shown that setting goals can be an effective tool in the classroom. Not only can it lead to an increase in academic performance (Kistner, 2010), but it also supports motivation in students and their self-efficacy (Chang, 2018). When students set their own goals, it leads to a sense of ownership in their learning process.

This study implemented goal setting and self-reflection with fourth-grade participants in an upper elementary environment. Thirteen students participated in the study within an environment of 33 students, ages 9-12. By having students set daily goals for themselves, this study aimed to support children in focusing more on their work during the work cycle and allowing them to reflect on their success and difficulties in reaching their goals. This study looked at the effects of goal setting and self-reflection on student work completion and work habits in a Montessori upper elementary environment. Utilizing qualitative and quantitative methods, including surveys, observation, and work completion tallies, this research looked to support students in effectively managing their time and behavior and helping them engage in work that is interesting and constructive.

Theoretical Framework

The concepts of freedom and responsibility within the Montessori method provide a framework for this study. The Montessori class environment provides freedoms to the children, such as choosing their work, choosing where and with whom to sit, and how long to do a particular work. "Work" within a Montessori class environment refers to a productive activity chosen by the child that engages and meets their developmental needs. Typically based on a lesson, students may use hands-on materials or work on paper. Giving the children these freedoms allows them to follow their interests and engage in productive work that supports their development. However, Dr. Montessori put forward that these provided freedoms must be balanced with corresponding responsibilities (Montessori, 2007). Children must choose to work and choose productive work. Their choice of seating within the environment must allow themselves and others to concentrate. Montessori guides need to guide and support the children in balancing these two concepts to ensure that they are doing work that will support their learning.

The theory of self-regulated learning (SRL) also frames this research. Zimmerman (2000) stated that self-regulation is the personal thoughts, feelings, and behaviors of individuals systematically adjusted to reach a personal goal. Self-regulation is a "proactive process" that includes behaviors such as goal-setting, using specific monitoring strategies, and evaluating the outcomes (Zimmerman, 2008, p. 166). This process of self-regulation is cyclical and consists of three phases: forethought, performance control, and self-reflection processes. In the first phase, students set goals and plan; in the second phase, students engage with specific strategies and monitor their progress; and in the third stage, students reflect and evaluate themselves (Zimmerman, 2008).

This study relates to these two theories as it attempts to support students with self-regulatory behaviors within the freedoms provided in a Montessori setting. Research has shown that students are more likely to experience increased academic performance (Kistner, 2010) and emotional well-being (Diamond, 2013) when employing self-regulation strategies. By setting goals and engaging in self-reflection, students will learn strategies to regulate their behavior, concentrate on work, and work more successfully. Students need to effectively use self-regulatory learning strategies to operate within the freedoms of a Montessori environment and engage in their own learning.

Review of Literature

Self-regulation is an important skill needed in the classroom, particularly within the freedoms of a Montessori environment. Students are expected to choose their work, manage their time, and balance academic work with other social interactions within the work time. Effectively employing self-regulation and executive function skills is necessary for completing work and sustaining motivation for learning. Executive functions and self-regulated learning are critical in students' ability to adjust and consolidate their learning in various areas (Cirino et al., 2018). Research shows that goal-setting and self-evaluations are effective components of self-regulated learning. When students set goals and reflect upon them, it increases student motivation, performance, and effort put into their work. This study will look at what effect implementing goal setting and self-reflection will have on student work habits and completion in an upper elementary Montessori classroom. This review of literature looks at the effects of self-regulated learning strategies of goal setting and self-reflection and best practices on how to implement self-regulated learning within a classroom environment. It can be concluded that these strategies will positively impact student work habits.

Self-Regulated Learning

Self-regulated learning (SRL) is the process in which students adjust their thoughts and behaviors in order to reach a personal goal. These self-regulatory behaviors include organizing materials, monitoring progress, and adjusting behavior as needed, all in pursuit of a particular goal (Schunk, 2004). Zimmerman (2008) also stated that these specific behaviors include setting goals, employing monitoring strategies, and evaluating oneself. Clearly and Zimmerman (2004) further detailed these behaviors and put forward a cyclical model of self-regulated learning. They postulated that self-regulated learning occurs in three cyclical phases: forethought and planning, performance monitoring, and reflecting. Students set goals, record their outcomes, and evaluate themselves during these phases. In the first phase, students set goals and plan. Students engage with specific strategies and monitor their progress in the second phase. In the third stage, students reflect and evaluate themselves (Zimmerman, 2008).

Executive function is a concept closely related to self-regulation. Executive functions are the cognitive abilities that allow us to plan, think creatively, and respond to challenges. Diamond (2013) stated that there are three fundamental executive functions: inhibition, which is the ability to employ self-control, working memory, and mental flexibility, which is the ability to think creatively. They are the processes that allow us to plan, organize, and carry out actions to meet goals, particularly in new or challenging situations (Takacs & Kassai, 2019). While both of these concepts are related, Diamond stated that researchers who focus on executive functions focus more on thoughts and actions, while self-regulation focuses more on emotions (Diamond, 2013). Executive functions are similar to self-regulated learning because they help regulate goal directed behavior (Cirino et al., 2018). Being able to employ these self-regulatory behaviors and executive functioning skills has been linked to academic performance and emotional well-being (Diamond, 2013).

