

Effects of Practical Life Activities on Executive Function Skills

in Upper Elementary Montessori Students

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Abstract

An increasing body of research exists correlating executive function skills (EFs) with academic skills. This action research explored the development of executive function skills through the introduction of practical life activities including care of the classroom, sewing, knitting, and origami. In order to study the ways Montessori's idea of self-regulation, or *normalization*, is increased through purposeful activity, an eight-week study was conducted in a fourth- and fifth-grade classroom in an urban, public Montessori school in the Midwest. Data was collected using pre- and post-surveys completed by both students and parents and student tracking of frequency of activities on a class list. The researcher also observed classroom behavior and collected work completion and work submitted on time rates using classroom record keeping. After an introductory, whole-group lesson, students were able to choose practical life activities at any time during the daily work period as long as they had received a lesson in the practical life work they chose. Based on the Montessori principle of following the child, lessons were given to individuals and small groups upon request. The research showed that on-time work completion increased over the course of the study. The research also showed that parents noticed a change in their children's ability to manage time, organize, and complete work on time. Further research needs to be done on ideal practical life activities for pre-adolescent children, namely those that will increase the child's ability to normalize and increase productivity.

Keywords: executive function skills, Montessori, practical life, pre-adolescent

Introduction

Recently, there have been many studies examining the relationship between executive function skills and academic success. In my fourth and fifth grade classroom, I have implemented many organizational systems to help my students develop executive function skills and prepare for the organizational demands of middle school. Executive function skills include all the skills—time management, shifting between tasks, and self-regulation—necessary for planning and completing tasks. Utilizing planners, work folders, and late lists have been effective tools for the majority of my students, but there are consistently a handful of children who need increased support to develop the executive function skills they need to be successful. The Montessori area of practical life is covered extensively in Children’s House, but is less commonly available in the upper grades. After revisiting the writings of Maria Montessori and her explanations of practical life activities as purposeful and grounding endeavors for Early Childhood children, I began to wonder if implementing a practical life shelf in my upper elementary classroom would increase the executive function skills of my students.

The purpose of this action research study is to examine how practical life activities impact the development of executive functioning skills and therefore, encourage the *normalization* of children within the classroom environment. According to Montessori, normalization occurs when a child develops concentration and self-discipline through work. A normalized child enjoys a healthy psychological state of being intrinsically motivated to complete a specific task, and therefore, the Montessori teacher’s goal is to support children on the path to normalization.

In order to achieve this goal in my own classroom, I wanted to discern whether the introduction of a practical life shelf would increase focus during the work period and encourage organizational skills. Following the Montessori principles, I created a practical life shelf

including prepared lessons the children could utilize during the work period. I reached out to other teachers who use practical life, generated a list of choices, and gathered the necessary materials. These materials include yarn, knitting needles, crochet hooks, sewing needles, thread, felt, origami paper, rags, dusters, and pencil sharpeners.

I set out to gain knowledge regarding my primary research question: Which developmentally appropriate practical life activities will help improve the executive function skills of all children in the classroom including those who independently develop organizational skills given the Montessori environment? The following subsidiary questions shaped my study but also emerged over the course of the research:

1. What are the effects of explicit teaching in the area of practical life skills on children's development of executive function?
2. Which executive function skills have these students already mastered and which are most likely to improve as a result of direct teaching?
3. Which activities of practical life are most related to teaching executive function skills in upper elementary?
4. How does the introduction of practical life activities affect the environment and work period?

Literature Review

Practical Life Activities, Mindfulness, and Executive Function Skills

Executive functioning skills (EFs) are thought to be essential to academic success. Without the ability to shift between tasks, manage time, or self-regulate, children have difficulty attending to, organizing, and accomplishing the academic tasks necessary for learning (Best and Miller, 2010; Bettmann, 2000; Greenhouse, 2011; Lillard, 2011). There has recently been

increased interest in mindfulness practices, and researchers have noted the correlations between the Montessori method and mindfulness teaching (Lillard, 2011). This paper examines the currently available research surrounding the development of EFs in general and in the Montessori classroom to propose that additional research be conducted to better understand how practical life activities affect the EFs of upper elementary-aged students.

An Overview of Executive Functioning Skills

In Best and Miller's (2010) summary article compiling research on the construction of EFs, it was found that the foundational EFs including inhibition, working memory, and shifting begin developing during early childhood and continue to strengthen over the course of a lifetime.

According to Lillard (2011), there are several practices in place in the Montessori classroom that contribute to the development of mindfulness defined by Kabat-Zinn (1997) as "the awareness that emerges through paying attention on purpose, in the moment, and non-judgmentally to the unfolding experience," which is closely related to the development of EFs. Several studies have noted the change that mindfulness can bring about in children specifically with regard to the development of emotional recognition and regulation (Burke, 2010; Lee et al, 2010; Weare, 2014).

Because the Montessori child learns independent work habits and the social skills associated with cooperation and self-regulation based on independent practice with concrete materials, the number of materials available in the classroom, and the child-centered environment, he/she is able to engage in the repetitive practice necessary to enhance social and emotional skills and address increasingly complex social situations (Elias & Greenberg, et al., 2003, p. 468; Ervin, Walsh, & Mecca, 2010).

Practical Life Activities and Normalization

Practical life activities such as serving snack, pouring water between containers, and sweeping with a hand broom are an essential part of the Montessori early childhood environment (Bagby, Barnard-Brak, Sulak, Jones, and Walter, 2012). Although the activities appear mundane and separate from academic skills, it has been found that activities of practical life lead to confidence and development of the inner self (Woods, 2000). Additionally, activities of this nature prepare the child for academic tasks in the following ways: developing concentration, coordination, and the will as well as completing a task and preparing for academic focus (Bettmann, 2000).

Lillard (2011) cites the relationship between practical life activities and the development of normalization, which Montessori described as a psychologically healthy state. From Montessori's observations of children, it is thought that the development of concentration through these activities, including walking the line and the silence, contributes to a sense of inner power and the ability to function independently. By introducing practical life activities in order of complexity, young children cultivate independent power because they are given the freedom to exercise EFs, specifically inhibition (Woods, 2000).

Executive Dysfunction and Negative Behavior

In Greenhouse's (2011) summary article compiling research on the neurological aspects of executive function and dysfunction in the classroom, it was found that children who struggle with organization, impulse control, or emotional skills are often punished for their shortcomings despite the fact that, in order to improve skills, EFs require the same intensity of interventions that learning disabilities such as dyslexia require.

Greenhouse (2011) also reviewed a study conducted in 2002 by DiPerna and Elliott. It revealed that children with weaknesses in inhibition and emotional control are more likely to have impaired social skills and to be bullied. Lack of EFs can lead to limited social skills, impulsivity, and explosiveness making participation in a social or academic setting difficult. However, children in a Montessori setting and those who have participated in mindfulness education have shown parallel growth in social and attention-related skills (Lillard, 2011).

Increasing Executive Function Skills

Greenhouse (2011) also reviewed a study from 2007 by Metzler, Pollica, and Barzillai which examined specific interventions for teaching executive function skills. In order to increase these skills, children require direct instruction and a culture of systems and routines in the classroom (Meltzer et al., 2007). There is also a strong connection between the improvement of EFs and the relation of work to effort and motivation (Greenhouse, 2011; Diamond and Lee, 2011; Lillard, 2011). As Montessori observed, children are motivated by activities that interest them as well as those with a practical need (Lillard, 2011). It is not always possible to introduce a direct practical need for all skills children learn in school, but a study by Ehmke (2012) found that explaining the rationale for assignments helps students understand why a particular task is worth their effort, thereby increasing motivation (Greenhouse, 2011).

Greenhouse (2011) suggests that tying teaching to practical classroom applications can increase EFs. In the middle school setting, these teachings include planners, checklists, and setting time limits to increase working memory and organizational skills (Ehmke, 2012). Teachers also need appropriate training in EF interventions in order to teach practical classroom applications in a systematic way (Diamond and Lee, 2011; Greenhouse, 2011). Although young children should practice skills in order of difficulty, the order of skills for older children is less

clear (Woods, 2000). However, Webster (2015) argues that for adolescent children the most important practical life activities are those in which children can physically engage with the world. Rather than a prepared order of activities, students are led to activities that engage, promote a directed and collaborative energy, and deepen individual relationships. These may include gardening, working in a kitchen, repairing bicycles, or woodworking (Webster 2015).

