

The Impact of Choice on Normalization and Academic Achievement

THE IMPACT OF CHOICE ON NORMALIZATION AND ACADEMIC ACHIEVEMENT

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Abstract

Students in today's traditional schools do not have many opportunities for choice in their learning. Learners can often be observed seated in their assigned seat, engaged in assigned work given to them by the adult in the room. Traditionally in the United States, this has been the norm for many schools, but is it really the best way for students to learn? This research focuses on how freedom of choice in a Montessori classroom helps to support normalization. Normalization is a Montessori term to describe a learning situation in which students demonstrate a love of learning and engage in tasks autonomously as a result of their intrinsic motivation. This study focuses on choice in a Montessori learning environment. However, the research is applicable to traditional classrooms as well. By analyzing student observations and work samples this research attempted to see if choice in the classroom affects normalizations and student achievement. The research showed an increase of on task behavior when students were given more choices but did not show an increase in respectful behavior.

Keywords: Montessori, normalization, choice, freedom, autonomy, intrinsic motivation

Introduction

There are many stereotypes about Montessori education present today in American society. A common belief is that Montessori Education allows children to do whatever they want. In reality, a Montessori classroom is a highly organized environment that allows students to make responsible work choices to improve themselves. In this setting, students are given several freedoms: they are given the freedom of choice in their work, the freedom of movement in the room, and the freedom of repetition. However, it must be stated that this freedom comes with responsibility. Teachers follow each learner and allow each student to exercise the freedom that they are able to handle responsibly. Over time students will learn to become normalized to their setting; meaning the children will show a love of work, improved concentration, and greater self-control.

Much of the data suggests a correlation between student choice and academic achievement. This research will explore the question: How does freedom of choice in a Montessori classroom help support normalization and academic achievement?

Freedom on Building Autonomy

In a Montessori setting students are working towards becoming autonomous scholars and normalized learners. Students are not asked to be autonomous on their own, but receive various methods of support to help build this skill over time. “The community culture of a classroom, which includes both social and academic peer interactions, is highly dependent on teacher leadership” (Bozack, Vega, Mccaslin, Good, 2008, p. 2392). Autonomy does not happen spontaneously in in students; a professional who creates this environment for them builds it up over time. Teachers employ strategies like those demonstrated in this quote, “Whenever students sought their help, they were rarely given direct answers. A teacher shared that she typically had students reflect on other problems that they have previously done” (Koh, 2010, p.8).

In addition to teaching strategies and classroom community the students’ learning environment also plays a large role in their ability to be autonomous. Young learners need to have a prepared environment that can facilitate student learning. “Teachers in high autonomy listened to the students more and allowed students to handle and manipulate instructional materials” (Stefanou, Perencevich, DiCintio, Turner, 2004, p.99). In Montessori Education students

are not just encouraged, but required to learn how to respectfully handle and use learning materials independently.

Using practices like these, respects the learner and provides them with some support, but these strategies place the thinking back on the learner. In the words of Maria Montessori, “Montessori education is established upon the philosophy of helping each child become a disciplined individual who is ‘master of himself’, and can, therefore, regulate his own conduct when it shall be necessary to follow some rule of life” (Montessori, 1964, p. 86).

Freedom of Choice on Intrinsic Motivation and Academic Success

Intrinsic motivation is extremely important for young learners in the classroom. Many speakers and professional development sessions devote large amounts of time to discussing how to build intrinsic motivation. Using MAP test (computerized adaptive tests for math and reading) data, a study on intrinsic motivation found, “Their scores on the MAP tests indicated higher means in both reading and math, resulting in the finding that there is a direct relationship between levels of self-regulation—particularly on work habits where the ratings for Montessori children were shown to be statistically significant—and academic achievement, according to this one test” (Ervin, Wash and Mecca, 2010, p. 8). This information helps illustrate the importance of academic achievement with

regards to intrinsic motivation.

Current research shows that choice and academic achievement are correlated. According to a study done by Patall, Cooper, and Wynn (2010, p 910) on homework completion, “Consistent with self-determination theory, we found that students reported feeling more interested in and enjoying homework more as well as more competent regarding their homework and that they scored higher on the unit test when they received a choice between two homework assignments covering the same content and of intermediate difficulty, compared with when they were not given a choice.”