Researchers have identified motivation as a key component of self-regulated learning. Promoting intrinsic motivation is fundamental in a Montessori environment. Montessori focused on following the child's interests and postulated that the child does their own learning. She said, "Our aim is not merely to make the child understand . . . but to so touch his imagination as to enthuse him to his inmost core. We do not want complacent pupils, but eager ones" (Montessori, 1989, pp. 8-9). We present a variety of topics to the children and step back and allow them to choose and follow their interests.

Students who engage in self-regulated learning set their own goals and direct and adjust their behavior towards reaching their goals. Motivation is the foundation for working towards goals and focuses self-regulated behaviors as students work towards those goals (Schunk, 2004). Students who are motivated are more likely to employ these behaviors, and completing work and goals will keep students motivated. If students can effectively engage in these types of self-regulation and executive functioning behavior, it can positively affect motivation within the learning environment.

Goal Setting

Interventions to promote self-regulated learning and intrinsic motivation have focused on goal setting and self-evaluation. Studies have shown that goal setting is a crucial component for improving self-regulated learning, as students feel more ownership and are more meaningfully engaged in their learning. Chang (2018) stated that in order to achieve a set goal, students need to regulate their behaviors to make progress towards it (Chang, 2018). Locke and Latham (2006) further clarified that the regulatory behaviors required to reach a goal include students' attention, efforts, and actions (Locke & Latham, 2006). Results have shown that it improves self-regulation within students, but it will also contribute to student motivation, self-efficacy, and the effort that

students put into their work (Chang, 2018). Thus, setting goals can help students regulate their behavior, but there is also a positive effect on motivation and effort.

Goal setting is more effective when students themselves are involved in setting their own goals, rather than the teacher setting goals for the students. Students need to identify with and see the importance of their goals; otherwise, the goals will have no meaning for them (Chang, 2018). Gerani (2020) found that when students were able to set their own goals, they felt more in control as they could make their own decisions and thus became active agents of their own learning. Students also felt that because they could work at their own pace, they enjoyed the lessons more (Gerani et al., 2020). Involving students in setting their own goals helps them be conscious of their importance and helps them feel ownership over their learning.

Researchers agree that goals need to be both specific and challenging to be effective. Researchers found that it is better to set more difficult yet attainable goals rather than vague and easy ones (Gerani et al., 2020). Locke and Latham (2006) found that specific and challenging goals led to an increased level of task performance instead of vague goals (Locke & Latham, 2006). Several researchers put forward the acronym SMART as a tool for setting goals. S for specific, M for measurable, A for achievable, R for relevant, and T for time-bound. Day and Tosey suggested another acronym, POWER, that is more effective for students. P stands for doing something positive rather than trying not to do something. O stands for the student's own role in achieving the goal. W stands for what specifically? Students will need to consider what they will need to do or what resources might be needed. E refers to evidence, or what will tell the students that they have made progress. R refers to relationships, as students need to consider how this will affect their relationships (Day & Tosey, 2011).

Teachers need to teach goal-setting strategies to students explicitly. While teachers can support self-regulated learning explicitly and implicitly, research has shown that students are more successful when explicitly taught these strategies. Teachers should explain a specific strategy to make sure students understand, while implicit instruction involves the teacher modeling a behavior to students (Kistner, 2010). Kistner found that explicitly teaching specific self-regulation strategies, such as organization strategies, positively impacted student performance (Kistner, 2010).

Self-Evaluation and Reflection

Self-evaluation and reflection are a part of the goal-setting process and are critical in self-regulated learning. Students self-evaluate or self-assess their work when they describe and attach value or worth to their work or progress. Masui and De Corte (2005) found that when students were taught reflective and attributive strategies, they increased in academic achievement (Masui & De Corte, 2005). Learning to reflect is an ongoing process for students, and it has been shown that it is more effective when self-reflection strategies are explicitly taught. Students need to articulate the purpose of self-reflection to engage in it (Coulson & Harvey, 2013).

A part of the self-reflection process is attribution, which is the ability to attribute and look at successes and failures constructively. Masui and De Corte implemented an intervention in self-reflection and attribution. Students reported that they felt more in control of their academic performance and could articulate reasons for their successes or failures (Masui & De Corte, 2005).

Studies have found that when students set goals for themselves and then evaluate their progress and work, there is an increase in motivation and satisfaction with learning. When teachers use interventions to encourage student self-assessment, there is a positive effect on self-regulated learning and student self-efficacy (Panadero, 2017). When students evaluate

themselves positively, this leads to a feeling of success, which leads to feeling successful about learning and feelings of motivation. This can further lead to self-regulated learning as students believe they are capable (Schunk, 2004).