EFs are also increased when children correlate effort with success (Ehmke, 2012). Some children are naturally internally motivated while others need external motivators to help them understand the connection between their effort and accomplishments. Therefore, very young children may benefit from reward systems until they feel success independently (Ehmke, 2012).

Effort and success are also related to a child's willingness to consistently practice a skill (Diamond and Lee, 2011). The practical life activities in the early childhood Montessori classroom are one way to connect effort with natural, positive consequences such as the joy of a peer who receives the snack a child has prepared (Woods, 2000). Older children also experience the success of their efforts through practical life activities that teach the value of contributing to a necessary task and the accomplishment of meaningful contributions to the community (Webster, 2015). Researchers agree that more positive social interactions, as may be experienced through mindfulness or practical life activities, increase a child's positive self-perception, which reduces negative behavior and improves self-esteem (Diamond and Lee, 2011; Ehmke, 2012; Kochenderfer, Scheler, & Visconti, 2013; Woods, 2000).

Conclusions and Limitations of Current Research

With the exception of the studies reviewed by Greenhouse (2011), research examining EFs focus on early childhood and adult subjects. In their article review, Best and Miller (2010)

express frustration in the lack of research that spans an entire lifetime and cite the incomplete information as a shortcoming in understanding EFs.

Beyond the deficit of research involving the pre-adolescent and adolescent years, two major limitations exist in the current research. First, researchers disagree as to whether EFs are a singular construct or the combination of several independent components making it difficult to decide how to structure further studies (Best and Miller, 2010; Greenhouse, 2011). Secondly, because EFs are intertwined with many other areas of function, they are difficult to isolate the older the subjects become (Greenhouse, 2011).

In order to gain a complete understanding of the development of EFs across a lifetime and specifically in the Montessori setting, it is necessary to conduct a study that examines the correlation between practical life activities and normalization in the upper elementary classroom. Such a study will provide insight into the relationship between normalization and the development of EFs as well as the types of activities that are most likely to lead to this development. The preadolescent stage has, so far, been excluded from research surrounding executive functioning skills and the effects of direct instruction on the improvement of those skills during a crucial period of development.

Methodology

Participants and Setting

This small-scale qualitative study took place in a Public Montessori elementary school in a large urban school district in the upper Midwest. The school is located in a relatively affluent area of the city and enrolls approximately 655 students with 74.27% Caucasian, 18.83% African American, 4.75% Asian, and 2.15% Hispanic/Native American/Pacific Islander. The school has one self-supporting, fee-based pre-K classroom, four Kindergarten classrooms, seven

first/second grade classrooms, four third grade classroom, and six fourth/fifth grade classrooms. 12% of students receive English Language Learner services, 19% receive special education services, and 41% qualify for Free or Reduced Lunch. The school was also designated as “new-comer destination site” by the school district bringing an unexpected increase in ELL students from Somalia.

Data was collected from 27 fourth and fifth grade students and their parents in my own classroom. The classroom consists of 32 students with five opting out of the study. Of the participants, there were fifteen fourth graders (nine girls and six boys) and thirteen fifth graders (seven girls and five boys).

The majority of students in the classroom have attended the school since at least third grade so they have previous experience with the Montessori method. In the year this action research was conducted, 100% of the students had attended the school for at least one year previous to the study. Students who have a formal IEP or 504 plan or are designated ELL are supported by staff outside of the classroom.

Materials

I created a practical life shelf and included a variety of productive activities (Figure 1). Figure 1 shows the first variation of the activities provided. The practical life activities shifted over time based on the lessons taught as well as student interest (Figure 2). The top shelf included calligraphy pens and the clipboard for the tally sheet where students kept track of the frequency of their choices. The list of practical life activities is posted directly above the shelf (Appendix C). The second self holds a basket for yarn alongside a jar of knitting needles and crochet hooks. Next, there is a jar of sewing needles. After the picture was taken, a tray of felt rectangles and embroidery thread for hand sewing were added.



Figure 1: Original Practical Life Shelf

On the third shelf are art supplies. First, there is a tray of origami paper and a book including several ways to fold origami objects. Next, there are buckets of colored pencils, crayons, and beads. The pencil sharpener dedicated to colored pencils is also on this shelf. The bottom shelf holds cleaning supplies including a basket of rags, disinfecting spray, and a widget for scraping tape off of tables. The duster, broom, and dustpan are placed to the right of the shelf because they are too large to fit on the cleaning shelf.

Top Shelf	Calligraphy pens	Clipboard with Tally Sheet
First Shelf	Basket of Yarn Jar of Knitting Needles and Crochet Hooks	Tray of embroidery floss and felt squares
Second Shelf	Tray of origami paper Origami book	Colored Pencils, crayons, and pencil sharpener
Third Shelf	Basket of Rags Disinfecting Spray	Table Scraper (Widget)

Figure 2: Current Practical Life Activities by Shelf

Procedure

Before direct instruction in the area of practical life began, the students and their parents were asked to complete a survey about the student's ability to focus, organize, and use time wisely. The survey used was adapted from the DSM 5 symptom checklist for AD/HD (Appendices A and B).

I developed the lessons surrounding practical life and executive function skills. Previous to the study, the students had already received direct instruction in using a planner, making checklists based on upcoming due dates, and using a list of late work to prioritize work. The students had demonstrated the ability to articulate the behaviors and attitudes necessary for a productive work period and were able to execute those behaviors with varying levels of success.

During the study, children were introduced to the concept of practical life and were provided with a list of activities from which to choose (Appendix C). Additional activities could be introduced during classroom meetings and added to the list. This introductory lesson was

given to the whole class and related to practical life activities in Early Childhood and Montessori's rationale for participating in practical life activities in the classroom.

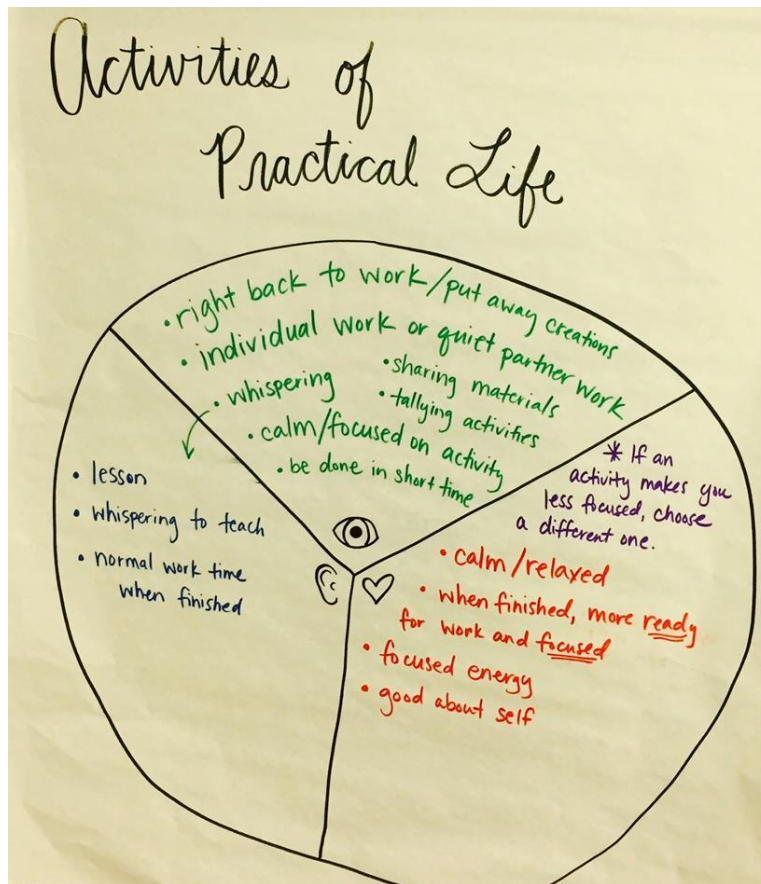


Figure 2: Student-generated chart identifying what practical life activities look like, sound like, and feel like during the work period

Students received direct instruction on activities that provide opportunity for “brain breaks” or short moments away from academic tasks in order to refocus and increase productivity including origami paper cranes, crochet, and hand sewing. Instruction was also given in dusting, organizing classroom materials, distributing the mail, and re-shelving library books. Due to the Montessori principle of following the child, lessons in specific practical life skills were given to individuals or small groups of interested students.

