

Impact of Motivational Intervention on Student Academic Output

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ABSTRACT

The purpose of this study was to determine if a group of at-risk 9th grade students in English would increase motivation after participating in a targeted goal setting intervention. The study used a SMART Goal tracker with weekly check-ins as the intervention. The pre-test and post-tests included teacher surveys, student surveys, grades, and work completion percentages. Both the control and experimental groups showed a statistically significant gain in academic output and when comparing the two, the experimental group did not achieve high enough to show a statistically significant gain. The anecdotal information provided by the teacher showed a greater increase in motivation among the experimental group. Further research is needed to determine if a goal setting motivation will truly impact the intrinsic motivation of students, as the statistical data does not correlate to the subjective data presented by the teacher and the researcher.

CHAPTER 1

INTRODUCTION

Overview

Motivation is a direct contributing factor to student work production. Attributes that can affect motivation negatively include elements that increase stress, such as having a Learning Disability or coming from a low-income household. These two designations have been correlated with lower academic output. The problem of motivation especially becomes noticeable when students enter high school and are now more accountable for credits and grades in order to be promoted to the next grade level. This new pressure can serve to increase or decrease motivation for many students. Students that have an added element of extra stress are more likely to lose motivation and perform poorly with regard to academics.

This researcher became interested in motivation when working with 9th grade students, specifically in English I. Many students were repeating English I, some for the second time, and they still were not motivated to move on. The monotony of doing the same work year after year did not spark any kind of fire to complete the work and never have to see it again. This demonstrated that motivation is a deeper lying issue and the researcher wondered what could be done to increase motivation, an intrinsic action, in those students within that class setting.

Statement of Problem

The purpose of this study is to see if adding a motivational intervention will increase student's work production and academic achievement, specifically in the area of English I. There are studies directed at increasing student motivation and goal-setting that have been found

to increase motivation. Specifically, this research is focused on if whether a goal setting motivational strategy can be used to increase production/success in one specific subject area.

Hypothesis

The hypothesis being tested through the study, in null form, is that a motivational strategy directly implemented with at-risk students (learning disabled or low socio-economic status) will fail to increase academic output in a specific, targeted subject area. For the purposes of this study, the subject area being tested is 9th grade English which was chosen because the failure rate for 9th grade, specifically co-taught classes with a high percentage of at-risk students, is increasing each year. Additionally, the transition to 9th grade often impacts students' motivation as high school requires much more self-regulation than middle school and that is a skill most 9th graders are not highly effective with implementing.

Operational Definitions

The variables within the study include an independent variable of the goal setting motivational program used with students and the dependent variable of an increase in achievement. ***Achievement*** is operationally defined through an increase in work production and completion and/or an increase in grade/score for the length of the time of the study. ***Work production*** is monitored through observation and record reviews while grades would be monitored through the online grading portal. In addition, ***teacher observation and input*** will be used to monitor work production and overall motivation for students in both the control and experimental groups. The operational definition of the ***motivational intervention*** will present as students setting goals within the classroom. Upon observation, students will be working on writing a goal with the intervention mentor, monitoring progress through the use of grades and

work logs, having a discussion about qualities that affect the achievement of goals, and finally self-reflecting through completing a survey.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Motivation has been a long-time factor in work production for students of all ages. Those motivational factors have been shown to have a direct link to a student's status of "at-risk" as determined by his/her identification as Learning Disabled (LD) or Low Socio-Economic Status (SES). Students identified in one, or both, categories have been shown to have lower academic output. Within 9th grade English courses, students are held to rigorous state standards. According to the Maryland State College and Career-Ready Standards, 9th graders are required to use key ideas and details, identify an author's craft and structure, integrate their ideas and knowledge, and exhibit a range of reading level and complexity (MSDE 2016). The purpose of this chapter is to review the literature related to motivation and to determine if there is a correlation between increased motivation and educational output and to analyze strategies to determine which strategies could potentially be used within an English 9 classroom with learning disabled or low socio-economic status students. The following chapter has been organized to include the classroom factors that affect student motivation, student factors that affect motivation and strategies that have been found effective in increasing student motivation within the classroom setting.

Classroom Factors

Through experimental research studies, classroom factors that affect student motivation are teacher-student relationships, positive feedback, responsive teacher practices, encouragement and challenge, and authentic learning activities. Through their literature review, Kiefer,

Ellerbrock and Alley (2014) determined that effective teachers consider a multitude of parts of adolescent lives and then put practices into place that help to build respectful relationships that challenge students while still remaining encouraging. In addition, teachers include authentic learning activities. Those learning activities should create a set of high standards to which teachers will hold students accountable. This creates an environment of challenge, and included feedback allows for encouragement. All these elements are part of responsive teaching, which is linked to increased student motivation.

Responsive teaching encompasses understanding student needs which in an at-risk population, are diverse and more intensive, and then putting strategies into place to address diverse student needs. When dealing with at-risk students, often psychological variables such as attitude and self-efficacy play a large role in student motivation. The study conducted by Garcia-Sanchez and Caso-Fuertes (2005) found that those elements of student motivation, when linked to writing, can be affected through classroom interventions. This aligns with previous research mentioned in their background information. The study went on to research specific interventions in order to determine validity with regard to increasing student writing.

