MIDDLE SCHOOL INTERVENTION PROGRAM

by

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ABSTRACT

The study was focused on an intervention program known as Friday School. The purpose was to see how the intervention program affected student achievement in science. The data were collected based on non-treatment and treatment phases during the opening two quarters in the 7th grade, which had 64 students. During the eleven sessions data was collected there was a total of 70 attendees. There were a variety of methods in which data were collected. Students were given a survey to fill out after attending a session, this asked for their attitude, opinion on how helpful they felt it was and what they worked on. A teacher journal was kept to collect qualitative data that was observed. The treatment phase implemented five different study skills: fun lab, vocabulary, notebook organization, study sessions and one-on-one help. Results indicate that students academically benefit by attending the program. Students who show up had good attitudes towards attending and found the program helpful. Some study skills that were implemented during the treatment phase, showed that students will improve their engagement in science and may receive better test/quiz scores. This study showed that tutoring intervention programs are needed in education to help students be more successful.

INTRODUCTION AND BACKGROUND

I have taught at Burns Jr./Sr. High School for four years. Burns High School is located in Burns, Wyoming (WY), and the school includes grades 7 through 12, with approximately 280 students. I teach all the middle school students in 7th and 8th grade science. Burns High School switched to a four-day school week starting school year 2015-2016, and this created an opportunity for the school to implement an academic tutoring intervention program, commonly referred to as "Friday School". The Friday School program is a two-hour session scheduled two to three Fridays a month throughout the school year. As the middle school science teacher, I investigated during my Action Research how effective the Friday School program was for my science students. I believe the program can provide a variety of opportunities that may assist in academic success. During the first year of Friday School, I noticed that students used the program for varied reasons, including: make-up work, completing missing work, and getting caught up from absences and time spent with tutoring help. Through my Action Research I hoped to gain insights into what was occurring during Friday School, including both positive and negative results, and my overall goal was simply to help my students be successful.

The purpose of my action research was to investigate how well the intervention program was helping our students. I believed the program provided a great opportunity for academic support, especially to the lower achieving students. My primary research question was: "how does Burns Jr/Sr High School student intervention program affect student achievement?"

The following sub-questions were addressed:

- What are the effects of the student intervention program on the classroom teacher?
- What attitudes do students have towards the student intervention program?
- What is the relationship between program attendance and academic achievement?
- How does implementing study skill in the intervention program affect academic achievement?

Through my action research I hoped to gain better insight into what program elements might need improvement and what elements were working well during Friday School. The positive information I collected can be shared with students, parents and other members of the school. The negative information I collected can be shared with my fellow teachers and administrators, so we can work together to improve, or change, based on my research findings. A primary goal of my action research was to examine whether Friday School increased success in my classroom and students' attitude towards Friday School. I hoped to assess if the Friday program could give students the tools and support they need to reach their academic goals. I believed the first part of reaching my research goal was getting background information about previous tutoring programs from other institutions.

At Burn Jr/Sr High School (*henceforth*, Burns), our staff is focused on improving all students' learning. After Burns moved to a four-day school week, for various reasons, teachers could assign students to attend the Friday School Program, and students who attended were generally those below 70%. In addition, students can also choose to attend

for extra help or make-up work. Part of my action research was to assess if our efforts in the Friday program were working? Finally, I conducted a review to assess if other intervention programs were working and summarize their findings.

CONCEPTUAL FRAMEWORK

Throughout the history of education academic gaps and deficiencies have existed that have negatively affected student success. My literature review discovered several common factors for students not being successful, and in addition, I have observed in my classroom factors that included: low socio-economic status, poor family support, low self-esteem, inability to understand content, or simply not having the will to achieve. These are just a few of the reasons for a student to fall behind and/or struggle, in not only science, but school in general.

In 2002, President George W. Bush brought reform to the world of education by passing the No Child Left Behind Act, also referred to as NCLB (U.S. Department of Education, 2004). The title implies exactly what the act was set out to do, *to leave no child behind academically*. The NCLB reformed parts of the Elementary and Secondary Education Act (ESEA) from 1965 (U.S. Department of Education, 2004). These two acts included four basic reforms to education: a) stronger accountability for results, b) local control and flexibility, c) expanded options for parents, and d) emphasis on effective and proven teacher methods (U.S. Department of Education, 2004). It is clear the NCLB act was intended to close the gaps academically among students, so that no student "child" is left behind. One way to close this gap is by providing academic support to students, e.g., through any form of tutoring or extra learning opportunities outside the classroom. The

NCLB supported the need for additional enrichment opportunities for students outside the school day (U.S. Department of Education, 2007).

Through research, I discovered positive interactions between student and teacher, and tutoring and study skills were all influential in successful intervention programs. Journals, texts, articles and data served as my research foundation.

Through Friday School, I observed that I was able to have more interactions with my students. These interactions, and their positive effects on students, are not a new thing in society, for example, in the book, *Emile,* Rousseau (1979) shared the idea that interactions between teacher and student are vital. *Emile,* was originally published in 1762. Rousseau's interaction between his private tutor in his teenage years and the Savoyard Priest molded him. In his book, Rousseau (1979) was creating Emile to be a "natural man", uncorrupted by his society. In modern society, this idea of molding personalities holds strong, for example Professors at universities and colleges mold their young graduate students to help the Professor's research, but also influence the students to become great scientists themselves. The text, *Good Mentoring* (Lees, 2010), shows how mentoring graduate students will benefit them for their entire future. For a research lab to be successful, all members must share values and skills. These daily interactions will teach the newest members technical skills, and cultural values of the lead lab researcher, and the interactions provided proof mentoring was important (Lees, 2010, p. 449).

Lees (2010, p. 450) suggested a mentor needs to be consistent and positive, and this will transmit honesty, integrity, fairness and promote highly ethical behaviors. The

book also discussed three different mentors who had very different environments in their labs. Each lab selected their own students based on their personal traits and interests, however, the mentors were able to transmit their unique values and goals. When the author went back to see how second generations felt about the original mentor, it was observed that, "The second generation (G2) expresses great admiration/awe for their mentors that almost imbues them with hero stature..." (Lees, 2010, p. 451). Mentors were successful at molding their graduate students, however 50-70% surveyed indicated that mentors can be ineffective or harmful (Lees, 2010, p. 452). A mentor described in the text book was said to show positive traits but also several bad traits. Furthermore, the second generation students were not only shaped by their mentors, but also showed traits of the original mentor. Thus students needed to recognize the good values/traits, their origin, and which ones to avoid.

My research suggests that mentoring and positive relationships are key factors for a classroom, or lab, for success, and that successful tutoring programs created an environment where teachers were mentoring students to reach their goals. While growing relationships with students, it is also important to support students academically. Academic programs come in a variety of forms, however, a majority of programs are funded and taught outside of the school and its teachers. Tutoring seems prevalent in all core subject areas, but especially reading. It is available to all levels from elementary to higher education, and not only throughout the United States, but around the world (Huang 2013). For example, Huang (2013) collected data from the Trends in International Mathematics and Science Study (TIMSS) worldwide. According to TIMSS

in 1995, 31 out of 41 TIMSS participating countries had more than 20 percent of their students attending weekly tutoring sessions in the 8th grade (Huang, 2013, p. 690).

Huang's (2013) research was conducted to examine how after-school programs potentially closed the gap between high and low achieving students, and document the overall benefits of raising curriculum-based test scores for those who attended compared to those who did not. Huang (2013) also found that through the TIMSS after-school programs there was significantly less achievement inequality in science. In both mathematics and science, the use of the programs raised the national mean performance (Huang, 2013, p. 703), and in science there was a positive effect of test performance for tutoring students that was nearly twice as much as math. Science had a one percent raise with a 1.4-point difference in the nation's mean score. Math on the other had only a 0.82 raise in point difference. According to the data from these programs, students benefited from after-school tutoring. In science, low performing students have shown that the benefits of attending are twice as much as high achieving students, which closes the gap significantly (Huang, 2013, p. 705), and thus Huang's research supported the benefits of tutoring at a middle school level.