Based on this review of literature, by trying to implement self-regulation interventions of goal setting and reflection, a teacher can expect to see improvements in student work completion. The research indicates that developing self-regulated learning behaviors is crucial for student achievement. In an upper elementary Montessori environment, students are given the freedoms to choose work, choose who to sit with, and what to work on. However, students are expected to choose their own work, complete follow-up work in a timely manner, and balance this work with socializing. Balancing these two has been a challenge for many upper elementary students. This research study aims to introduce goal setting and reflection to support self-regulated learning within this environment.

Methodology

This research focused on self-regulated learning (SRL) strategies that support work completion and engagement in work in upper elementary students. Many of the students in this classroom seemed to struggle with the freedoms provided within a Montessori elementary environment. They did not use their time effectively and struggled to find and complete work that interested them. This study aimed to implement the self-regulated learning strategies of goalsetting and self-evaluation to help students complete work and improve work habits.

The population for this study was students in an upper elementary classroom (4th, 5th, and 6th graders) in a private Montessori school. Located in a large international city, students in this school encompass various nationalities and backgrounds. The subjects who participated in the study were thirteen 4th graders, ages 9-10. One 4th grade student was excluded from the study because of absences due to the COVID-19 pandemic. Four of the students were girls, and nine

were boys. Eight of the students spoke a language other than English as a first language. Five of the students attended Montessori for their primary years, four began Montessori in lower elementary, and four were new to Montessori within the past two years.

The intervention employed in this study included introducing specific strategies for self-regulation, having discussions about goals, exploring how to set realistic goals, and explaining methods to support children in self-evaluating progress. The study lasted for six weeks, where baseline data and pre-assessment discussions occurred in week 1, and the intervention began during the second week.

During the first week of the study, the students attended lessons introducing goal-setting and self-evaluation through group discussions led by the guide. During the first week of the study, these lessons took place during the class read-aloud time after lunch and recess. In the first lesson, students discussed what goals are in general and defined a goal as something to work towards. Students also discussed why goals are important, both within and outside of school. Students shared examples of goals they had set in the past or could set in different situations.

In the second lesson during the first week of the study, students were introduced to SMART goals (Specific, Measurable, Achievable, Relevant, and Time-Bound). As a group, the students came up with specific examples of goals. For example, rather than setting a goal to "try to do more math," students decided they could set a specific goal to “do five long division problems” to make their goal measurable. Students also talked about setting achievable daily goals and discussed how to break up a larger goal into smaller daily goals to make it achievable.

In the third lesson, the discussion focused on how to measure their progress and reflect upon it. The students talked about possible obstacles that could prevent them from achieving their goals, such as sitting next to friends during the work cycle or leaving their work until the end of the day. Students also identified what could help them reach their goals, such as having a

friend remind them or asking for help when they were stuck. Students were asked, "How do you know that you have made progress?" to help in this discussion.

The data collection tools used in this study were quantitative and qualitative, focusing on obtaining information on student work habits and work completion, their attitudes towards goals, and their overall progress. During the first week of the study, students participated in preassessment student-teacher discussions (see Appendix A) as a part of student-teacher work conferences. Work conferences are a regular part of the Montessori elementary environment. During these meetings, students meet with the guides to discuss and show their work, and this is an opportunity for the guide to check and review the student's work and work choices with them. Not only is this the time for the guide to review the student's work for accuracy and understanding, but the guide will also discuss with the student what type of work they are choosing. In addition to these topics, students were asked about their perceptions of their work habits during the work cycle. They were also asked if they have ever set goals for themselves, whether they usually meet those goals, and what they do to help themselves accomplish them. These pre-assessment questions and discussions helped determine students' experiences with goal-setting and their perceptions of how they spend their time during the work cycle.

Teacher observations were a quantitative data collection tool. Conducted during the first week of the study to establish baseline data, they continued throughout all six weeks of the study (see Appendix B). Observations of students took place during the morning work cycle for student activity, once at around 9:45 a.m. and again at 11:00 a.m. The observation tool was a checklist that included whether students were in lessons, engaged in work, had out work but were not engaged, or were doing other off-task behavior. The sheet also included a comments section for

anecdotal observations. Observing these work habits throughout the study was designed to help see whether goal-setting affected how students spent their time during the work cycle.

Another data collection tool was a checklist of work completed during each week of the study (see Appendix C). This checklist was used in the first week for baseline data and continued throughout the entire study. The form had a column for each subject area, and at the end of the week, the guides checked off whether a student had completed the required follow-up work or not. This quantitative data tool tracked the frequency of work completed by students throughout the study.

The fourth tool was the student goal-setting and evaluation sheet (see Appendix D). In addition to the group lessons on goal-setting, students received small group lessons on using this tool at the end of the first week. Students glued this sheet into their work journals, small notebooks used by students to keep track of what work they do throughout the day and for how long. Expected to have their work journal with them throughout the day and fill it out, students gluing their goal sheets into them made them readily accessible throughout the day. Students spent the first part of the morning filling out their goal for the day and then completing the reflection part of the sheet at the end of the day. The guides checked these sheets for completion every day and reviewed them more closely with the student during work conferences.