In addition to homework achievement, there are studies that show that students who have opportunities for choice show improved academic achievement. According to a Hannover Research study completed in 2014, “Students who were given a choice in their learning and whose instruction met their learning needs showed significant improvement on standardized tests.”

Giving students more autonomy builds a love for learning. “As students mature and progress from elementary to middle and high school, research demonstrates an even more critical need for skills of directing and managing one’s own learning choices and progress. When students feel a sense of ownership, they **want** to engage in academic tasks and persist in learning”

(McCombs, 2011, p.2). When given the chance to be more autonomous, they show a love for learning because the work is truly theirs and not something they are forced to do.

Freedom of Movement

In today's classroom, we commonly see students seated in assigned places, engaging in work silently. In a Montessori environment students are free to move around the room respectfully. They practice the art of moving with grace and courtesy, practicing and developing self-control. "Children must move, and practice moving, to develop strength, balance, and the stability needed to fully participate in the rigors of daily life" (Fuchs, 2014, p.35). Movement in the class not only helps the child's gross motor skills but also aids in self-development. "Through movement, the child absorbs knowledge and develops personality and character" (Fuchs, 2014, p.35).

In fact, a Montessori environment would not be possible without freedom of movement. In a Montessori classroom, students need to find educational materials on various shelves throughout the room to help them, after which they need to locate an appropriate workspace. "One of the reasons this degree of freedom is possible is due to the construction of the Montessori curriculum. The materials on the shelves facilitate independent work" (Murray, 2011, p.4).

Freedom of Choice on Behavior

Freedom in a classroom setting can also help to reduce deviant behavior in the classroom. According to research done by the National Center for Education Evaluation and Regional Assistance in 2008, “Students’ engagement often increases and disruption decreases when they are offered choices in their lessons. We recommend that teachers occasionally provide students with options in how they participate in learning tasks” (p .26). Choice in student learning helps to make the student engaged in their learning and therefore, increases their participation.

Choice in their work allows children to pursue tasks that help develop themselves as learners. This development helps to regulate deviant behaviors in the classroom because of the students’ sense of ownership. Instead of being forced to produce something, they are allowed to have some say in their educational development, and in doing so they become more normalized.

Even small opportunities for choice can have a huge effect on student behavior. A case study done by the Center on the Social Emotional Foundations for Early Learning (2004, p.2) showed a young learner who had some behavioral challenges and had trouble completing his art projects. Giving this child small choices in his work, like the color of the clay he was using or which scissors he

got to cut with, made a huge change in his behavior. According to the Center, students who are given choice in the classroom show higher motivation, independence, and communication, as well as showing greater willingness to comply with classroom expectations.

Summary of Literature Studied

The ultimate goal of a Montessori teacher is to provide their students with an environment conducive to normalization. This normalization does not mean that they conform to the authority of the adult, but that they willingly exhibit a love of learning. However, this amazing achievement can only be obtained when the students are given opportunities to explore the ability to exercise freedom in the classroom. Through aid from their environment and trained Montessori guides, students learn to become more autonomous, seeking out new learning for themselves. With this freedom comes an increase of intrinsic motivation and academic success. The freedom to move helps them to develop the gross-motor skills to master the movements of their bodies. Providing this level of choice shows students that you respect them and their choices, and with that respect comes a decrease in negative deviations. Working to accommodate these freedoms in the classroom helps students to become normalized, and in turn become better learners.

Action Research Questions

Most scholarly research done showed a positive correlation between respectful on task behavior and student academic learning choices. For this action research, I wanted to see if I would see the same results in my classroom.

1.) How does freedom of choice in a Montessori classroom help support normalization?

2.) How does freedom of choice help academic achievement?

Procedure, Methodology, Materials, and, Participants

For my research, I worked to discover if there was a correlation between student academic choices and their academic achievement. I was also curious to see how student choice played a role in classroom behavior.