My review of relevant literature also found additional studies that have shown tutoring benefits at other levels as well, for example, most colleges have tutoring support for their students. Northampton Community College provided students with a learning center whose goal is to help their students. In the fall of 2003, Hendriksen et al. (2005) conducted a study that compared the final scores of those participating in tutoring (n = 1,385) to those who did not (n = 6,879). When looking at the course for which students

were tutored, 75% of tutored students received a grade C- or better compared to 71% for non-tutored students (Hendriksen et al., 2005, p. 60). The percent difference among groups may not seem very significant but the student survey reported that 88% of students felt their grade (s) improved due to the Learning Center. Another successful fact, 88 percent of tutored students re-enrolled in the college compared to the school's average of only 70 percent (Hendriksen et al., 2005, p. 61). The research showed that the students benefited from tutoring in their classes, even if it was a small increase. However, throughout my reading of their research, I concluded that the program was building confidence and the skills needed to be successful. They included a great quote that can be used at any level with any student, "Students who learn are students who stay" (Hendriksen, Yang, Love, Hall, 2005, p. 61).

In another study (Walker, 2010), data revealed a consistent theme that tutoring is not simply about a teacher sitting down telling a student information, rather, a tutoring programs needs to have a comfortable environment that teaches both content and the skills needed to be successful. The Education Partnership, Inc. stated, "tutoring allows students to feel more at ease and comfortable asking questions, making mistakes and developing academic confidence" (Walker, 2010, p. 2). The Education Partnership suggested a list of key reasons to participate in tutoring: academic gains, improved attendance, social and cognitive development, better attitude and confidence, and transferrable skills (Walker, 2010, p. 2).

Nelson-Royes and Reglin (2011) looked at tutoring in urban middle schools that was designed to target reading. In that study, the teachers who were interviewed believed

that students needed more of a relaxed setting to practice their reading skills. During these reading programs, the teachers practiced test preparation, note-taking strategies and problem solving skills. The programs also had motivational speakers (Nelson-Royes and Reglin, 2011, p. 113), and it was concluded that extra practice with reading is the best way to improve reading skills in all subject matters.

Huang and Cho (2009) looked into essential components to create an optimal tutoring environment and noted four main themes: 1) pre-set time for homework completion, 2) structured settings that provide materials and space that are devoid of distractions for homework completion, and 3) allotting sufficient time for homework completion as part of a routine daily schedule (Huang, Cho, 2009, p. 383). The study interviewed both teachers and parents, and found that a variety of practices supported student achievement, enhanced student motivation, and well-roundness. The programs used practices such as homework support, improved study skills, motivational strategies to maintain interest, and found a better understanding of the needs of the students (p. 386). While building study skills the students' confidence was boosted across all content areas. These study skills included organization, note taking, how to use reference materials, and test preparation skills (p. 387). To motivate the students, they used a reward system for example, if a student completed their homework, they would receive a certain reward such as other engaging activities (p. 389). The tutoring facility needs to be positive and open for students to feel more comfortable. The structure of afterschool tutoring tends to be less structured, more hands-on, and smaller groups or one to one. The study suggested that while implementing positive practices and enhancing

environmental atmosphere, the teachers need to maintain a structured motivational facility (p. 389). Based on this research the strategies mentioned above are important for a successful tutoring program.

The goals for most academic tutoring programs is to promote academic success, and for a program to be successful, I think they need to build a foundation where the relationship between the teacher and attendee creates a positive experience. A mentor can have an impact on a student's success, and my review of literature has shown that tutoring can help students learn. Many programs use strategies to assist students, and tutoring has been shown to help students with confidence in school and provide them with relevant skills to be successful even after they've moved on from the tutoring program. My hope is that through Friday School I can have the same successful results as studies I reviewed during my background research. I want to be a good mentor to my students, and I think I will be more successful if I implement supporting strategies similar to the research studies I reviewed.

METHODOLOGY

To begin my research, I developed a variety of methods to collect my data. Data were collected on 7th grade students who attended Friday School during the first and second quarters of the 2016-2017 school year. A treatment was created and implemented during the second quarter, and during the treatment, I intentionally built a better relationship with the students attending in the attempt to become a better mentor. Second, a variety of study skills were offered to students during Friday School, and each study skill treatment was conducted during a 30 minute scheduled time. The 30 min

session information was posted on two different signs in the classroom so that students were aware of what study skill was being implemented during the next Friday School. During the entire data collection, the program had a welcoming and relaxed feeling, and this was with the hope that students would feel welcome to come and learn.

In contrast to the treatment, throughout the first part of the data collection (i.e., the non-treatment phase), I did not intentionally implement any of the aspects that were applied in the treatment phase. It was a very much "go with the flow" type of setting. The assistance provided was based on the students' immediate needs, for example getting help on an assignment or getting make up work. The students who attended filled out a non-treatment survey before leaving the room (Appendix A) that was used to measure attitude towards attending, what they worked on, and how beneficial they felt the session was. I then recorded how long the student was in science and if there was any change in their grade based on the work done during the session.

Before beginning the treatment phase of the research students were selected to give an interview with the teacher to give a better insight into the student's thoughts regarding Friday School (Appendix B). This was given to both students who attended and did not attend the intervention program. As stated above, when the treatment part of the research began, I made intentional plans to build both relationships and study skills. Each Friday School there was a specific study skill including: vocabulary building, test/quiz study help, notebook organizing, and one-on-one help. At the beginning of the treatment phase, a "Fun Lab" day was offered in hopes to get more students to attend. After the 30-minute study skills sessions, the remaining Friday School time was for

students to get individual help on school activities they needed to work on. To build a mentor relationship with the students there was a "Fun Lab" day and prizes during the other sessions for those who showed positive gains academically and/or socially. While the treatment occurred, I collected data using a variety of methods (described below), and at the end of the data collection phase, a survey was given to each student to ascertain if their relationship changed with the classroom teacher while attending Friday School (Appendix C). A variety of data collection methods were used to answer the Action Research question and sub-questions. There were 64 students in the 7th grade, and students represented a variety of social and economic levels, with the majority showing white ethnicity, and a small proportion of Hispanic students. Out of the 64 students, 33 were females and 31 were males. Twenty-three students were on a free or reduced lunch program. Finally, Table 1 shows my data collection instruments for each question within my Action Research project.

Table 1
Data Collection Matrix

	Teacher Reflective Journal	Student course scores	Student test/quizzes scores	Friday School attendance hours	Student survey and interview	Frequency charts and graphs
How does BHS student intervention program affect student achievement?	1	2, 3, 4	2, 3, 4	2, 3, 4	1	2, 3, 4
What are the effects of the student intervention program on the classroom teacher?	1	4, 5	4, 5	4	1	4
What attitudes do students have towards the student intervention program?	1				1	
What is the relationship between program attendance and academic achievement?		4, 5	4, 5	4		4, 5
How does implementing study skill in the intervention program affect academic achievement?	1, 3	2, 3, 4	2, 3, 4	2, 3, 4	1, 3	2, 3

Note: The following key was used to identify reasons why each data method shown in Table 1 was suited to gather data for the question it is matched to:

1: Provides qualitative data, such as information that can only be answered by the student or observed by the teacher.
2: Data will show baseline of the students' information (prior to the treatment).
3: Data reflects the value of the treatments.
4: Provides quantitative data of students who attend the intervention program
5: Data collected that involves the entire 7th grade class

For my data collection, the teacher journal helped generate qualitative data throughout the entire data collection sessions. During each session, I wrote down what I observed in Friday School. Appendix D is the template outline for each Friday School.

At the end of each Friday School, I ranked overall how successful the session went on a scale of one to five, with one being terrible, and five being the most successful possible. To give validity and reliability to the instruments, fellow colleagues and professors looked these over (Appendix A and E).

Student's attendance hours, test/quiz scores, and end of quarter course scores were recorded to create quantitative data that was used to generate frequency graphs, in a variety of ways, to observe potential trends. I then compared the quantitative data to the qualitative to assess if there were additional trends between each data type. For example, one analysis compared whether students who had a certain attitude towards attending the intervention program was related to how often they attended it. Throughout the data analyses, the goal was to find answers to my stated research questions (Table 1). In conclusion, the research methodology used during this Action Research project received an exemption by Montana State University's Institutional Review Board (IRB) and compliance for working with human subjects was maintained, refer to Appendix F.