Students also answered questions (see Appendix E) about goal-setting during their biweekly work conferences. In addition to the regular work conference topics, the student and the guide reviewed their goal sheet, and the guide asked the student to reflect upon what they noticed about the days when they completed their goals. Also, the guide asked if and how they could help them reach their goals.

In the sixth and final week of the study, students participated in a post-assessment work conference with the guide (see Appendix F). Each student reflected upon their goals over the past six weeks, using the goal sheets in their work journal as a reference. Guides asked the students what could have helped or hindered them from reaching their goals and whether this experience of setting goals was helpful for them.

Analysis of Data

This study aimed to determine the effects of daily goal setting and reflection on student work habits and work completion in an upper elementary Montessori environment. The participants in this study were thirteen 4th graders in a class with 4th, 5th, and 6th graders. The data collected in this study included both quantitative and qualitative methods, including teacherstudent discussions, work completion tallies, daily observation, and student goal-setting sheets. It is important to note that week two of this study was a three-day week due to mid-winter break, with students only attending school Monday, Tuesday, and Wednesday. Students returned for week three of the study after a 4-day vacation.

Work Completion

Students in this environment receive follow-up work after each lesson that is generally due the following week at the next lesson. During all six weeks of this study, this follow-up work was checked and recorded for completion on a student work completion checklist by the guides. If students completed their work with demonstrated effort, they were marked as complete. If students did not complete or only partially completed their work, or if the guides determined that they did not put effort into it, it was marked as not complete. It is important to note that students did not begin setting daily goals until the second week of the study, but work was checked during the first week to establish baseline data. Figure 1 shows the weekly averages of all students' work

completion. The data shows that overall work completion increased from 78% to 90% after the students began setting daily goals for themselves.

The mid-winter break likely affected this data. Due to week 2 being a shorter week, there was less follow-up work assigned, thus possibly leading to a higher completion percentage. The decrease in completion in week three could be due to students readjusting to work and expectations after returning from the mid-winter break. In the last weeks of the study, the work completion rate continued to increase, reaching the highest at 91% in week 5. The study concluded in week 6 with a work completion rate of 88%.

Figure 1

Overall Percentage of Work Completed

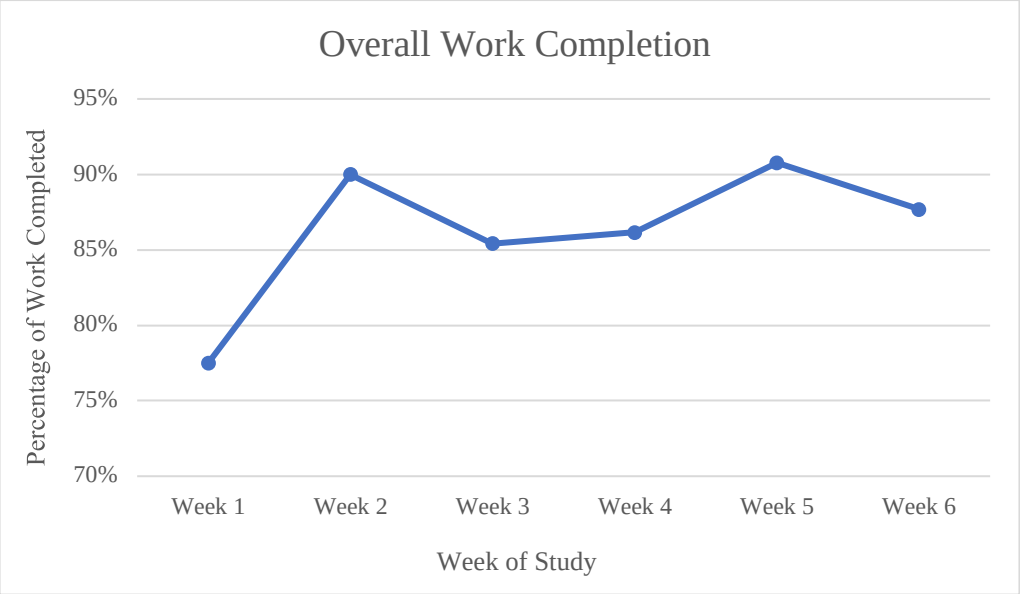


Figure 2 illustrates the percentage of work completion by week broken down by individual student. Students were usually given four to five required follow-up works per week during this study. For example, a 60% completion rate meant that a student completed three out of five works. Three students (Students 7, 11, and 12) began week 1 of the study with a completion rate below 60%, and five total students began below 80%. By the end of the study, all three students who began below 60% had improved. In particular, students 11 and 12 reached almost 100%

completion during the final weeks of the study. Out of the students who began with a completion rate below 80%, all five showed improvement, ending the study with a higher completion rate than the first week. For these students, setting goals did seem to affect their work completion.