Participants/ Setting

I conducted my action research in my Midwest Public Montessori Classroom (see appendix A for photograph). There were 22 students who were observed for the project in various grade levels: 7 first graders, 9 second graders, and, 6 third graders. I have 26 students on my roster; however, I did

not include the students that receive special education services and do not attend my class. My class consists of 10 male students and 16 female students. Several diverse racial groups are present in my class such as: African American, Hmong, Vietnamese, Filipino, Hispanic, and Caucasian. Six students receive English as a second language services (ELL, ESL). There are also four students who are identified as gifted and talented (GT).

Overall, they are a well-behaved class that works hard. I have been with this class for two years and have taught all of my second and third graders for one year. I have strong relationships with their guardians and have frequent communication with them.

Materials

For the study, I used Montessori materials for student lessons and follow-up work, as well as iPads loaded with the SeeSaw application. The students used command cards and teacher created follow-up work for their first two weeks of data collection.

During my research I relied on student surveys, observational checklists and my daily Montessori classroom observations. I took a survey at the beginning and end of the study to establish a class perception of freedom of choice (see appendix B for prompt and examples). I also utilized observational checklists to get data of “on task behavior” as well as “respectful behavior”

(see appendix C for checklist example). A key component of best Montessori teaching practice is the use of daily observation to guide student learning. I used my daily observations to help me form my interpretation of my findings.

Procedure/ Methodology

For my initial baseline data collection, I kept classroom routines and work expectations in place to establish a control for the study. During this time, I prescribed work for my students allowing them to choose when they would work on assignments, but not providing them much choice in the work they would complete. For example, I would assign a math plan that would be given on Monday and would be due by Friday. I did not set a specific time for them to do their work, but expected it to be done by the end of the week. I have to note however, that all of their work was differentiated to meet the needs of each student.

During my weeks of data collection with additional student choice, I used the SeeSaw application to create alternative assignments for students to complete. Such assignments allowed the students to exercise more choice in their learning. For example, an assignment may ask students to roll place value die to create problems to solve and then upload onto SeeSaw for teacher review. Students were given at least two choices in all of their assignments during this stage of research. For example, after a small reading group I would

give the students a writing prompt, but I would allow them to create one for themselves or use a peer's if they chose.

I did continue following the principle of freedom with responsibility. Several students could not effectively make appropriate work choices when given freedom, so they had some of their choices restricted to best follow the child's needs. For example, one student kept uploading videos of off task behavior under assignments instead of appropriate work. Therefore, he lost the ability to use SeeSaw for various times during the research.

While I conducted my research, I used checklists and observation notes to collect data on "on task" and "respectful" behavior. Students were considered to be "very on task" if they were actively engaged in a learning activity. To be engaged, students needed to be focused on a learning activity and immersed in their learning. For example, a student who is actively focused while using a white board and marker to solve a math problem would be engaged in their learning. "Somewhat on task" was used to categorize those students who were working but were not as actively engaged. "Somewhat off task" referred to students who were completing a minimal amount of work in relation to their academic ability (assessed using formal and informal assessments). "Very off task" referred to students who were clearly not engaged in learning.

“Very on task” behavior was the clearest to identify. Students who are very “on task” will be working with eyes, hands, and senses fully engaged in their work. “Somewhat on task” behavior was tallied when students were clearly working but were not fully engaged. For example, a student who is still completing most of their work but is distracted by a conversation with a peer would be “somewhat on task”.