DATA ANALYSIS

Through the different methodologies I implemented, data was collected and analyzed to answer my action research questions. The data analyses I conducted used all of the instruments from my methodology matrix (Table 1). Furthermore, there was both quantitative and qualitative findings from my study. The data were collected during a total of 11 two-hour Friday School sessions, with 6 non-treatment and 5 different study skill interventions in the treatment phase. During the 11 sessions, there was a total of 70 attendees, 33 for Quarter 1 non-treatment, and 37 during Quarter 2 treatment (this

included an overlap of students who attended both non-treatment and treatment). During the five 30-minute treatment sessions there was a total of 40 attendances among 26 students. There was a total of 104 surveys completed during the two sessions, 59 surveys completed by males and 45 by females.

Each Friday School session I recorded how long each student was working in science within a 15-minute interval. At the end of the non-treatment Quarter 1 student's overall course score was recorded. For example, a student attended Friday School for 1.75 hours and received an 87% in science during Quarter 1. Figure 1 represents the non-treatment attendance versus science Quarter 1 percentage. The baseline for this graph was that students attended Friday School in science for a minimum of 15 minutes, or they had lower than a 91% in science for Quarter 1.

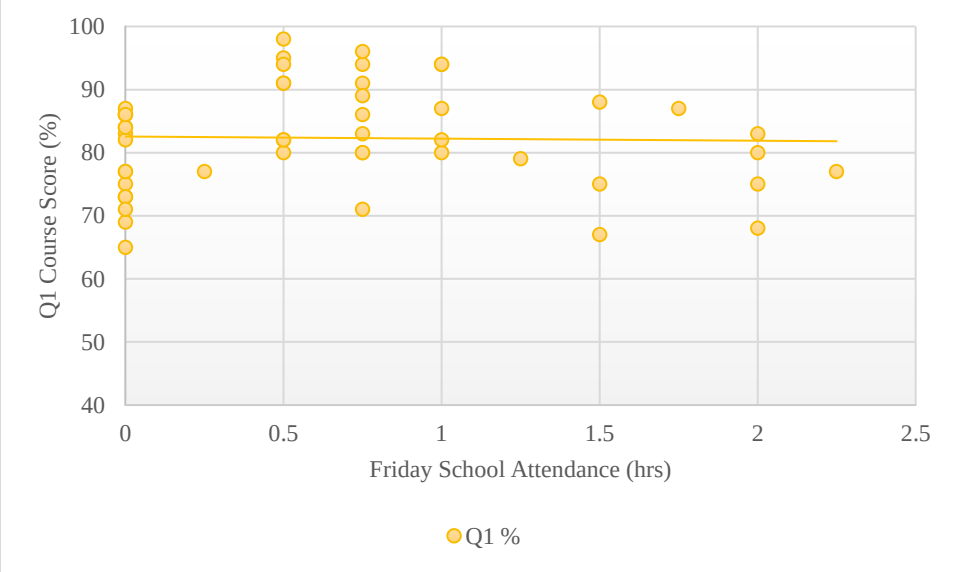

Figure 1: Course score vs. Friday school attendance, non-treatment, *(N*=49*)*.

While creating Figure 1, I believed that any student who did not attend, but achieved at least a 91% or above, should not be included in the graph. I also believed

that any student who did not attend, but was at an A status, may not have necessarily needed to attend to be successful in science. If a student did attend Friday School, and was above a 91%, they were included in the graph. Any students with a 90% or below were included regardless of their attendance hours.

As Figure 1 shows, there was a very slight negative relationship between attendance hours and course score during the Non-Treatment phase. I think this is because the students who attended Friday School tended to be students who needed help with their class grade because they did not understand the content, or were missing assignments. Students who tended to have an A in class did not attend. Figure 1 also shows that most students who attended between half an hour to an hour were mostly above the trend line. When looking at students who attended for one hour, the result showed a less clustered group of percentages. For the students who did not attend during the non-treatment, the majority of them were below the trend line, however, the trend line does not have a large margin of change. There were 16 students who did not attend Friday School at all, and their average for Quarter 1 was a 78.6% compared to an overall average of 85.2% for the entire 7th grade. For the 49 students graphed in Figure 1, the average was 82.3%.

For both quarters there was a select few students who did not pass the quarter, and for Burns, a 70% is considered passing. Table 2 compares the attendance hours and course score for any student who did not pass either Quarter 1 or 2.

Table 2
Failing Students Quarter Comparison

Student's Initials	Quarter 1/ Attendance Hours	Quarter 2/ Attendance Hours
K. A.	68% / 2 hrs	63% / 0 hrs
D. B.	67% / 1.5 hrs	71% / 2.25 hrs
L. G.	65% / 0 hrs	70% / 0 hrs
J. J.	69% / 0 hrs	71% / 1.5 hrs
A. R.	71% / 0 hrs	60% / 0 hrs

In the 7th grade there were a total of four students who did not pass Quarter 1. Two attended the intervention program and two did not. Female K.A. attended for two hours and received a 68%, this student is low-income and on an IEP. Male D.B. attended for 1.5 hours and received a 67%, this student was on an IEP in elementary school and was on a 504 (i.e., a specialized academic plan). Female L.G. who did not attend received a 65%, she was a low-income student. I informed her she should attend to help her get missing assignments completed. However, she could not attend because she helped run her family's store on Fridays. Male J.J. who did not attend received a 69%, and he was a low-income student. The teacher felt that if he would have attended he could have completed missing assignments to get a passing grade.

The treatment phase occurred during Quarter 2. Figure 2 was created with the same format as Figure 1 above. Recall that during the treatment I intentionally built relationships with students and implemented a variety of study skills.

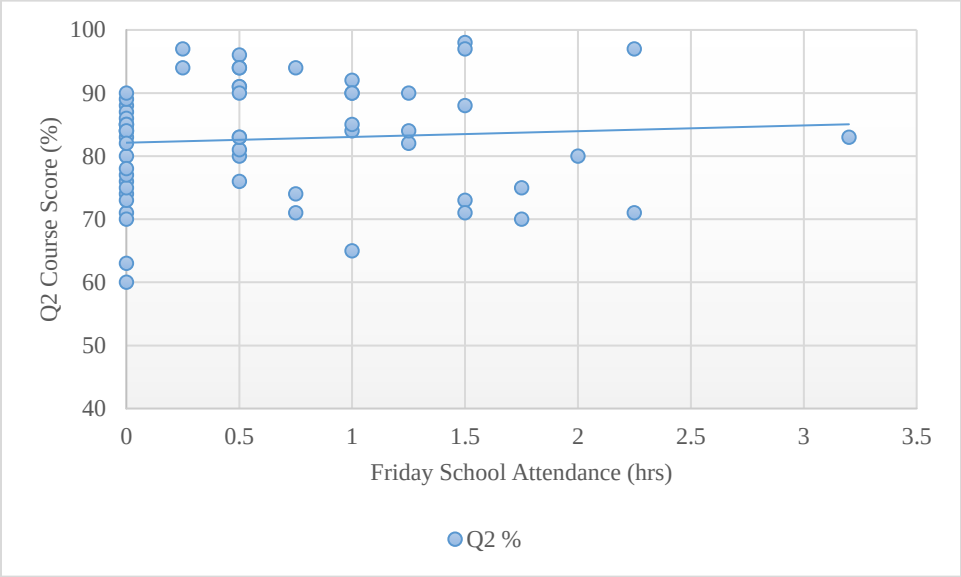

Figure 2: Course score vs. Friday school attendance, treatment, *(N*=60*).*

During Quarter 2 there was more of a positive relationship between attending Friday School and course score. The plot dots seem show greater spread (i.e., variability) and show less trends compared to Figure 1's non-treatment. For the entire 7th grade Quarter 2's average was 83.5% and for the 60 students graphed in Figure 2, the average was 82.7%. There were 24 students who did not attend, and showed an average of 79.5%, which was lower than Quarter 1 by .9%.