The three interventions were targeted toward writing planning, writing strategies and motivational strategies. All three interventions had positive impacts on writing output and had an impact on self-efficacy for writing (Garcia-Sanchez & Caso-Fuertes, 2005). Each group was provided with one of the research strategies and the improvement was seen among students that received a direct explicit intervention for writing or motivation. The implication is that when providing an intervention, the goals and directives for students should be outlined and explicitly taught. This relates to the Kiefer et al., (2014) research that determined that setting a high standard and creating authentic learning experiences are essential to student improvement.

Authentic learning experiences can be part of a direct intervention in order to address student motivation within the classroom setting.

Student Factors & Motivation and Achievement

Students identified with a learning disability or as being low socio-economic status have factors in their everyday lives that affect their motivation and work habits. Some of these are thought to be attributed to their disabilities while others relate to acute and chronic stress. When reviewing research on motivational issues in children with learning disabilities, Sideridis and Scanlon (2006) found that five previous research studies were able to determine that motivation can be a “strong predictor of LD [learning disabled] group membership” (p131). This is important because evidence shows that motivation impacts academic achievement, but more research is still needed to see how motivation correlates to learning disabilities. Is it a factor of being learning disabled or is it a resulting factor that happens overtime from academic frustrations?

Some research has been completed with regard to motivation in students with Autism, specifically. Through her research, Koegel, Singh, Koegel and Robert (2010) found that autistic students display a hesitancy factor prior to engaging in tasks they deem to be difficult. This correlates with other evidence that students with learning disabilities often display motivational deficits that impact academic achievement. While LD students and students with autism fall into different categories of learning styles, the autism research also shows that motivation is a factor of the student’s disability which indicates that more research is needed to determine if motivation is a factor of a learning disability.

At-risk, SES, students are exposed to a higher level of stress than other students. High levels of stress that are experienced over a long period of time, also known as chronic stress, have been found to weaken problem solving and creativity (Creswell, Dutcher, Klein, Harris and Levine, 2013). Also, a student's own perceived stress is directly correlated to a negative self-efficacy, or ability to complete tasks (Henning, Krageloh, Booth, Hill, Chen, and Webster, 2018).

Another longitudinal study found that over the course of three years, students' perceived stress and ability to achieve had a direct impact on their ability to be successful academically (Vaez and Laflamme, 2008). While these studies make great cases for the impact of stress on academic achievement, the research is lacking when it comes to motivation of at-risk high school students. Those studies were conducted for college students and were not all encompassing. The stress factors for 9th grade students differ from college students as well as their maturity and ability to process stress. Those factors require further research in order to get a whole picture of how stress impacts a student's motivation and achievement in the 9th grade setting and even the years preceding high school.

Strategies to Increase Motivation

Through various experimental research and observational studies, a number of strategies have proven to increase motivation among at-risk students within the classroom. The most comprehensive research has been conducted on this end of motivation's impact as opposed to factors leading to motivation. Some of the proven methods to increasing student motivation included antecedent interventions, student choice, self-regulation strategies, self-efficacy strategies, self-affirmation interventions, and goal-setting with feedback. The research was conducted on a broad group of test subjects, including students with autism, students with

Learning Disabilities, students with ADHD and college students. While the students varied in age and backgrounds, the strategies that are outlined have proven to have a positive impact on motivation when it comes to engaging in learning activities. Students with autism show a large increase in academic achievement when provided with opportunities for student choice, when given tasks that have an element of the child's interest, or when the outcome of the task inherently includes a natural reinforcer (Koegel et al., 2010). These three practices are labeled as antecedent interventions and are targeted to encourage children to participate in tasks without hesitation as opposed to an intervention to change behaviors once a student refuses to complete a task. Addressing motivational issues prior to their occurrence in a preemptive fashion is consistent across the successful strategies.

For example, another intervention that works with children who are learning disabled and are faced with a writing task is to provide explicit instruction in the writing techniques prior to giving them the writing assignment. This precursor to the actual assignment helps to increase a student's self-efficacy and allows the student to feel in control of the task prior to starting (Garcia-Sanchez and Caso-Fuertes, 2006). Garcia and de Caso (2004) found in an earlier study that a motivational intervention should be combined with an explicit skill intervention, which aligns with the aforementioned research from Garcia-Sanchez and Fidalgo-Redondo (2006).

Zentall and Lee's (2012) research also found that students with a diagnosed reading disability performed better when they are given a positive reinforcer while being administered a first-tier empirically-based intervention, like one that consists of specific reading strategies. Combining a cognitive process with a motivational strategy gives students the opportunity to learn a new skill through practice and gives them practice in feeling encouraged to complete tasks (Moreira, Bilimora, Pedrosa, Pires, Cepa, Mestre and Serra, 2015). Together these

strategies have the most impact on academic achievement for students with documented disabilities, as seen through the research.