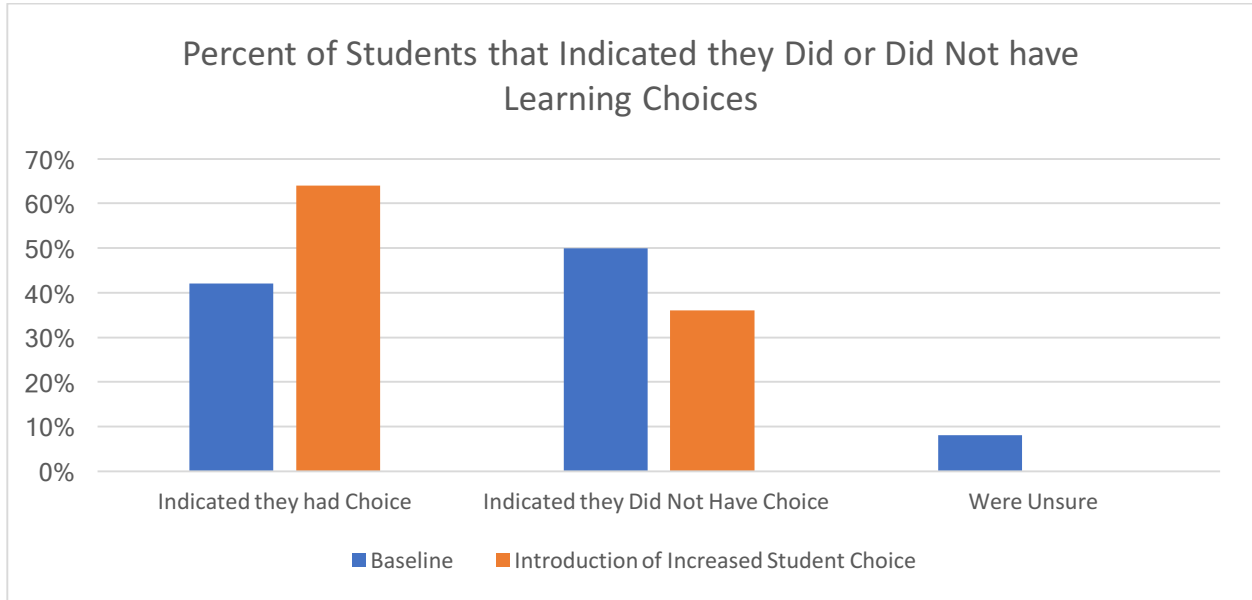
“Somewhat off task” and “very off task” behaviors are harder to define and differentiate. However, “very off task behaviors” were tallied when students were not actively engaged in a learning activity at all; such behaviors include, but are not limited to: needless wandering and off task conversations that take attention off of learning. “Somewhat off task” behaviors were similar to “very off task” ones, but some minimal learning was still taking place.

Respectful behavior was harder to define and quantify, especially since the meaning of the idea changes across cultures. However, for the purpose of my research respectful behavior was defined as, students exhibiting kind behavior towards themselves, others, and their learning environment. Examples of “very respectful” behavior include, but are not limited to: helping other students with their work, asking if someone is okay when they get injured, and carefully using materials for their intended purpose. Examples of “very disrespectful” behaviors include, but are not limited to: using inappropriate

language or tone with others, intentionally physically hurting others, and exhibiting destructive behaviors towards learning materials.

“Somewhat respectful” and “somewhat disrespectful” behaviors were even harder to define. “Somewhat respectful” was tallied when students needed some prompting to be respectful. For example, reminding a student to apologize for their actions would be tallied in this way. “Somewhat disrespectful” behavior was tallied when students need many reminders or supports to act in a respectful manner. An example of this would be, a student who is reluctant to apologize but does decide to make a change and apologize.