For Quarter 2 there were only three students who did not pass with a 70% (see Table 2). Female K.A. who attended 2 hours during Quarter 1 dropped her score to a 63% (5% less) but did not attend Friday School for any amount of time. Female A.R. did not attend either Friday School but received a 71% during Quarter 1 compared to a 60% during Quarter 2. I struggled with this student because she was a full ESL Spanish student. Male M.S. attended Quarter 1 for an hour and a half, receiving a 75%. For Quarter 2 he only attended for an hour and received a 65%. This male was a low-income student. Male J.J. who did not attend Friday School during Quarter 1 did attend Quarter

2 for an hour and a half, received a 71% compared to his 69% during Quarter 1. Female L.G. still did not attend but received a 70% for Quarter 2. Male D. B. who received a 67% Quarter 1 increased his attendance by 45 minutes received a 71% for Quarter 2. Refer to Table 2 to see a comparison between failing Quarter 1 and 2 students. Based on this information, for those students who failed either quarter, 4 out of 6 students had a higher grade when they attended more hours.

At the end of each Friday School I would go through and grade all the assignments that were turned in. This included only the work that was completed during Friday School. I wrote the students' grades before they attended, and then what their grade was if an assignment was turned in. During the non-treatment phase 72% of the time a student saw an improvement to their grade, 28% of the time the science grade was not immediately effected by attending, (Appendix G). For the treatment, however, the grade improvement results differed. During the treatment phase, 55% of the time when students attended, their grades did not have a grade improvement compared to the 45% of student grades that did increase (Appendix H). I felt this is because during the treatment phase the study skills were implemented. None of the study skills sessions had an assignment that would directly affect grades during the intervention time, but rather, the skills assignments were designed to help grades in the future. Overall, 59% of the time a student who attended Friday School had an immediate grade boost. This is evidence that if a student attended Friday School, they were more likely to improve their grade by simply coming and working on assignments. I feel it shows why a student should have a positive attitude about attending.

Following each Friday School, the majority of students filled out a student survey. This was done each session they attended regardless of how many Friday Schools they came to. For the non-treatment portion of the study, refer to Appendix A survey. For the treatment portion of the study, refer to Appendix E survey. There was a total of 104 surveys filled out, 53 non-treatment and 51 for treatment. For each, they rated their attitude towards attending and how helpful the session was. The treatment survey also had students rating their study skills experience. On both surveys, students rated their attitude as dislike, indifferent, like or love. Before the action research began, I predicted that most students would rate it mainly at indifferent or like, but this turned out to be incorrect. Appendix I indicated that during the Quarter 1 non-treatment 59% of students liked Friday School, 32% loved it, 9% were indifferent about attending and 0% disliked it. According to the teacher journal, I was also seeing the sessions as more positive than in years passed. I was still shocked there were no students who disliked attending. During the non-treatment there were also no students who reported they disliked attending the intervention program. The figure in Appendix J shows that during the Quarter 2 treatment there was a decrease from 32% to 27% of students who loved attending. However, there was an increase of "like" from 59% to 61% during the treatment. All students who attended more of the engaging study skills (Fun Lab and Vocabulary) put like or love on their survey. There was also an increase in "indifferent" from 9% to 12%. There was a total of 6 students who wrote they were indifferent during two quarters. One particular student attending three sessions wrote indifferent all three times. His response to why he rated his attitude that way was, "It is like regular school".

The same response was also indicated by a student who wrote indifferent. Additionally, there was one more student who attended Friday School three times, writing indifferent on all surveys. This is why there was a larger number of male surveys indicating they were indifferent about attending Friday School. A total of nine surveys from males had indifferent attitudes compared to two by females. There were 31 males and females who responded they "liked" attending. There was a 19 male to 12 female ratio of students who responded "love" to attending. As the classroom teacher, I think students had the positive attitudes because the atmosphere was much more relaxing than the regular class time. Also, I think they got to work on what they needed or attended the study skills they felt they needed help with. If a student feels it is helpful I believe the positive attitudes will show.

Attendees also recorded how helpful each session was. On both surveys they had the options of; not helpful, somewhat, helpful, and really helpful. For the non-treatment Appendix K shows that 67% of students felt their session was really helpful, followed by 26% helpful, 7% somewhat helpful, and none recorded that the session was not helpful. There was a decrease of students who found Friday School helpful during the treatment (Appendix L). It went from 67% to a 54% during the treatment. However, the somewhat decreased to 4% with not helpful to a 0%.

Very few students indicated on their survey they felt Friday School was unhelpful or indicated negative attitudes towards attending. There was a strong trend of students who liked or loved Friday School and felt it was helpful or really helpful. For those students who felt it was somewhat helpful, the recorded: loving, liking or indifferent

attitudes while attending. The variation of results also occurred when looking at students who felt indifferent attitudes; somewhat helpful, helpful and really helpful. These surveys were used to see trends and supporting qualitative data in the teacher's journal. As the teacher, I feel I would have reported the same as the students. If you feel something is worth your time, you are going to have a positive attitude towards it.

Throughout the Action Research data collection, I created a journal to record intervention sessions. Appendix D provides the format of the teacher journal. The purpose was to collect what I was observing, hearing, and my reflection thoughts. Themes were presented throughout the Friday School sessions. One key observation was that the majority of the time, most students were motivated to get work done. When the motivation was not present, this was due to other students who come in and distracted others. The look of Friday School was very relaxed due to students volunteering to attend. The relaxed setting seemed to be both a positive and a negative. Students would say how they liked getting their missing assignments done during Friday School. Students also said they attended to have the classroom teacher help them understand a concept better. Many students seemed more comfortable asking questions due to the different settings. I think it was difficult for me to get students who were not there to work out of the class. It also made it difficult for me to keep students in class for an extended period of time if they were failing and/or needed help in other classes. When students were on task working on science they mainly worked on missing assignments. This is a positive thing however, and I commented in my journal that I wished I could tutor and help students related to understanding content more than them simple worried

about what their score was in the gradebook. I also think if I had a specific amount of time the student was required to stay, I would have had the leverage to provide more tutoring. There also were some sessions where the large amount of students caused my time with each student to be spread thin. During the treatment phase of the research, I did feel like I was starting to make a bigger tutoring impact than simply helping students complete assignments.

The attitudes students reported in their surveys correlated with what I observed in the classroom. During the majority of time students wanted to be there, and there was only two times I recorded negative attitudes. A male who was forced to attend by his mother recorded that the session was somewhat helpful and he was indifferent about attending. The other student I recorded as a negative attitude stated it was a really helpful session and he liked attending, and I think the negative attitude was more due to the frustration of being behind in the class and not attending.

With the conclusion of Quarter 1 ended, and before the treatment phase, I gave student interviews (Appendix B). The interviews were "selectively and somewhat randomly" chosen. I wanted half the students who attended Friday School randomly and half who didn't, including some I felt should attend. However, I did not get any useful data from the students, and I thought they were more telling me what they felt I wanted to hear rather than being open an honest. All but one felt learning study skills during Friday School would be beneficial, but could not indicate why or what skills would help the most.

To help me implement more of a tutoring focus rather than simply homework time, I implemented study skills. However, based on my reflection and teacher comments, that did not work as well as I had planned. The classroom had to be flexible. For example, the Friday School "fun lab" had a larger number of students attend than I had planned, and that resulted in everyone doing the lab (including the teacher, in hopes to build a better relationship with them) but as soon as it was over, students filled out their survey and they rushed out to work on other classes which resulted in me being unable to provide a good reflection over the activities. Surveys after the lab showed that all but three students wrote they loved attending Friday School. A high achieving student who does not usually attend said, "I only came to do the fun lab, we should do it again because I love science labs". Two females attended the Fun Lab activity, who are both on IEPs and socially on the quieter side, mentioned they only came to Friday School to be able to do the labs. It was nice to see these two be a bit more outgoing and interact more with their peers. I recorded that I enjoyed being able to bond with students, along with seeing the girls come out of their shells more.

There was also a large group of students who attended the meiosis vocabulary study session. We went through words on their list that were confusing them, followed by "I have, who has". This is a vocabulary game where students are matching words with their definitions. Students were very engaged in the game and ended up playing it numerous times. By the end, I could see that students were understanding the vocabulary better than previous units. According to the survey 6 of 12 students felt the session was "Very Helpful", with 5 saying it was "Helpful" and 1 student saying it was "Somewhat"

helpful. The following week during class one particular student showed the benefits of attending the session. This student does not tend to raise his hand to volunteer answers but when I asked questions related to the vocabulary his hand shot straight up. Later in class, the student told me with excitement, "I actually remember the vocab words from that game!" This student received an 80% on the quiz that contained this vocabulary, and his semester one quiz average scores were 69.8%.