Students who showed improvement pointed to similar factors in their discussions with the guide. Student 4 said that goals helped his "brain to focus" during the work cycle. Student 10 said that goals were good and that setting a goal for something that he found challenging was helpful. The fact that these students could finish and complete more of their follow-up work on time indicates that they were engaging in self-regulated learning strategies. Focusing one's attention, efforts, and actions have all been identified as necessary components of self-regulated learning (Locke & Latham, 2006).

Other students did not have a significant change in their work completion. Students 3, 9, and 14 began with and stayed at 100% completion for the study's duration; similarly, student 6 also remained at a consistent completion rate. It is likely that goal-setting was not necessary for these students, as they already had the skills to make sure they completed their work on time.

Three students experienced a decline in work completion (Students 1, 2, and 10). Notably, in a discussion with the guide, student 10 said that while he understood that goals could help prevent him from getting distracted, he probably would not set goals for himself going forward because he would forget to set them.

It is important to note that students 1, 5, and 8 were absent for the first two weeks of the study due to COVID-19. These students were given the instructions and lessons on goal setting when they returned to school but only participated in the study for three weeks. Student 5 remained at a high work completion rate for all three weeks, student 8 showed improvement, and student 1 made some improvements but ended the study with a lower completion rate. The

variation between these three students could indicate that missing the beginning of the study and only participating for three weeks could not have been enough time for students to adjust to the new goal-setting routine.

Figure 2

Percentage of Work Completed by Student

Work Completed by Student

Student	Week 1	Week 6	Change
1	50% (Week 3)	40%	-
2	100%	60%	-
3	100%	100%	**no change**
4	75%	100%	+
5	100% (Week 3)	100%	**no change**
6	75%	80%	+
7	67%	100%	+
8	25% (Week 3)	100%	+
9	100%	100%	**no change**
10	100%	60%	-
11	50%	100%	+
12	50%	100%	+
13	100%	100%	**no change**

Observation

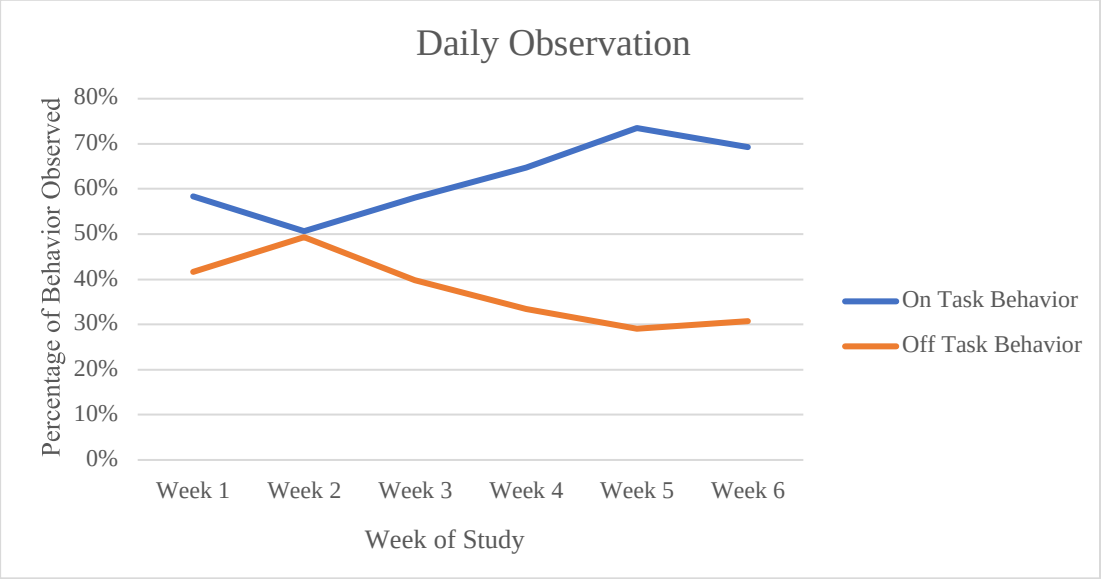
Observation occurred twice a day for all six weeks of the study at around 9:45 a.m. and 11:00 a.m. The guide observed for student on-task and off-task behavior during these observations. On-task behavior included: being in lessons, transitioning from a lesson or a work, or engaging in work. Off-task behavior included: students who were wandering around without having a workspace, students who had work out in front of them but were not engaged in it, and students who were doing other off-task behavior, such as chatting, running, or playing in the classroom.

As shown in Figure 2, there was an increase in on-task behavior from 58% to 74% at the highest in week five. Students began setting goals in week two, and despite a dip in on-task behavior this week, on-task behavior began to increase after students began setting daily goals for themselves.

This data was collected to explore how students' self-regulatory behaviors changed throughout the study. As previous research indicates, self-regulated learning is the ability of students to organize, plan, and monitor their learning (Schunk, 2004). The guides observed that students were more engaged in their work by collecting data regarding student work habits throughout this study.