After the direct instruction was delivered, students kept track of their practical life choices using tally marks on a class list. I also used the current classroom record keeping to track work completion. This was calculated by the percentage of days on which assignments were complete each Friday giving students the opportunity to submit late work over the course of the week. Work completed on time was calculated by the percentage of days on which their assignment was submitted on the due date. At the end of the study, parents and students completed a questionnaire (Appendix E and F), anecdotal records were collected, and case studies were recorded.

Results

Prior to the introduction of practical life activities, parents and students took a survey to measure the extent to which the students are able to manage time, focus and persist during difficult tasks, and self-regulate (Appendices A and B). Those surveyed rated each statement on a 0-3 scale, zero meaning the statement doesn't describe the child at all and three meaning the statement describes him/her very well. I compiled the data by sorting the questions into three categories: time management, focus/persistence, and self-regulation (Figure 3). Because the student survey was given in the classroom, one hundred percent of students responded. Eighty-one percent of parents responded.

In all three areas, parent perceptions of children's ability were slightly higher than the students' self-perception. Students reported an average of 21.2% of the ability to manage time effectively (Figure 1) while parents said their children had an average of 31.2% of effective time management skills (Figure 2). Similarly, students said they were 29.1% effective in focus and persistence (Figure 3), and parents reported 34.8% effectiveness (Figure 4). In regards to self-regulation, students reported 21.6% effectiveness (Figure 5) and parents reported 29.5%

effectiveness (Figure 6). Despite the slight disparity between parent and student responses, the survey results show a need to increase executive function skills for the majority of students.

Time Management	Focus/Persistence	Self-Regulation
I have trouble getting started doing things.	I have trouble completing things.	I can't stick to tasks that are optional.
I procrastinate.	It is hard for me to do two or three tasks in a row.	I get disorganized.
I have trouble making plans long in advance.	I often switch from doing one thing to another.	I have trouble sitting still.
I don't prioritize or plan my day.	I often try to do more than one task at a time.	I get impatient easily.
I have difficulty taking command of my time.	I dislike tasks that require a long series of steps.	I am impulsive, do things without thinking.

Figure 3: Sample Questions for the Three Areas Examined on the Parent and Student Pre-Study

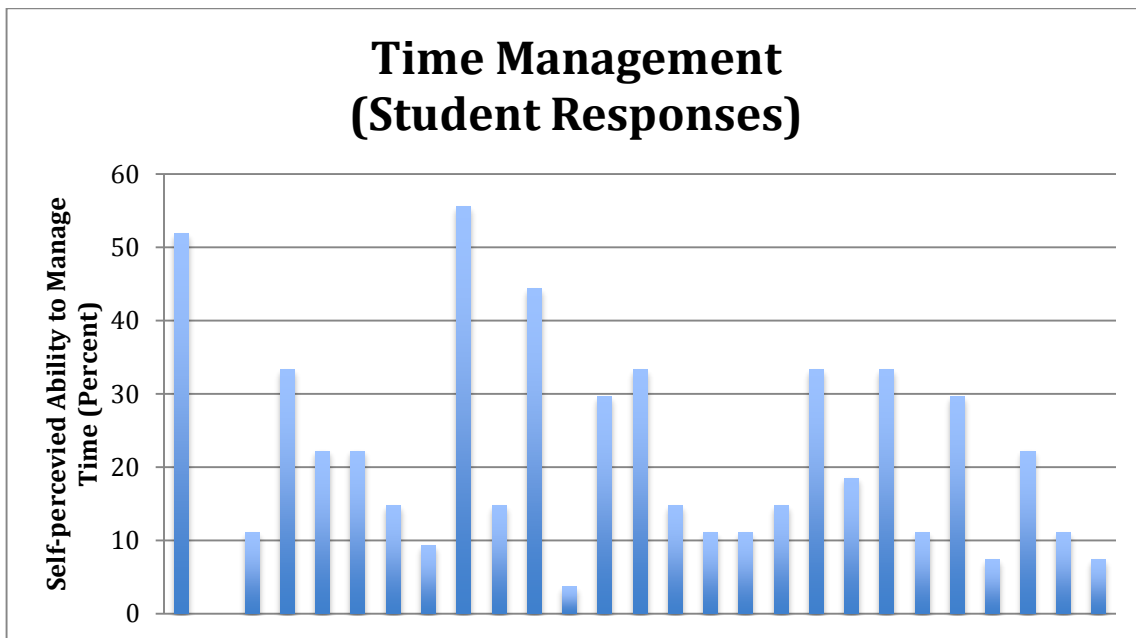


Figure 1: Student Responses to Time Management Questions on the Pre-survey

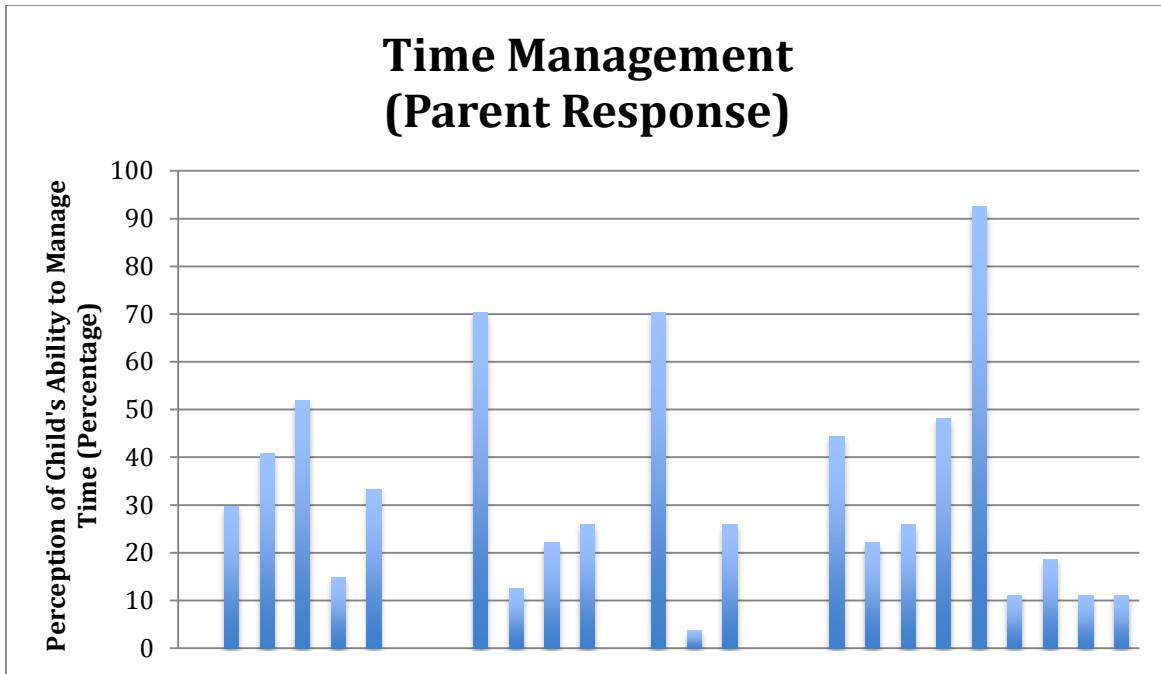


Figure 2: Parent Perceptions of Child's Ability on Time Management Questions on the Pre-Survey