The third study skill implemented was the notebook organization, and there were five students who participated in this skill, including three male students who really needed it, and two female students whose notebooks were organized but were due to extra time they had. This study skill was hard to implement because students wanted to work on assignments related to their grade not organize their notebooks. One student's parent came in with him, which made me feel uncomfortable working with him due to her strong control over him. He did however organize his notebook with her help. Another student who organized his notebook ended up finding assignments he was missing which improved his grade by 2%, thus even if there were not many students willing to participate, at least there was some benefit to it.

Throughout the data collection time period students came in to study. However, there was one particular session that was directed towards studying for a Meiosis Quiz. There were two parts to the studying, including with classmates, or with the teacher. The students studied together when the classroom teacher was helping other students. Then the teacher (me) would quiz them with a variety of questions, then they would discuss what students were not understanding. I thought this set up study session went well

because students who did not normally attend Friday School came to study. Students also were more concerned with studying for the future and/or understanding content rather than simply, "How does this help my grade now?" Figure 3 below shows how the students who studied during Friday School tended to have improved test scores.

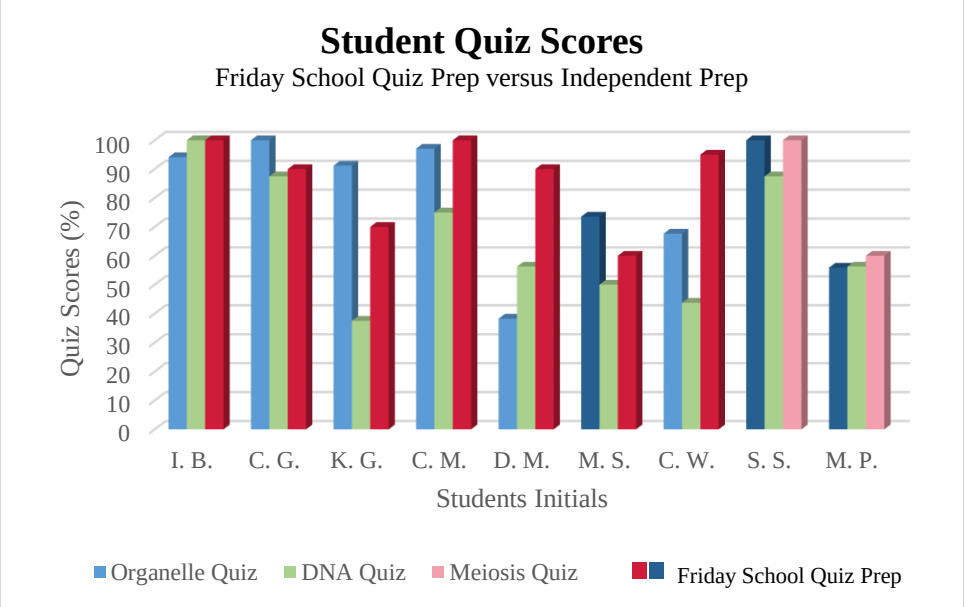

Figure 3: Student quiz scores, Friday school quiz prep vs. independent prep, *(N*=9*)*.

Figure 3 shows nine different students who studied during Friday School. The darker colored bars (dark red and dark blue) indicate the quizzes that the students prepared for during Friday School. The lighter bars are for quiz scores that students did not prepare for at Friday School (light blue, pink, light green). For these quizzes, I did not have knowledge to how much or little the student studied independently. Out of the nine students, only M. P. had her lowest score be the quiz that she studied for during Friday School. Her scores were approximately about the same percentage. Six out of the nine students had either the same score or higher on the quizzes they studied for during Friday School. M. S. came in to study for two quizzes during Friday School, and her

worst quiz score was the one quiz she did not come in to get help. Two of the nine students had their second highest score be the Friday School study quiz content. Based on these nine students, 88.9% of them benefited from studying during the intervention program.

The last intervention Friday of second quarter I worked with three boys one-on-one who were in danger of failing the quarter (below a 70%). For this study skill, I helped students complete the work that was missing or done incorrectly, and then I sat down with them to discuss what went well with the semester, what they needed to improve on, and their goal for the next semester. The answers were written down on a sticker, which was put into the cover of the students' interactive notebook. One student who is a frequent attendee of Friday School had a smile on his face after we discussed what he was good at. According to my teacher journal, I wished more students would have participated in this, but due to it being the end of the quarter, most students were not sticking around to get assistance, but just turning in assignments and leaving. The end of quarters tended to be a little chaotic during Friday School due to large numbers of students last minute working on their grades.

Each time the students attended a study skills session they ranked from 1 to 5 how helpful the skill was. One being less helpful to 5 being the most helpful. Appendix M, showed 5 was chosen the most at 39%. Followed by 37% ranked the skill at a 4, 16% at 3. Lastly, 1 and 2 at 3 and 5 percent. When asked why they choose that ranking majority mentioned understanding the content better after completing the skill.

In addition to study skills during the treatment section of the intervention program, I attempted to become a mentor to the students who attended. I did this in a variety of ways. First, I participated in the "Fun Lab" day to get to know the students more on an informal level. I thought the students were more open and talkative with me during this activity, as if I was one of their peers having fun. Then throughout the quarter I intentionally tried to get to know students better. One boy who tended to attend Friday School every week appeared to work harder as I think our relationship improved. I also give small "prizes" for those who attended the treatment study skills. These prizes would simply help me show I appreciated the students who attended and worked hard. By the end of the semester, I think that my relationship with students who attended regularly improved and carried into the regular school day.

At the end of Quarter 2, I gave each student a survey to see if our relationship grew due to attending Friday School. If the student marked they did not attend Friday School then their survey results were not used. There was a total of 46 students who said they attended, 86.9 % of students felt their relationship with the teacher grew, 13.1% felt it did not. Three students also felt that if they did attend Friday School the student teacher relationship would grow. There were two main common themes to why students felt a relationship improvement. A large majority wrote that the teacher helped them understand homework/content etc. better. The second theme was related to the students feeling the teacher cared about them and their academic success. For example, "Miss Farrell helps all her student to the best of her ability." Or "It helps me to learn more about her, and help me to understand why she pushes us." For the students who did not feel

their relationship grew was due to lack of attending science on a regular basis. There were two students who wrote didn't feel they received enough help. Overall, it seems that during the data collection period the student teacher relationships grew while attending.

The teacher journal provided a good insight to what was going on during Friday School. Each week I ranked how well the intervention program went that day out of five. The average was a 3.6 out of 5. Reasoning for lower ranked Friday Schools, was mainly contributed to me feeling the session did not go as planned, I felt disorganized or large numbers causes chaos. The journal impacted me as the teacher because I was able to record my thoughts and feelings. Entries were able to show positive and negative feelings for each session. Positives feelings, such as observing the students' excitement about accomplishment. Negatives such as, students coming and going without staying to get as much help as they needed. I recorded it being difficult to take the time to fill out the journal when the classroom was filled with students.

INTERPRETATION AND CONCLUSION

The purpose of this action research was to see the relationship between an intervention program and student success in a middle school science class. I think that there was a positive academic correlation between attending Friday School and the students who attended. I also think that I built better relationships with my students who attended.

In my primary research question, I wanted to know how Burns' intervention program affected student achievement. Overall, the research showed that students who

attended improved their course scores in science. This can be seen in a variety of ways, for example, my data showed that 59% of the time, by simply coming in to work on fixing and/or completing missing assignments, a student's classroom score would increase. To help answer my research question I looked at four different sub-questions. Sub-question one referred to the correlation between attending the program and student academic achievement. During the non-treatment phase there was a slight decrease in attending versus course score. However, I think this is because those students who attended more hours were students who tended to have lower scores in class. During the treatment phase, there was a slight positive relationship for students who attended. This could have been because there were more students who attended the study skills sessions who had higher than average course scores. Table 2 displays the students who were on the pass/fail bubble benefited by attending Friday School. Three of the five students on the table had higher course scores when they attend longer hours. When looking at the averages, Quarter 1's average for the entire 7th grade was 85.2%, for those who did not attend it was 78.6%. Quarter 2 was similar with a difference of 4% lower for overall 7th grade and those who do not attend Friday School. When looking at both figures (Figure 1, Figure 2) it looks like there are more data points for zero hours below the trend lines than data points of students who attended below the trend line. This especially looks true for Treatment Figure 2. I think this study showed that by attending Friday School a student was more likely to achieve higher grades in science, especially if the student tended to be on the lower end of achievement. I do not think my study showed enough evidence that Friday School helped already high achieving students as much.