Figure 3

Daily Observation for On Task and Off Task Behavior



Student Goal Setting and Reflection

Students received lessons on setting goals and reflection during the first week of the study and then set daily goals for themselves beginning in week two. Each morning, the guide reminded the students to set a goal for themselves and fill out the reflection form at the end of the

day. The guides checked this sheet and the student's work journals at the end of the day. In the first week of goal setting, many students simply set goals such as "finish my math follow-up" or "read A Wrinkle in Time." Previous research has shown that we are more likely to achieve our goals if we set challenging and specific goals (Locke & Latham, 2006). After discussing setting SMART goals, students began to set more specific goals. For example, one student chose to "make 3 geometric solids" and then later challenged himself to "make a decagonal prism" after receiving a lesson on solid geometry. Other students set measurable goals, such as "write chapters 1, 2, and 3 of my story." Other students set goals regarding organization, such as "starting my work journal in the morning" (rather than leaving it to the end of the day) and "organizing my locker." Some students also set goals for sp orts activities on P.E. days.

Previous research has shown that allowing students to set their own goals leads to increased student efficacy, as students feel that they can take a more active role in their learning (Gerani et al. 2020). In this study, students set goals that applied to them and their work, such as aiming to present a research project or challenging themselves to read a current events news article. These goals were not part of the weekly required follow-up work but show that these students set goals to challenge themselves by trying something new and possibly something that they might not have otherwise done.

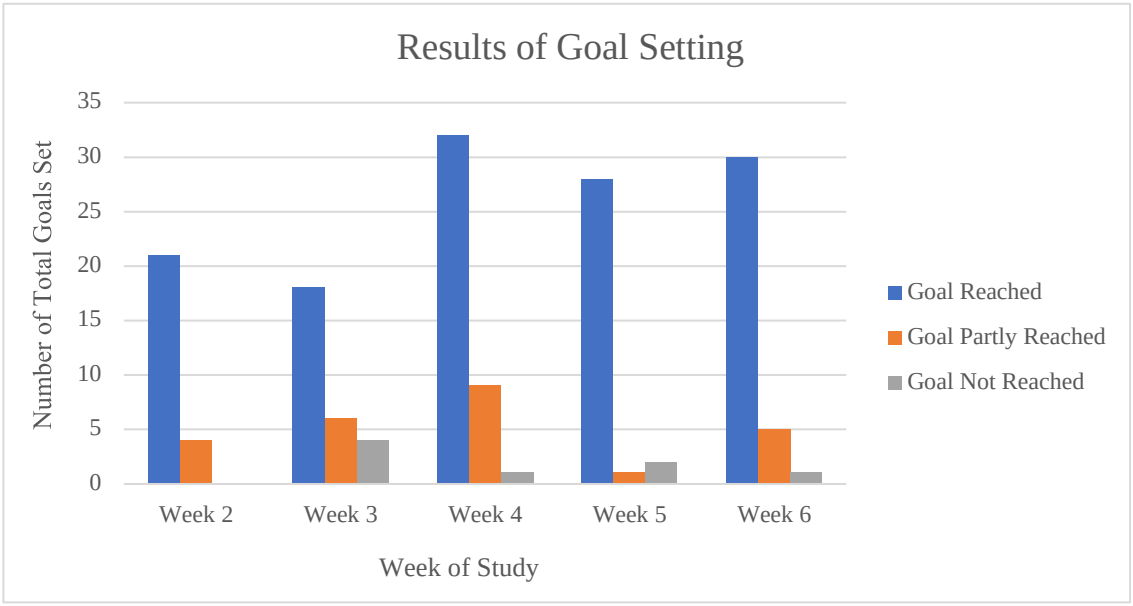
At the end of the day, along with completing their work journal, students filled out their goal sheet by indicating whether they had reached their goal, part of their goal, or not reached their goal at all, and then wrote their reflections. The sheet prompted students by asking, "What helped me reach my goal?" or “What could I have done differently?” Research has found that when students can reflect on their successes and failures constructively and identify possible reasons for why they were successful or not, they feel more in control of their learning (Masui &

De Corte, 2005).

Figure 4 shows the results of goals set by students, which is broken down into goals reached, goals partly reached, and goals not reached. The number of goals set each week differs significantly, partly due to student absences due to COVID-19 and students forgetting to set goals for themselves, despite reminders from teachers.

Figure 4

Student Goals



Students who successfully reached their goals indicated a few factors that helped them. Many wrote that starting first thing in the morning or doing the work during the morning silent work time was beneficial in helping to complete their goal. Other students wrote that they worked with a friend or asked someone for help. This question seemed confusing to some students, as many simply wrote "I don't know," "I just did it," or left the section blank. During work conferences, the guide discussed this with students and encouraged them to think about what specifically they did during the work cycle that helped them meet their goals. Research has shown that students need specific instruction on goal setting and reflection (Kistner, 2010, Coulson & Harvey, 2013). More specific instruction on reflecting and identifying what was helpful or not in achieving their goals would have been beneficial to many students.