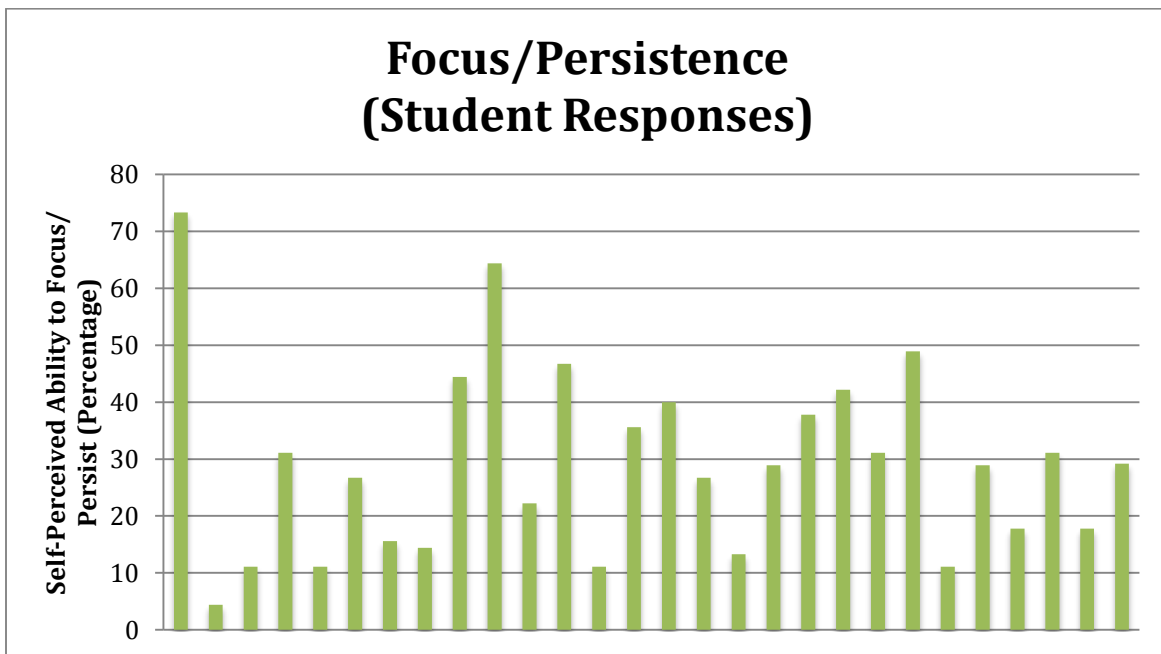


Figure 3: Student Responses to Focus and Persistence Questions on the Pre-survey

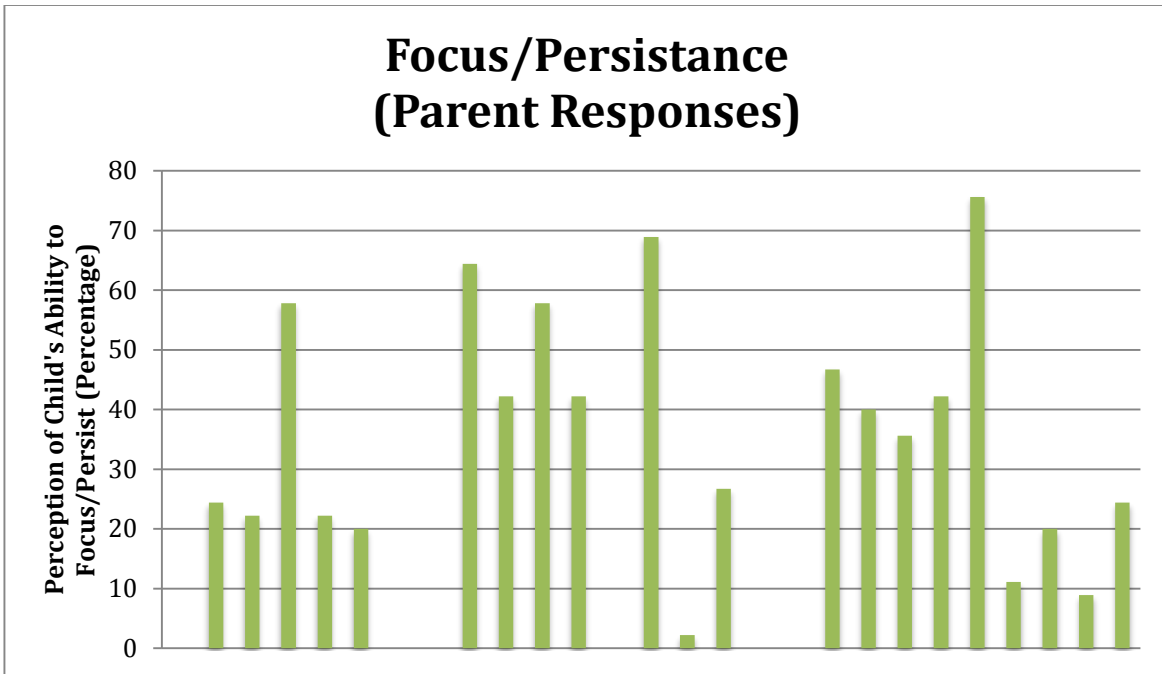


Figure 4: Parent Perceptions of Child’s Ability on Focus and Persistence Questions on the Pre-Survey