Data Analysis, Research Results, and Interpretation



- **Figure #1 Visual Data Representation of Class Survey**

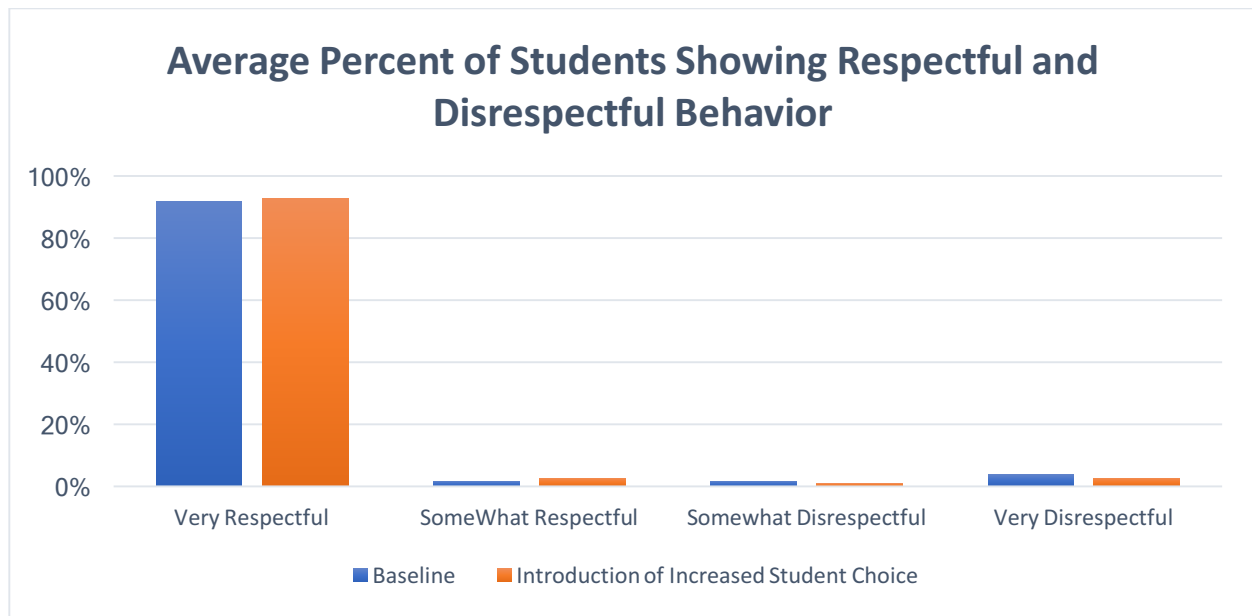
Figure #1 shows the survey results of the writing students completed, expressing their opinion on whether or not they felt they had choice in their learning assignments. The baseline data showed that the majority of the class did not feel that they had choice in their assignments. However, after the introduction of more choice it is clear that the majority of the class felt that they did have choice in their educational tasks with an 18% gain in this category. Additionally, the “did not have choice category” experienced a 14% decrease.

Figure #1 Data Interpretation

The data here shows a correlation between perceived student choice and the addition of more learning choices. This is also in line with my professional observations. When I talked with students about their responses, many changed their responses due to the additional learning choices. Student A in particular was very adamant that they did not have any choice in the classroom. When asked why A felt this way, A declared, “Because I can’t write about what I want.” When new choices were introduced, this student’s opinion changed.

I do feel that some students did not completely understand the idea of “choice” as it was presented in the survey. When interviewed about why they felt they had no choice, several students were clearly confused by the question.

I also noticed that several students indicated they did not have choice, because of a consequence they received that affected them in a non-academic way.



- Figure #2 Choice on Respectful Behaviors

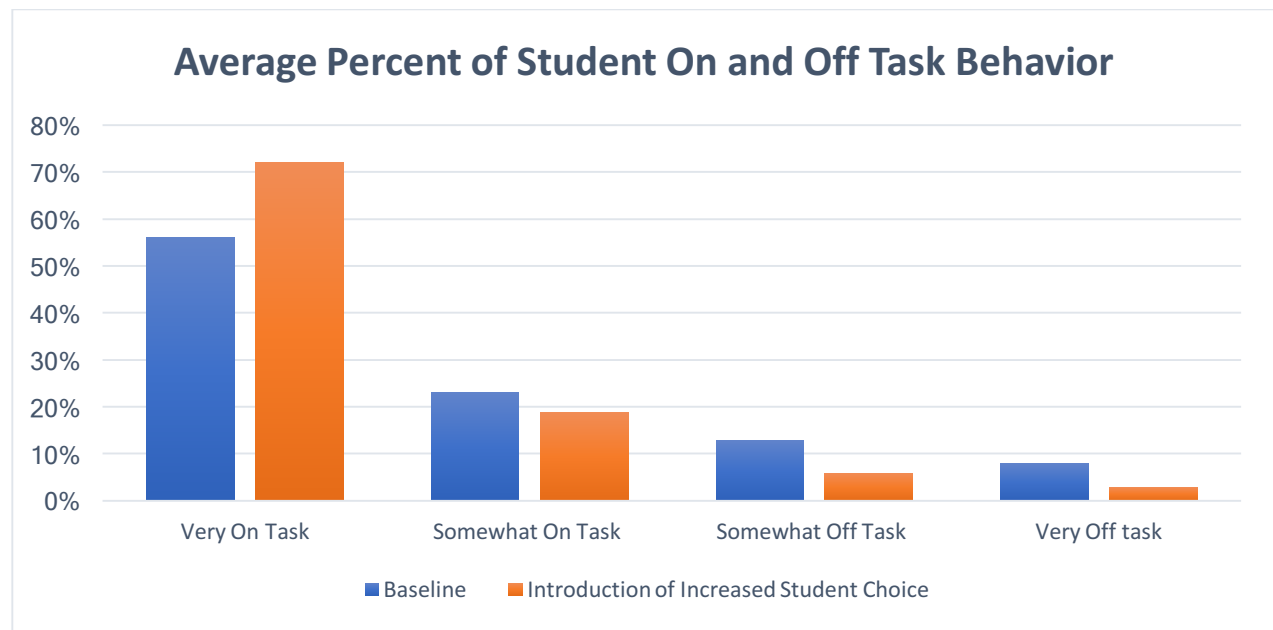
Figure #2 shows the results of the data gained from the checklists. For this chart, the data is fairly similar for the baseline data and the introduction of increased student choice data. There was only a 1% change between the various categories.