The next sub-question was based on students' attitudes towards coming to Friday School. I think as the classroom teacher that I observed more positive attitudes than I had in previous years. Students also recorded these positive attitudes. I was happy to see that there were no students reporting that they disliked attending. If there were positive attitudes during the intervention session, then there was more willingness to work. I recorded seeing both in my journal. The "love or like" responses were strongly present during engaging activities, which also shows that if I want more students to love or like an activity engaging them may be what is key. There was a strong trend as well with students stating they loved or liked attending with reporting a helpful or very helpful session. This indicates that if a student thinks that a session is helpful they will have positive attitudes or vice versa. As the teacher, I want to work with students who have a good attitude and want to be there.

I think the treatment phase of this action research was the most interesting and rewarding. Trying to implement it made me come out of my shell more than normal. None of the study skills treatments I set up seemed to go as I had envisioned in my head. It reminded me that being flexible is always important. After the sessions were over, I would leave thinking that the students did not get out of it as much as I would have wanted, but I was wrong. The vocabulary session, showed me that by simply playing a game with difficult words helped some students remember them better for the future. The example of a student whose quiz average was a 69.8%, received an 80% on the quiz related to the vocabulary session he attended. The other strong study skill session that I believe showed the most value was when students came in to study for assessments.

Back to Figure 3, only one out of nine students did not do better on the assessment when they studied. That in itself is a constructive outlook on the intervention program. With the other sessions, I think they will just take trial and error to experiment the best way to implement the skill. Students who attended treatment study skills ranked the sessions 39% of the time a 5 out of 5. Only 3% ranked their session a 1 out of 5. The "fun lab" session did not directly affect student grades or content, but I felt it was one of the most beneficial things I did during Friday School. I experienced students feeling more comfortable with themselves and their peers. I experienced students enjoying learning in science without worrying about being successful or receiving a grade. The most important thing for me was to experience building a better relationship with those attending. It gave me the opportunity to interact with the students more on a personal level than the normal teacher role during the school day.

The last sub question covered how the action research affected the classroom teacher. If there was one thing I learned from the research, it was that building relationships with students is invaluable. During my treatment, I did my best to build better relationships with my students. Out of the students who attended Friday School, 86.9% felt their relationship with me grew. I think it was important to me to hear them comment that they know I am trying to help them with the best of my ability, and that is important to me. After the action research ended, I had one particular relationship I think shows the importance of mentorship. Looking back at D. B.'s data on Table 2, he went from a not passing grade to passing with a 71% by the end of the treatment. At the beginning of the school year I struggled to understand him and he lacked the ability to

focus. By the end of the treatment, I observed that our relationship had grown immensely. I think I get the way his brain works now and can enjoy his quarks. I do not think I could have reached this without him attending Friday School. The whole reason I became a teacher was to help students, and Friday School made me feel like I was making more of a difference.

In addition to me reaching the benefits of mentorship, simply going through the process of collecting the data provided insight. I found it difficult to record in the teacher journal but it was a good reflection tool. It was nice to go back and read what was going well and wasn't for every particular Friday. Throughout the process I realized that as a teacher I need to be better at being flexible if I have something planned and give the students more control on their learning.

To answer my main research question, the data indicated that if you attend an intervention program there is a benefit. This especially is true for students who need more help in science. I think the data would be consistent in any content area or grade level. It would also relate to any type of intervention program, even if it is not exactly like Friday School. I think that my study did not show the underlying reasoning for students' struggle in science. I would need to research different information to discover which aspect for each student caused them not to understand. For example, perhaps one could look more into the student's home life/background, or research standardize test scores.

VALUES

After completing my action research, I believe it is vital to share my results and information with both parents and colleagues. If parents can see that by attending Friday School their student will more likely achieve better scores in science, I may have more attend. I also want to share my data with my school and district. This will hopefully lead to discussions about how we can keep improving the intervention program. One thing I want to work on is, "how do I keep students who need help in my classroom for longer?" This was a trend mentioned in my journal numerous times.

This action research made me feel the value of building relationships. The next step in my action research would be to focus the data on mentorship. It is clear that attending helps students academically, but how does having a strong relationship with your teacher affect you as a student?

Next year, I am going to start the year off with building relationships. I think I will continue to have study skills sessions throughout the year. Not all of the study skills proved to be beneficial during this study, but the ones that did are important to continue. Such as, the fun lab to get students engaged in science and the study sessions which have shown improvements in quiz and test scores. I have thought of creating a specific schedule, for example the first Friday School of the month will be a "fun lab" session. To solve the problem with students only coming in to work on missing assignments, I think I need to communicate my expectations with the students. I believe that I need to tell them that when they come into my classroom they are required to stay a certain

period of time to both get their work done and receive tutoring. I think I can do this by showing them how beneficial study skills can be.

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APPENDICES

APPENDIX A

NON-TREATMENT STUDENT SURVEY

Friday School Survey

Name: Date:

What did you work on?

On a scale of 1 to 4 how helpful what Friday School today

1 2 3 4

Not helpful Somewhat Helpful Really Helpful

How do you feel about attending Friday School?

Dislike Indifferent Like Love

What would you change about Friday School?

Comments:

APPENDIX B

PRE-TREATMENT STUDENT INTERVIEW

Pre-Treatment Interview Student Name:
How often do you attend Friday School?

1-Never 2-Occasionally 3-Regularly

(Answered 1) If never, why not?

(Answered 1) What would make Friday School more appealing to promote you to attend?

(Answered 2 or 3) What do you think works well about Friday School?

(Answered 2 or 3) What do you think doesn't work well about Friday School? How might that be improved?

(ALL) How would you feel about learning study skills during Friday School? Such as organizing your notebook, review sessions or one on one tutoring. What could be done to make that more helpful?

APPENDIX C

MENTOR STUDENT SURVEY

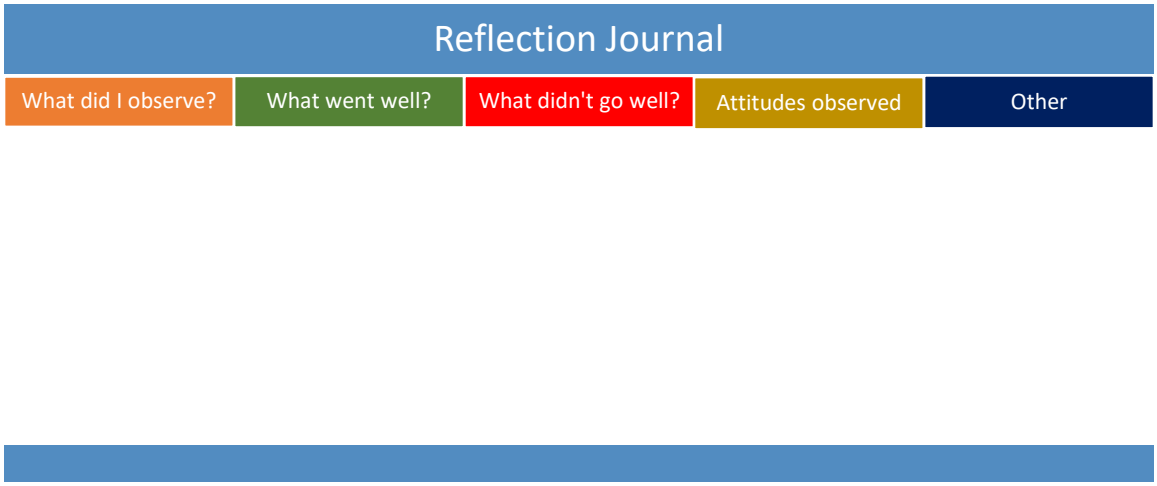
Do you attend Friday School? YES NO

Do you feel by attending Friday School your relationship with Miss Farrell has grown?