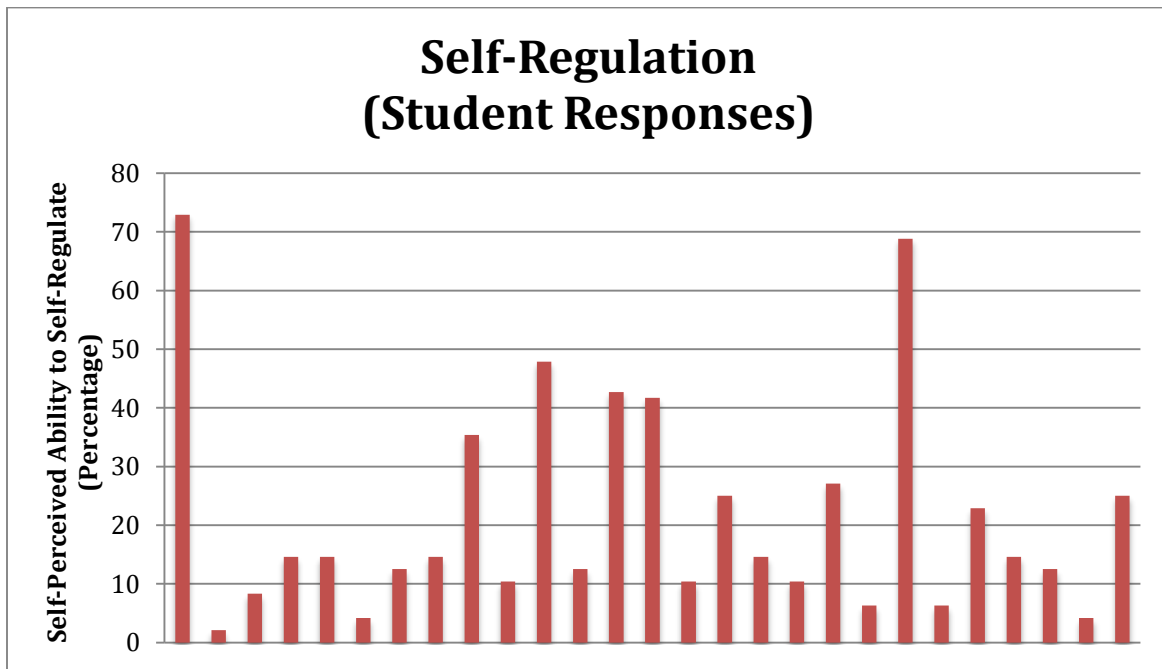


Figure 5: Student Responses to Self-Regulation Questions on the Pre-survey

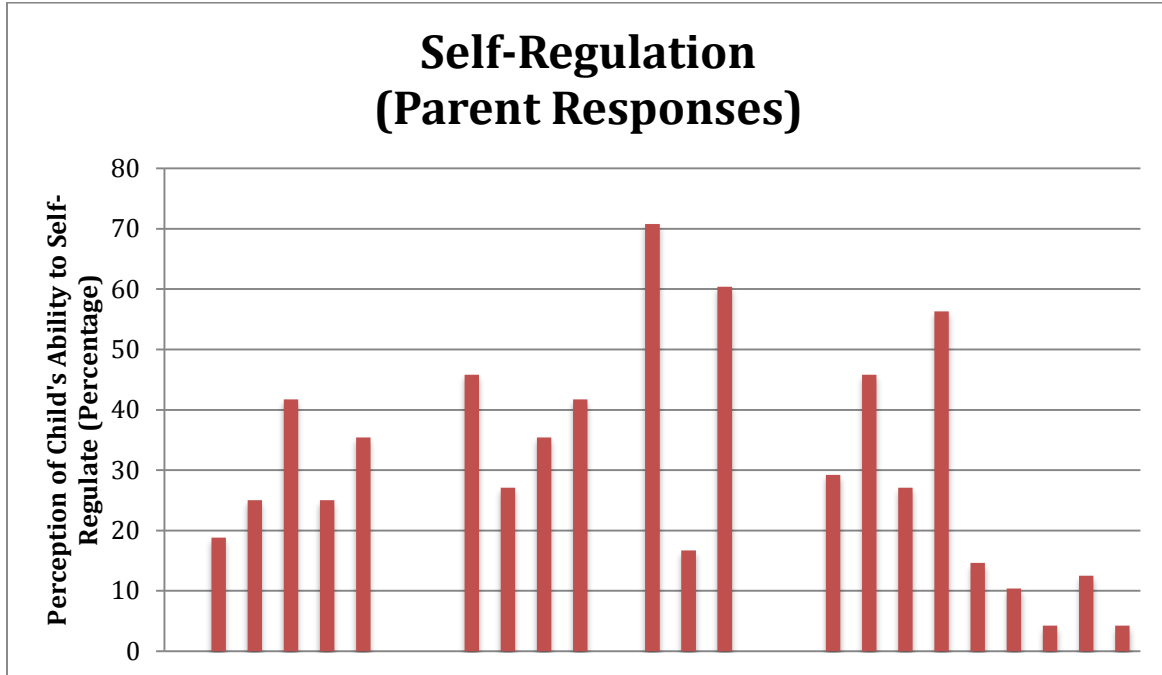


Figure 6: Parent Perceptions of Child's Ability on Self-Regulation Questions on the Pre-Survey

When given space to comment, parents said:

- “My child likes to take his time on doing something but if he doesn't [understand] something he gets anxious quickly.”
- “She plans things and is willing to commit the time to completing them.”
- “Since she has been in 3rd/4th grade, and time mgmt./organization expectations have increased, it has been more and more difficult for her to plan and organize her time.”
- “I'd rather him to learn to concentrate on a task at hand, finish it completely with the best of his ability, then move on to the next task.”

Over the course of the study, overall work completion went down for many students (Figure 7). However, at the end of Quarter 2, there was a surge in work completion due to approaching report cards, which skewed the percentages. Therefore, the work on time percentage

is a more true representation of student achievement during the period of the study when compared with Quarter 2 data (Figure 8).

It appears that the introduction of practical life activities positively affects the child’s work completion rate, especially the percentage of work completed on time (Figure 9). By examining the data from the baseline Quarter 2 work through the average of the eight weeks of the study, we see that 81% of the students increased their amount of work completed on time. Of those students, 29% improved their work complete on time by more than 10%. For some, this increase appeared to be directly correlated with choosing practical life activities.