Students who did not reach their goal mainly indicated that they should have started the work earlier rather than leaving it until the day it was due. Some students wrote "do it during silent work time," "do it yesterday," and "do it right after the lesson." Taking advantage of silent work time was identified as a help to many students. Balancing the freedoms of the Montessori elementary environment with students' responsibilities for work and behavior has framed this study. For most of the work cycle, students are permitted to choose their work seats and work partners and can freely move about the room. Students were able to recognize that silent work time is when they know that they will not get distracted could suggest that they were beginning to understand this balance between freedom and expectations.

Student-Teacher Discussions

Students also participated in student-teacher discussions throughout the study, held during work conferences. Each student participated in a pre-assessment discussion during week 1, another work conference during week 4 or 5, and a post-assessment discussion during week 6. These discussions were meant to help the guide further understand students' progress with their goals and support them in reaching and reflecting upon their goals throughout the study. During the pre-assessment discussions, the guide asked the students about their perceptions of their work habits and any experience with goal setting. When asked whether they were usually able to complete their work on time, many students said that they were able to, but some also said that they often left it to the day before or the day it was due. The guide also asked students how they spend their time during the work cycle. Most students answered this by discussing what they worked on that day. A couple of students said that while they were mainly able to focus on their work, they sometimes got distracted by friends and would chat or play. Seven out of the thirteen students said they had set goals for themselves in the past. These ranged from school-related goals to finishing follow-up work, writing more of a story, or sports and extracurricular goals.

During the bi-weekly work conferences, the guide asked the students about their progress on their work and their goals. After reviewing students' work and their work journals, the student and teacher reviewed their goals and had a discussion. As mentioned earlier, students struggled to identify factors that helped or hindered them from reaching their goals. Some students could articulate what helped them, such as asking for help or doing the work immediately. However, most students were unsure how to specifically identify obstacles or what they could do differently in the future.

In the post-assessment discussions, the teacher and student reviewed their goals and follow-up work together. As noted above, students struggled to specifically identify what could have helped or could have been an obstacle to their progress. During this discussion, students were again asked about the importance of goal setting, to which eleven students responded positively. When asked about the experience of setting goals and whether it was helpful to students, nine responded yes. The other students said that they were already setting goals or that they could finish their work without help.

Despite the challenges of carrying out this study during the COVID-19 pandemic, this study shows that goal-setting and reflection have the potential to affect student behaviors and work habits positively. The above data suggests that when students set daily goals for themselves, on-task behavior increases. Overall work completion also increased after students began setting goals, although the data shows that it was more beneficial for students who began the study struggling to complete work. For students who could already complete work on time, setting goals had no effect. The researcher observed that some students engaged more with goal setting than others, possibly due to a large number of absences or timing during the school year. Repeating this study at the beginning of the school year, where a culture of goal setting could be

established, could help with student engagement in goal setting. Students identified that completing work sooner rather than leaving it to the last moment was helpful and recognized that working with friends could be distracting. Most students did report that they thought goal setting was important and would continue to set goals in the future.

Action Plan

This research study implemented goal setting and self-evaluation as a strategy of self-regulated learning to support work completion and on-task behavior in an upper elementary Montessori environment. The guides observed that prior to this study, the students in this environment needed support in staying on task during the work cycle and completing follow-up work on time and with effort. Over the six weeks, students set daily goals for themselves, using their work journals to record their progress, and then completed self-reflection questions at the end of the day. The guide observed for on and off-task behavior, kept a record of work completion, and met with students to review their progress during work conferences.

While conducting this study during the COVID-19 pandemic presented challenges, some general conclusions can be drawn from this study. This research suggests that goal-setting can positively impact student work completion, particularly for students who were struggling in the beginning to complete work on time. Secondly, students exhibited higher rates of on-task behavior in the later weeks of the study. Finally, students seemed to recognize some key factors that could help them reach their goals as determined by student-teacher discussions, such as not leaving work until the last minute and understanding that they could get distracted by friends. This study aligns with previous research done on the topic. One study found that when students can regulate their behavior to pursue a goal, it increases student motivation and self-efficacy (Chang, 2018).

This research has several implications for my classroom going forward. I found goalsetting to be beneficial and motivating for some students. These students pushed themselves to go beyond the "follow-up work" in the class, or it gave focus to students' work for the morning. Going forward, I will continue to encourage my students to set goals for themselves in various classroom areas, albeit possibly in a less structured manner.

Making time for student-teacher discussions and check-ins during work conferences was something I always struggled with as a Montessori teacher. I purposely designed this research study to include work conferences as a way for me to check in with my students on a more regular basis and to understand and support them in their goals and progress. Throughout the study, I found work conferences to be extremely helpful. They served as a time for me to check in with goals and check student work, but I also found that it was a way for me to connect with students and find out more about their interests. Being able to discuss one-on-one with a student what they are struggling with or how to better support them in reaching a goal improved my teaching practice and made me more fully appreciate the purpose of work conferences within a Montessori environment.

While this study demonstrates the benefits of goal setting for students, going forward, I would make several changes to the approach of the intervention and would also recommend the same to other teachers looking to implement this in their classrooms. This study was implemented for six weeks, from January to March 2022, during the COVID-19 pandemic. This meant that many students were absent for several days or several weeks, meaning they missed a large portion of the study, including the initial discussion and instruction. Given the option, it would have been more helpful and impactful had I started this at the beginning of the school

year, where I could have encouraged a culture of goal setting rather than in the middle of the year. This would have also led more students to be more engaged in setting goals for themselves.