Why did you answer this way?

APPENDIX D

TEACHER JOURNAL FORMAT


Reflection Journal
What did I observe?
What went well?
What didn't go well?
Attitudes observed
Other

APPENDIX E

TREATMENT STUDENT SURVEY

Treatment Survey

Friday School Survey

Name: _____ Date:_____

What did you work on?

On a scale of 1 to 4 how helpful was Friday School today

1	2	3	4
Not helpful	Somewhat	Helpful	Really Helpful

Why do you feel that way?

How do you feel about attending Friday School?

Dislike Indifferent Like Love

Why do you feel that way?

Did you feel the study skills (organization, study session, one on one tutoring, etc.) you did today helped you be more successful in Science? On a scale of 1 to 5.

Not at all 1 2 3 4 5 Lots

Why did you answer the way you did in the last question?

APPENDIX F

IRB EXEMPTION

MONTANA
STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD
For the Protection of Human Subjects
FWA 00000165

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MEMORANDUM

TO: Anna Caitlin Farrell and Walter Woolbaugh

FROM: Mark Quinn Mark Quinn cxj

DATE: October 17, 2016

SUBJECT: "*Middle School Intervention Program*" [AF101716-EX]

The above research, described in your submission of October 14, 2016, is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal regulations, Part 46, section 101. The specific paragraph which applies to your research is:

__X__ (b) (1) Research conducted in established or commonly accepted educational settings, involving normal educational practices such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

__X__ (b) (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

____ (b) (3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement}, survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

____ (b) (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available, or if the information is recorded by the investigator in such a manner that the subjects cannot be identified, directly or through identifiers linked to the subjects.

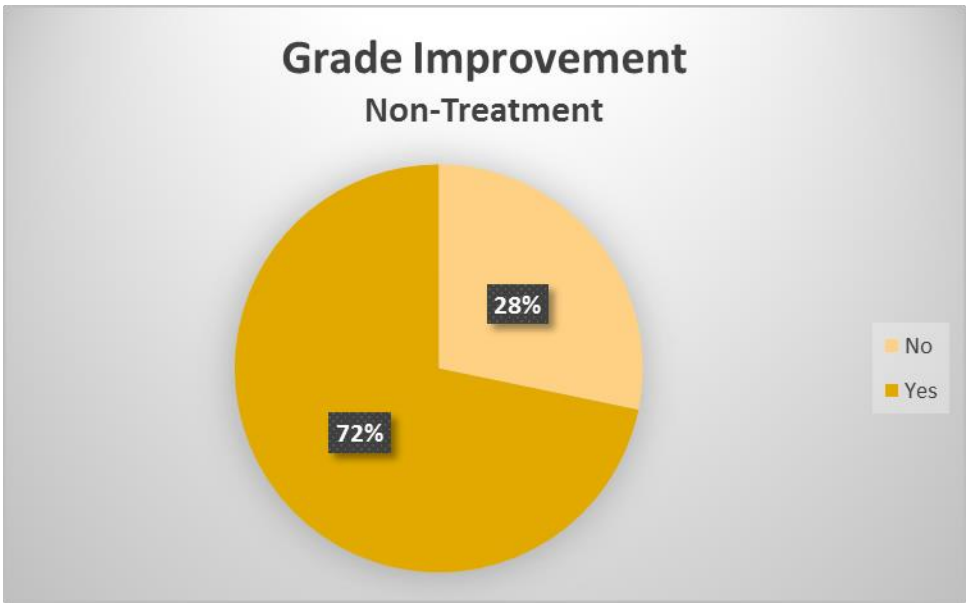
____ (b) (5) Research and demonstration projects, which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

____ (b) (6) Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed, or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the FDA, or approved by the EPA, or the Food Safety and Inspection Service of the USDA.

Although review by the Institutional Review Board is not required for the above research, the Committee will be glad to review it. If you wish a review and committee approval, please submit 3 copies of the usual application form and it will be processed by expedited review.

APPENDIX G

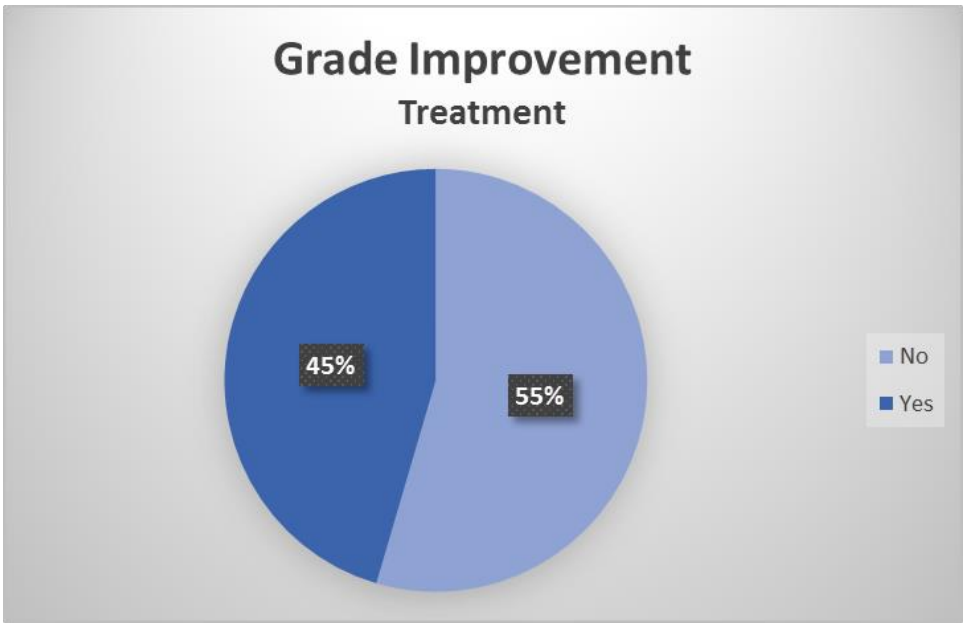
NON-TREATMENT COURSE GRADE IMPROVEMENT



Appendix G: Student grade improvement while attending Friday School, non-treatment, *(N=46).*

APPENDIX H

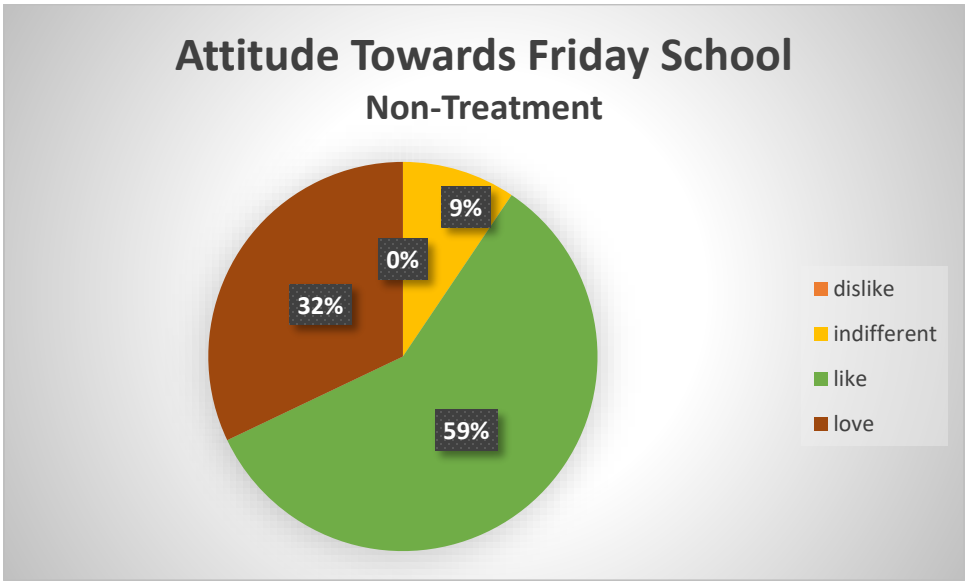
TREATMENT COURSE GRADE IMPROVEMENT



Appendix H: Student grade improvement while attending Friday School, treatment, *(N=44).*