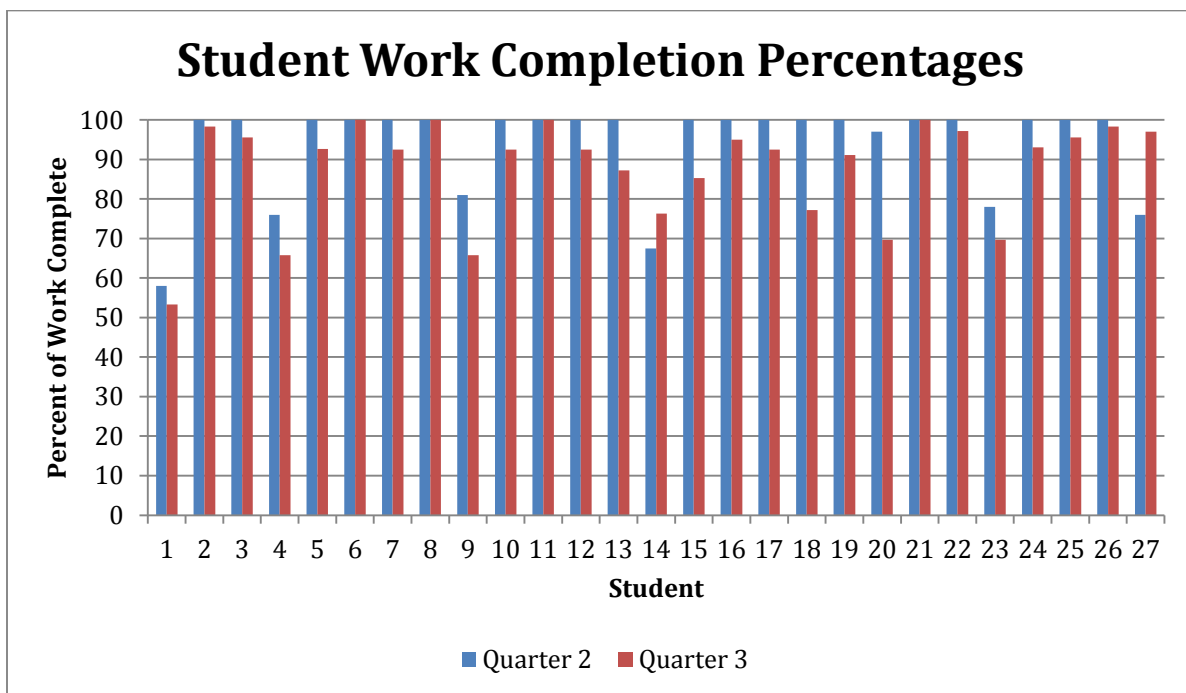


Figure 7: Comparison of Student Work Completion Percentages for Quarters 2 and 3

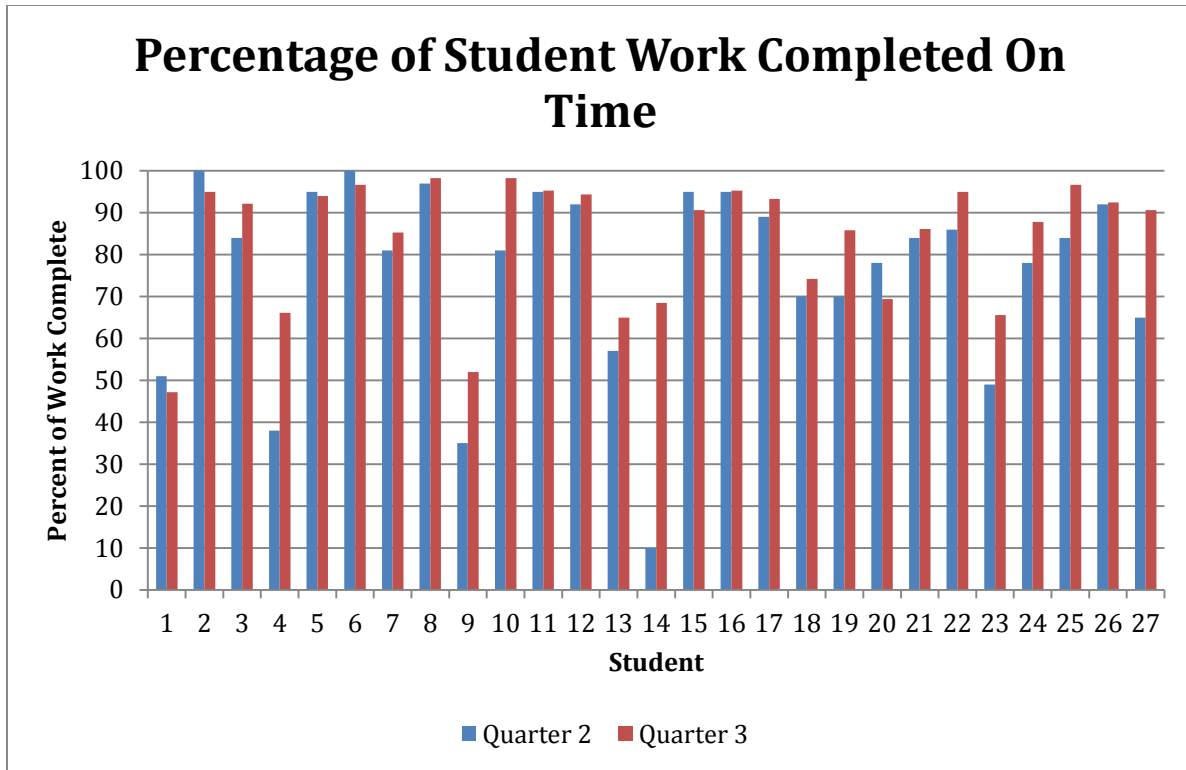


Figure 8: Comparison of Percentages of Student Work On Time for Quarters 2 and 3

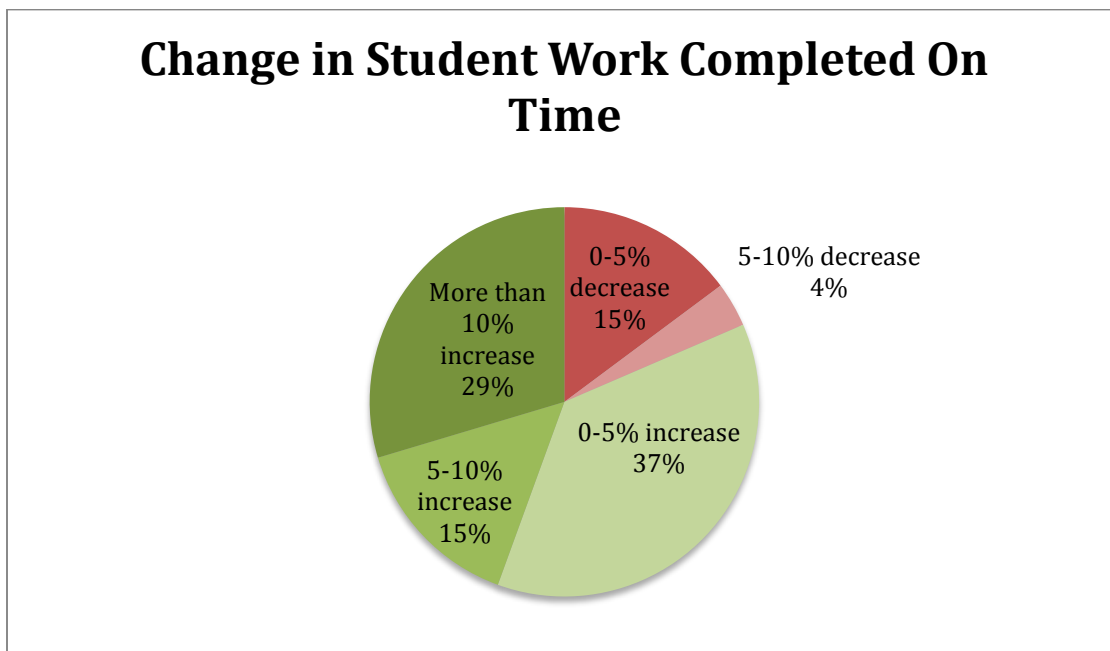


Figure 9: Change in Student Work Completion Rates Over the Course of the Study

The most profound shift happened for one of my fourth grade female students who entered fourth grade with apprehension and anxiety. When she came to drop off her school supplies in August, she hid behind her mother and whispered a greeting to me. Her eyes stayed fixed on the floor while I greeted her, saying, “I’m so glad to meet you. I am so lucky to have you in my class.” Her apprehension was so strong that her voice shook when she spoke.

During this student’s first month in my class, her social anxiety decreased slightly, and she began to share stories with me. However, she struggled to focus during the work period. She often wandered around the classroom, lost her notes or assignments, and had difficulty articulating what was expected of her during work period. Despite using a planner and copying the daily task list into that planner, she had not developed the executive function skills to use those tools effectively.

This student finished the second quarter of her fourth grade year with 76% of work complete and 38% of that work completed on time. In the first week that I introduced practical life activities, she chose six activities. Her work completion increased to 90% complete with 80% on time. The numbers truly reflect a shift in her attitude, focus, and attention during work time. She stopped wandering, instead moving purposefully around the classroom. She used her task list to plan and shift between activities. Even her voice became stronger and clearer. I was not expecting such a profound shift so quickly, and I was unsure if the change was permanent.

However, with the exception of the week after Winter Break, the student completes her work more routinely in weeks she has chosen practical life activities. I had noticed a decline in her work completion so we sat down for a conference, and I asked her what had changed. She was hesitant to answer at first, but she said, “I forgot about practical life this week.” Rose’s ability to articulate a connection between practical life activities and her work completion gives

me great hope for the development of her executive function skills and academic success. In her post-survey, she also wrote, “I usually get more work done and am more productive.”

Conversely, some students were negatively affected by the introduction of practical life activities. One of my fourth grade male students has not developed executive function skills necessary to work independently. He has so much energy and need for movement that he constantly moving around the classroom, chatting with classmates. He struggles to self-initiate and attend to work. He needs frequent teacher intervention to provide structure and productivity to his day. At the end of quarter two, he had completed 85% of his work, 35% of it on time.

With the introduction of practical life activities, this student’s focus and productivity plummeted. He was drawn to the origami paper and would spend the majority of the work period folding paper claws, crabs, and cranes. I realized that the freedom to choose practical life activities, both activity and duration, was not a responsibility for which he was ready. He was totally captured by folding paper to the extent that his perception of time was skewed. He was lost in the activity.

I began to set a timer to help this student remember to return to his work, but that was also unsuccessful. The timer would go off and elicit no response from him. Next, I began assigning alternate practical life activities to find something that was grounding, calming, and focusing for him. In his post-survey, he noted that he chooses practical life once a day and his work period is not affected by his choice. As of the end of this study, he and I are still searching for the best activity to help increase his focus and productivity; however, his work completed on time had increased from 35% to 52%.

Eight weeks after practical life activities were introduced, the students were given a survey to reflect on the frequency of choices made as well as the effects of making practical life choices during the work period (Appendix E). Fifty-six percent of students reported choosing

activities at least once per week while 18% said they never chose practical life (Figure 10). The written responses regarding the effects of practical life on the work period also reflected these results (Figure 11). Sixty-nine percent of the students said that choosing practical life helps with focus and work completion. Their comments included statements such as: “*They help me focus better, and make me feel more relaxed,*” “*Practical life activities help me get focused, but if I do them too long I can’t get back to work,*” and “*They help me get back on task.*” Twelve percent of students noted the need for a break from work saying, “*They help me because all my need for some break is gone,*” and, “*They make me not be as bored doing boring work.*” Conversely, fifteen percent of students said practical life activities negatively affect their work time noting, “*They distract me,*” and, “*They waist [sic] my work time.*” Overall, the student post-survey responses indicate that the majority of students are enjoying and/or benefiting from practical life choices.

A parent post-survey was distributed at the end of the study, and parents were asked to reflect on changes, if any, their child had made over the past eight weeks. Surveys were returned anonymously. Sixty-three percent of parents responded to the survey. According to the data, only 35.5% of students shared information with their parents about practical life activities. One parent even commented, “I would appreciate materials coming home more often and more parent/teacher conversations about ‘practical life’—I understand the concept but don’t know what the students are doing at school.” However, 82.3% of parents *agreed* or *strongly agreed* that their children increased attention to organization, 76.5% *agreed* or *strongly agreed* their children increased attention to time management, and 82.4% *agreed* or *strongly agreed* their children complete work on time.