I found that some students struggled to engage with daily goal setting and either forgot to set a goal on some days or required many reminders to set a daily goal. Going forward, I will look for ways to increase engagement and interest in goal setting with my students by having more group discussions, brainstorming effective ways of setting goals or asking students to share success stories with one another. I found that only meeting for a few group lessons during the first week may not have been enough to engage the students.

Filling out the student goal sheets (Appendix D) may also have been an obstacle for some students. While work journals are a key component of fostering responsibility within elementary students, I found that many of my students still struggled with filling out their work journals every day. Adding in another sheet that they were expected to fill out twice a day was too much for some students, as they required many reminders to complete them. I felt this defeated the purpose of students setting their own goals. Going forward, I will look to incorporate goal-setting into the work journal in a more streamlined manner.

I also found that students would have benefited from more instruction in the self-evaluation section on their goal-setting sheets (Appendix D). Some students seemed confused by the questions and often answered "I don't know" or left it completely blank when asked about what helped or hindered them in achieving their goals. The literature shows that students need explicit instruction in self-reflection to engage with it (Coulson & Harvey, 2013). This is something that I will continue to work on with my students, and I encourage other teachers to spend more time discussing this as well.

There are several opportunities for further research that can be explored. This study only had 13 participants, so increasing to a greater participant size would give a clearer picture of the impact of goal setting in an educational setting. It could also be interesting to expand the age range of this study to include students in lower elementary classes (ages 6-9). Lower elementary students also have similar expectations regarding their responsibilities within a Montessori environment; thus, introducing goal setting at this age could be beneficial. Expanding goal setting to include long-term goals could also be an area for further research. I chose to have my students focus on daily goals but introducing longer-term goals and then working with students to break these goals down into more manageable goals could be a practical next step.

This study suggests that teachers can help students manage their time and foster more positive work habits by introducing goal setting. Students in this study turned work in more consistently and exhibited more on-task behavior when they set a daily goal. Setting goals and following through with them is an important skill needed within a Montessori environment. Balancing the freedom of choosing where to sit and with whom comes with high expectations and goal setting is a helpful strategy that students can employ to help fulfill their responsibilities. Learning how to set realistic goals for oneself is a valuable life skill and will benefit students through their upper elementary years and beyond.

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Appendix A
Pre-Assessment Questions (Week 1):
(to be asked during student work conferences)

1. Do you find that you are usually able to complete your work during the week?

2. How do you think you spend your time during the work cycle?

3. Do you think setting goals are important?

4. Do you set goals for yourself? What kind of goals?

5. If you set goals, what do you do to help yourself accomplish them?

6. Are you usually able to accomplish the goals you set for yourself?

Appendix B
Teacher Observation
Week of: _____

Day	Time	Tally of activity						
		In a lesson	Engaged in work	Work in front of student, but not engaged	Transitioning from lesson or work	Wandering around classroom	Other off task behavior	Notes:
Mon	9:45							
	11:00							
Tues	9:45							
	11:00							
Wed	9:45							
	11:00							
Thurs	9:45							
	11:00							

Fri	9:45							
	11:00							

Appendix C

Work Completion Tally

Week of: _____

Student	Math	Book Group	Writing	Japanese	Science	History	Other
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

Appendix D

Student Goals and Reflection Sheet

My Goals for the Week

Monday	My goal today is to...	Did I reach my goal? Yes No Part of my goal	What helped me to reach my goal?	What could I have done differently?
Tuesday	My goal today is to...	Did I reach my goal? Yes No Part of my goal	What helped me to reach my goal?	What could I have done differently?
Wednesday	My goal today is to...	Did I reach my goal? Yes No Part of my goal	What helped me to reach my goal?	What could I have done differently?
Thursday	My goal today is to...	Did I reach my goal? Yes No Part of my goal	What helped me to reach my goal?	What could I have done differently?
Friday	My goal today is to...	Did I reach my goal? Yes No Part of my goal	What helped me to reach my goal?	What could I have done differently?

Appendix E

Bi-weekly Work Conference Questions (Weeks 2-5):

1. How are you doing on your follow-up work this week?

2. What are your goals for the week?

3. What are you doing to meet your goals?

4. What do you notice about the days that you were able to accomplish your goals? Or the days that you didn't accomplish your goals?

5. What could you do differently?

6. Can I help with anything to support you in reaching your goals?

Appendix F
Post-Assessment Questions (Week 6):
(to be asked during student work conferences)

1. In general, were you able to complete your follow-up work over the past few weeks?

2. In general, did you meet your goals over the past few weeks?

3. What helped you to be successful in accomplishing your goals?

4. What might have prevented you from reaching your goals?

5. Do you think goal setting is important?

6. Do you think that setting goals and reflecting on the goals has been helpful to you?