APPENDIX I

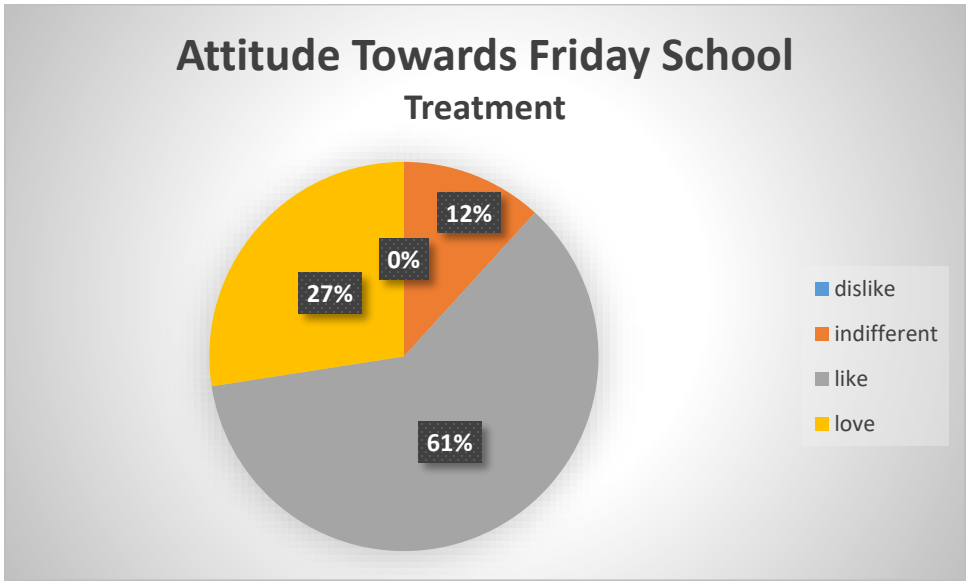
NON-TREATMENT ATTITUDE SURVEY RESULTS



Appendix I: Student's attitude towards Friday School, survey results, non-treatment, *(N=53).*

APPENDIX J

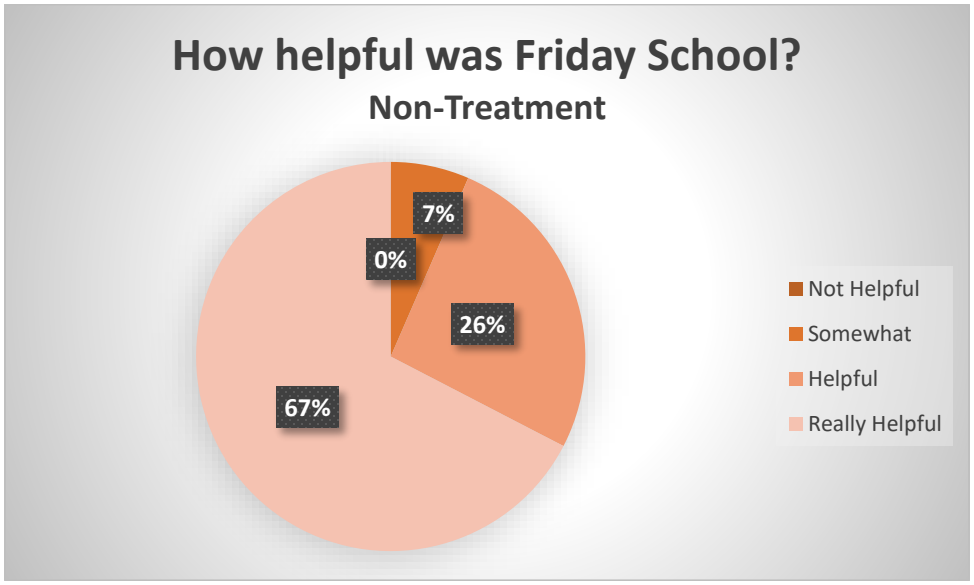
TREATMENT ATTITUDE SURVEY RESULTS



Appendix J: Student's attitude towards Friday School, survey results, treatment, *(N=51).*

APPENDIX K

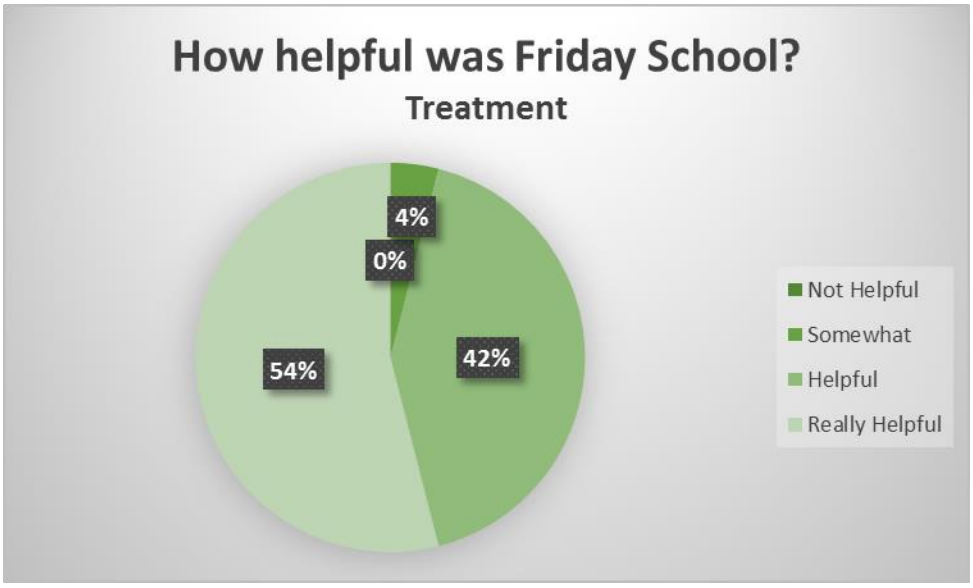
NON-TREATMENT HELPFULNESS SURVEY RESULT



Appendix K: Helpfulness of Friday School, survey results, non-treatment, *(N=46).*

APPENDIX L

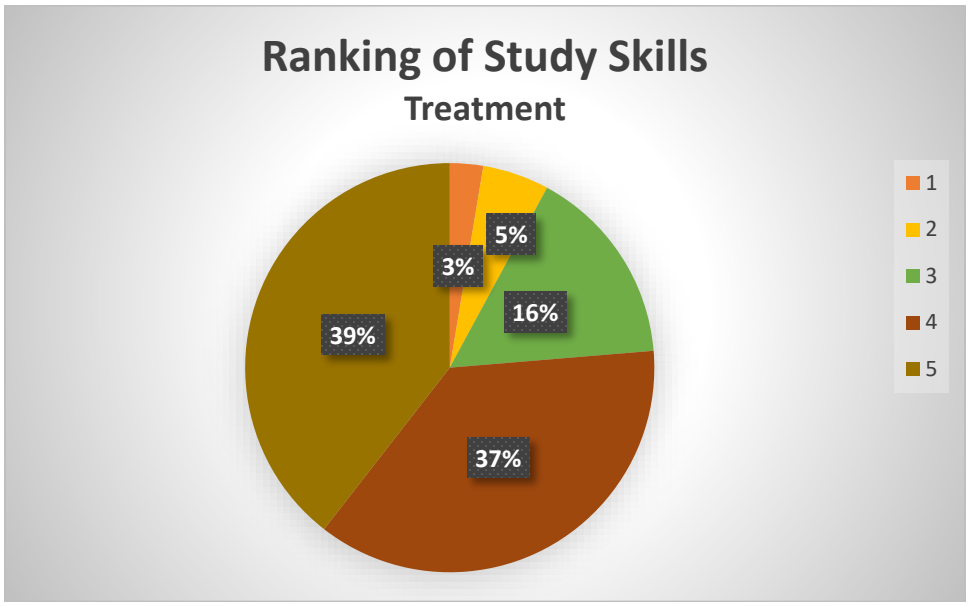
TREATMENT HELPFULNESS SURVEY RESULT



A*ppendix L:* Helpfulness of Friday School, survey results, treatment, *(N=50).*

APPENDIX M

STUDY SKILLS RANKING SURVEY RESULTS, TREATMENT



Appendix M: Student's survey ranking of study skills, treatment, *(N=38).*