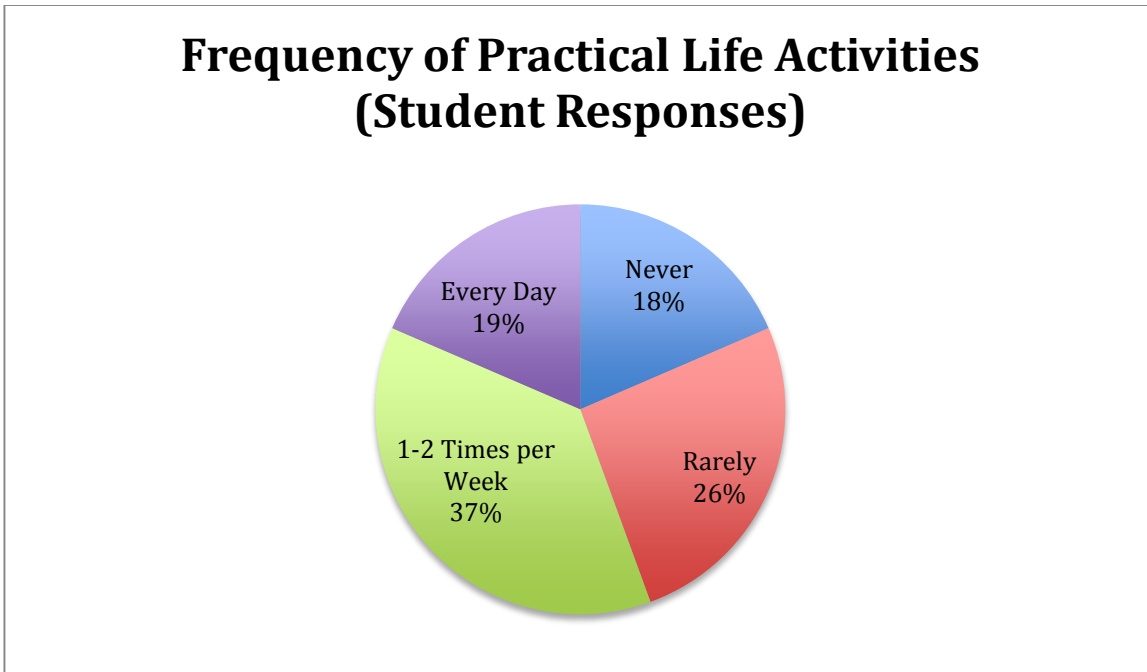


Figure 10: Student-Reported Frequency of Practical Life Activities

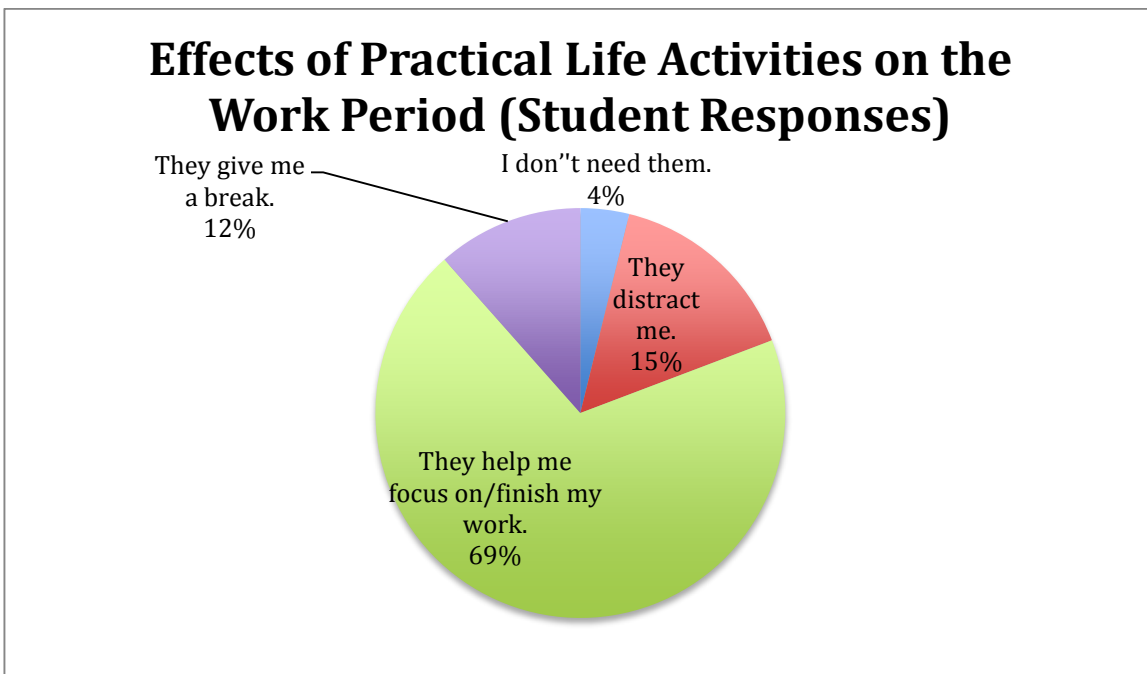


Figure 11: Student-Reported Effects of Practical Life Activities on the Work Period

Place an "X" in the box that best describes your experience.					
SA = Strongly Agree A = Agree D = Disagree SD = Strongly Disagree DK=Don't Know					
	SA	A	D	SD	DK
My child shares information about practical life activities.	5.9%	29.4%	41.2%	5.9%	17.6%
My child has increased his/her attention to organization.	23.5%	58.8%	11.8%		11.8%
My child has increased his/her attention to time management.	29.4%	47.1%	11.8%		11.8%
My child completes work on time.	35.3%	47.1%	11.8%	5.9%	
My child comes home with materials to complete unfinished assignments.	17.6%	41.2%	35.3%		

Figure 11: Parent Post-Survey Results

When asked about the changes in their children over the course of the study, parents said:

- “Sometimes he does and sometimes he doesn’t. It’s not consistent. There is no huge difference but I think he became more responsible.”
- “Organization, time management, and work completion have become better and more worse and now better over the last few weeks. Responsibility for work has increased, but still needs reminders about what needs to be done.”
- “I have definitely seen an improvement in her level of responsibility! She is now trying hard to look ahead and get the work done ahead of time.”
- “He will even set his alarm early to finish something.”

While 11.8% of parents *disagree* that children increased their attention to organization and time management, and 17.7% *disagree* or *strongly disagree* that children submit work on time, the overall results show parents noticed a positive change in the executive function skills of the students.

Discussion and Action Plan

The purpose of this action research was to determine whether the introduction of practical life activities in the upper elementary Montessori classroom contributes to the development of executive function skills. Although the data shows a correlation between practical life activities and work completion, it does not imply causation. One of the challenges of this research is isolating the influences contributing to student success and increased executive function skills. While work completed on time increased with the introduction of practical life activities, there were several other structures in place in the classroom that also promoted increased time management and organization—namely, the use of planners, checklists, and timers.

Due the shift in attitude and focus during the work period, children began to socialize productively, deepen relationships with peers, attend to tasks purposefully, and demonstrate a sense of responsibility to their work and the community. I also gained a tool to speak of choices being in made in the classroom without focusing on unwanted behavior. Rather, I am able to say, “Your movement shows me you could use a practical life activity. Why don’t you look at the choices and select one?” However, the study is limited by the inability to isolate the effects of practical life activities on executive function skills and future academic success. The student self-recording of the frequency of chosen activities also limited the study. Despite reminders from a prominently placed tally sheet and me, many students did not record their choices with fidelity so I used the student post-survey responses and my own observations to interpret the data.

I have discovered that practical life activities make a difference in the atmosphere of the classroom regardless of whether all students are actively engaging in the activities. Because there were several perceived benefits of this study, I would like to build on the success of the current practical life activities and explore the introduction of bigger works: sanding wood, polishing, growing and tending to plants, repairing materials, and machine sewing. Are larger, longer works

more grounding, especially for students like my fourth grade boy who have not found activities with which their focus is increased? Which activities of practical life are most related to teaching executive function skills in upper elementary? Clearly, in order for children to develop executive function skills, there must be diverse supports in place such as planners, checklists, and timers, as well as works of practical life.