Figure #2 Data Interpretation

This set of data was interesting, as it did not statistically show a difference between the baseline and increased choice groups. I have two major explanations for why the data may have reflected little change.

My building is full of respectful students who come from supportive families that place a high value on education. Therefore, it would not be surprising to see that many of the students were already respectful before the addition of extra choice. On the other hand, students may also have shown more respectful behaviors or changed their behavior as a result of seeing me observe and make tally marks on my charts.

When reflecting on my observation notes, I feel that both may have played some role in my research results. I have had experience teaching in several other buildings, and I have noticed that many of my students are much more respectful than others I have encountered at other educational sites. Alternatively, I feel the Hawthorn Effect (when data initially shows results because of observation) played a role in my research to some extent particularly in my students who may have more behavioral challenges.



- Figure #3 Choice on “On-Task” and “Off-Task” Behaviors

Figure #3 Data Interpretation

This data clearly shows a sizeable gain in the “very on task” category: a 16% growth when additional student choice was introduced. The “somewhat on task” category decreased by 4% and the “somewhat off task” group decreased by 7%. Lastly, the “very off task” category decreased by 5%.

When observations are taken into account, I would say that this data is fairly accurate in showing a positive correlation of choice and on task behavior. When observing, it was evident that several students were enjoying their work more and seemed more deeply engaged in their work. Several students in

particular really showed a huge shift in their work habits and attitudes towards learning.

I did find it interesting that the “somewhat on task” category decreased a bit. When consulting my observation notes I believe that this decrease could be attributed to the increase in “very on task behavior”. The decrease in both off task categories supports this conclusion.

Observation Data Summary

Part of the Montessori philosophy entails observing students to determine the best means of aiding them in their social and academic growth. Overall, my observations showed an increase in the quality of work students produced. Additionally, I did notice that students were more engaged while working. This could be because they took more ownership over assignments when they were given choice.

While the majority of my observations showed positive student productivity, I did notice that when students were completing more quality work sometimes the quantity of their work decreased. For example, they would solve eight self-created math problems as opposed to fifteen teacher-created problems. While I view it as a positive that the quality of work increased, repetition is important in learning key concepts such as addition

and subtraction. Therefore, the decrease in repetition could have a negative impact on student achievement.

Another benefit I noticed through my observations was an increase in students' positive attitudes towards their work. Several students did exhibit more respectful behaviors than previously seen, even though it did not appear on my quantitative research data because it was more closely related to the joy they took in their work. One student in particular stands out. They really improved their ability to exhibit more self-control and use more respectful language. I would say that students exhibited a greater amount of joy while engaging in learning activities when they were given more choice in their work.