I feel strongly that executive function skills are a major component of academic success, and I look forward to sharing my results with my upper elementary colleagues and researching the effectiveness of practical life activities in developing these skills across all age levels.

APPENDIX A

Name: _____

Date: _____

**Executive Function Questionnaire
(Student Version)**

Executive functions include planning, managing time, remembering, and reasonably controlling emotional states.

Scoring Key

Answer how well each statement describes you when you don't use special aids or tricks you have developed to get around difficulties you might have. Score each answer as follows:

- 0** - doesn't describe me at all
- 1** - describes me somewhat
- 2** - describes me pretty well
- 3** - describes me very well

	Score
I have trouble getting started doing things.	
I procrastinate.	
I have trouble completing things.	
I don't do tasks efficiently (good job in short time)	
It is hard for me to do two or three tasks in a row.	
I don't always do what needs to be done.	
I am easily distracted by things I hear or see even when I am trying to concentrate.	
I don't stick to tasks that are optional.	
I can't stick to a task even if I have to.	
I often switch from doing one thing to another.	
I don't pay attention when I should.	
I day dream/space out.	
I have trouble listening while others speak to me.	
I am absent minded.	
I have trouble remembering things I want to do.	
I get so deeply into one thing that I forget others.	
I lose or misplace things.	
I forget appointments.	
I am often late for appointments.	
I have trouble making plans long in advance.	
I get disorganized.	
My personal work area is messy.	
I don't prioritize or plan my day.	
I can't work well without structure or direction.	
I have difficulty taking command of my time.	
I waste a lot of time doing nothing.	

I need to keep walking, moving around.	
I have trouble sitting still. I fidget.	
I get angry easily	
I am easily frustrated.	
I get impatient easily.	
I interrupt when other people are talking.	
I am impulsive, do things without thinking.	
I focus and concentrate better if I am somewhat anxious.	
I have trouble doing more than one thing at a time well.	
I often try to do more than one task at a time.	
I dislike tasks that require a long series of steps.	
I get so deeply into one thing that I forget other things I have to do.	
I believe that there is usually a quick solutions to problems.	
I do not like to commit because I don't know how I will feel in the long term.	

Comments:

APPENDIX B

Name: _____

Date: _____

**Executive Function Questionnaire
(Parent Version)**

Executive functions include planning, managing time, remembering, and reasonably controlling emotional states.

Scoring Key

Answer how well each statement describes you when you don't use special aids or tricks you have developed to get around difficulties you might have. Score each answer as follows:

- 0 - doesn't describe me at all
- 1 - describes me somewhat
- 2 - describes me pretty well
- 3 - describes me very well

	Score
My child has trouble getting started doing things.	
My child procrastinates.	
My child has trouble completing things.	
My child doesn't do tasks efficiently.	
It is hard for my child to do two or three tasks in a row.	
My child doesn't always do what needs to be done.	
Even when he/she is trying to concentrate, things he/she hears or sees easily distract my child.	
My child doesn't stick to tasks that are optional.	
My child can't stick to a task even if he/she has to.	
My child often switches from doing one thing to another.	
My child doesn't pay attention when he/she should.	
My child day dreams/spaces out.	
My child has trouble listening while others speak to me.	
My child is absent minded.	
My child has trouble remembering things he/she wants to do.	
My child gets so deeply into one thing that he/she forgets others.	
My child loses or misplaces things.	
My child forgets appointments.	
My child is often late for appointments.	
My child has trouble making plans long in advance.	
My child gets disorganized.	
My child's personal work area is messy.	
My child doesn't prioritize or plan my day.	
My child can't work well without structure or direction.	
My child has difficulty taking command of his/her time.	
My child wastes a lot of time doing nothing.	

My child needs to keep walking, moving around.	
My child has trouble sitting still. He/she fidgets.	
My child gets angry easily.	
My child is easily frustrated.	
My child gets impatient easily.	
My child interrupts when other people are talking.	
My child is impulsive, does things without thinking.	
My child focuses and concentrates better if he/she is somewhat anxious.	
My child has trouble doing more than one thing at a time well.	
My child often tries to do more than one task at a time.	
My child dislikes tasks that require a long series of steps.	
My child gets so deeply into one thing that he/she forgets other things he/she has to do.	
My child believes that there is usually a quick solution to a problem.	
My child does not like to commit because he/she don't know how he/she will feel in the long term.	

Comments:

APPENDIX C
119 Practical Life Choices

Sort through your own mailbox

See if there are any papers that you can take home, recycle, or file in your portfolio.

Clean up your File Box

All papers contained, pencils contained, notebooks colored sides up, reading book in, rulers long side down, folders long side down.

Crochet

Ask Marie for a lesson. Be sure to return crochet hooks and yarn to the practical life shelf after you are finished. Store your work in your file box.

Clean and straighten under the hooks

All white plastic bins are against the wall under the shelf. Only the materials for that bin are contained in the bin. Pencils in Pencils. Dry Erase Markers in Dry Eraser Markers, Folders in Folders. The area is clear of trash. Take any clothing items to the Lost and Found.

Pick up random pencils/materials from floors and shelves.**Origami**

Ask Marie for a lesson. Use or create square paper. Fold paper cranes. Bring your cranes home or put in classroom basket.

Hand sewing

Ask Marie for a lesson. Use yarn needles and yarn to sew felt. Be sure to return materials to the practical life shelf after you are finished. Store your work in your file box.

Sharpen pencils

Regular pencils using electric sharpener

Colored pencil buckets

Pull pencils from our art cupboard and math pencils that need sharpening and place in Dull Pencil bin.

Sharpen colored pencils

Using manual sharpener, return to art cupboards or math pencils.

Math pencils

Sort to make sure specific colored pencils are in holders: Red is only red, pink is pink and magenta, orange is only orange, yellow is only yellow, green is green and yellow-green, sky blue is only sky blue, blue is only blue, violet is violet and purple, brown is light brown and brown, gold is only gold, tan is only tan.

Clean worktables and desks

Use Clorox wipes.

Wipe down island

Use Clorox wipes.

Wipe down sink area include inside the sink

Use Clorox wipes.

Sweep tiled floor area

Place dirt from dustpan into the trash

Dust plant leaves

Fill small dish half full, use one of the small sponges, soft side down on the leaves. Wipe gently, one hand supporting the leaf while the other carefully wipes the dust off the leaf. Rinse often!

Organize Library Shelves

Fiction in alphabetical order by author's last name or sorted into author bins.

No name bin

Sort through and claim papers belonging to you. Turn into late bin for credit.

Montessori Materials

Sort through and return to order—especially materials on the math and geometry shelf.

Dust materials on the shelves

Use a damp (not wet!) white paper towel, wipe gently each material surface.

Dust shelves

Using the duster, take all materials off the shelf, dust, and return materials to the shelf.

Check glue sticks

Check caps, tighten as needed, throw away dried up or used up ones, add new glue sticks from the white plastic bin as needed.

Check classroom supplies

Sort through bins, discard unusable or broken materials, refill as needed.

Organize paper trays

Stack paper neatly. Add more as needed.

APPENDIX D
**Practical Life Activities and Executive Function Skills
 Parent Feedback Survey**

Dear Families,

We have reached the end of my study of practical life activities in the classroom. In order to understand the successes and challenges, I want to hear your thoughts and perceptions of this study.

Please respond to the following survey by putting an “x” in the box that best describes your experience during this study. Results will be confidential. I appreciate your time and support!

Thank you,
 Ms. Marie

<p>Place an “X” in the box that best describes your experience.</p> <p>SA = Strongly Agree A = Agree D = Disagree SD = Strongly Disagree DK=Don’t Know</p>					
	SA	A	D	SD	DK
My child shares information about practical life activities.					
My child has increased his/her attention to organization.					
My child has increased his/her attention to time management.					
My child completes work on time.					
My child comes home with materials to complete unfinished assignments.					

Comments:

APPENDIX E

Name: _____

**Practical Life Activities and Executive Function Skills
Student Post-Survey**

1. Do you choose practical life activities as part of your work period? If so, how often?

2. When you choose a practical life activity, what do you generally pick?

3. How do practical life activities affect your work period?

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