Reflection on Research

Impacts on Best Teaching Practices

Upon reflection I have decided that, in my experience, my research is in line with Montessori philosophy regarding freedom of choice in a child's learning. I feel that the data showed that there was a positive correlation between student choice and on task behavior. Alternatively, my qualitative data did not show that there was much change in respectful behavior exhibited in my class. However, even though it was not tallied quantitatively, I did see an increase in

joy and work quality when I observed students after additional choices were offered.

It is clear that student work habits improved when multiple opportunities for student choice were offered. The data taken from the student surveys, checklists, and observations suggested this positive correlation. When addressing the research questions of, “How does freedom of choice in a Montessori classroom help support normalization?” and, “How does freedom of choice help academic achievement?” I would say that I do believe that learning choices do positively affect normalization and academic achievement, due to the noticeable increase in student engagement.

In the future, I will continue to incorporate learning choice in my practice. This will allow me to help students achieve higher levels of engagement and increase the quality of their work.

Questions for Future Exploration

My research did not show a significant correlation between respectful behavior and academic choice. This contradicted the research done by the scholarly articles present in the literature review section. I wonder if this result would be similar if a different assessment was used to gather data.

All of the research I found while gathering articles for my literature review showed a correlation between positive behavior and academic choices. I did

work to find a research that displayed the opposing view; however, I could not find a single scholarly research article that demonstrated choice negatively affecting student behavior.

I would also like to see how the addition of choice can benefit students. I would be specifically interested in seeing the impact of this on young men, due to their reputation for being more active. It would be interesting to see how much choice can affect their growth in on task and respectful behavior.

Lastly, I would like to see if my observations of on task behavior would be different if I collected data during the class' prep times. I would also be interested in seeing if respectful behavior increased while students were playing outside on the playground.

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Appendix A

Photograph of Learning Environment

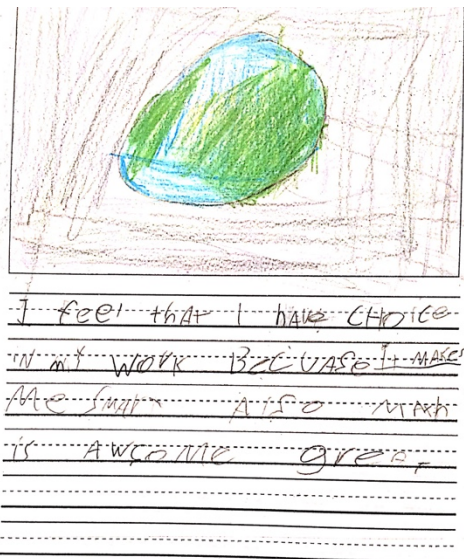


Appendix B

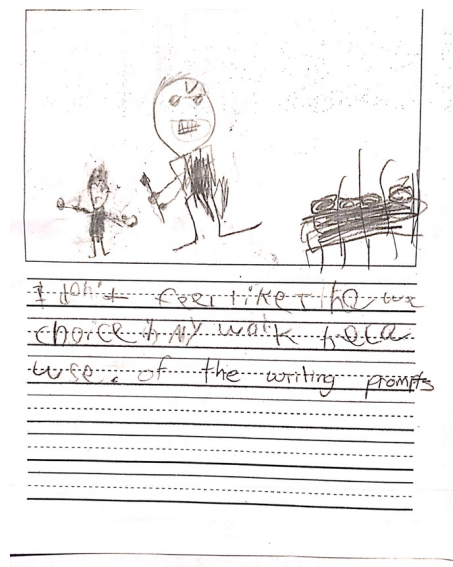
Survey of Students' Regarding Choice in their Learning Environment

Prompt: "I feel like I do/do not have choice in my learning because_____."

An example of a student who indicated they did have choice



A student who did not indicate they had choice in their learning



Appendix C

Example of check list used to tally on task and respectful behavior.

Date _____

Time						
	Very off task	Somewhat off task	Somewhat on task	Very on task		

Time						
	Very disrespectful	Somewhat disrespectful	Somewhat respectful	Very respectful		

Time						
	Very off task	Somewhat off task	Somewhat on task	Very on task		

Time						
	Very disrespectful	Somewhat disrespectful	Somewhat respectful	Very respectful		