The at-risk student population that includes students of a low-socio economic status is far less represented in the studies related to motivation. Cuevas, Russell and Irving (2012), conducted research specifically designed to assess how a technology intervention would impact students from diverse and lower socio-economic backgrounds. The study found that students presented with technology-based assignments outperformed the students that were given the same curriculum in a textbook-based format (Cuevas et al., 2012). The study also indicated that more research is needed on the effect of incorporating technology to motivate at-risk students.

A college study that sought to find the effects of self-affirmation on students with acute and chronic stress is another promising study that can lend itself to being applicable to at-risk high school students. Due to a correlation between a low-socio economic status and a higher risk of stress, the self-affirmation strategies that worked for the stressed college students would be appropriate to utilize within a 9th grade classroom for at-risk students. The intervention consisted of students personally reflecting on the number one item that was important to them prior to completing a problem-solving task. The group that wrote about their important life value performed better than the students that did not complete the same antecedent activity. They also showed a lower blood pressure and overall well-being (Creswell, Dutcher, Klein, Harris, & Levine, 2013). This research, while not conducted at a high school level, is important because it shows that people can change their attitude toward a difficult task by a personal thought process. Students can change their mindset without being told to do so using a self-affirmation task. This aligns with the literature review completed by Snape and Atkinson (2015) that evaluated the use of motivational interviewing on students labeled as disaffected. These researchers found that

students “who experience disaffection are more likely to truant and engage in disruptive behavior, and less likely to achieve academically than those engaged in education” (p. 69).

Disaffection is a trait common among students labeled as at-risk, as stress and other social issues take the forefront in daily life, negating any desire to perform well in school. The original study conducted by Snape and Atkinson (2015) found that motivational interviewing was not as successful in the eyes of students as it was in the eyes of the administrator. However, through the review of related literature, they found that motivational interviewing, when provided on a regular and consistent basis, improves student functioning within the classroom setting.

The motivational interviews begin at a place assuming there is not an interest in change, so the sessions build slowly to encourage gradual change among the student (Snape and Atkinson, 2015). This intervention leads to goal setting and feedback that is another proven strategy to increase student motivation when presented with a language arts task (Cuevas et al., 2012). Snape and Atkinson’s (2015) research shows potential for use in the 9th grade classroom for students that are disaffected and do not desire to break away from their comfort zone of rule breaking and lack of interest. Motivational interviewing combined with self-affirmation would provide a combination of strategies that will improve student engagement without being overtly direct or off-putting to students.

Conclusion

The research related to motivation among students with learning disabilities and/or at-risk (low SES) is varied and diverse. The strategies that have been proven to be effective with students with learning disabilities have not been tested on at-risk students, and vice versa. There is still more research needed to determine if motivation is a factor of environment and continued failure due to a learning disability, or if motivation is an area of deficit that can accompany a

learning disability and needs to be addressed the way other learning disability deficits are supplemented. Either way, there are a multitude of strategies that have been proven to help students find success within the classroom and those strategies are the starting point to developing successful interventions for either learning disabled or at-risk students. The change in motivation must begin with classroom factors like teacher-student relationships, positive feedback, responsive teacher practices, encouragement and challenge, and authentic learning activities. When a classroom provides this solid foundation, students will be more motivated to engage in activities and will find success through interventions designed to increase motivation.

CHAPTER III

METHODS

Design

The goal of this experimental study is to determine if a goal setting intervention would have a positive impact on motivation with at-risk students in English 9 classrooms. The experiment involves implementing a goal setting intervention with students in a 9th grade classroom that have been identified as at-risk. This includes students with a Learning Disability (LD) and students that are on Free and Reduced Lunch (FRL). The intervention is implemented with both at-risk and non-at-risk students within the designated classroom.

In order to determine a baseline for the data, a baseline measure of motivation will be determined through teacher survey on student participation as well as a measure of the current work turned in (including completeness of work turned in). Once motivation for each student is determined then the students are broken into two groups, a control group and an experimental group. The groups are made up of an equal number of both at-risk and non-at-risk students. The control group will not receive the intervention, where as the experimental group will receive the intervention. The experiment is monitored through anecdotal notes provided by the person implementing the intervention. At the end of the experiment, new data is retrieved for the current status of grades and work completed/turned in. In addition, students are given a survey to determine level of motivation and the teacher survey would be given again in order to determine motivation. This is used to determine if there is any correlation between motivation and receiving a goal-setting motivational intervention.

The variables of the design include the independent variable of the intervention. The dependent variable in the experiment is student motivation which is identified through teacher

observation of participation in activities and the monitoring of grades and work produced/turned in. In order to choose the participants of student groups a nonrandom sampling technique is used with a purposive sampling method. This ensures that the groups include both at-risk and non-at-risk students so the experiment can be tested on an equal ratio of students.

Participants

When using the purposive sampling method for the experiment, the researcher begins with 9th grade English classes. Then the roster is used to determine which students are identified as Learning Disabled. The list is cross referenced with school data on Free and Reduced Lunch to choose students that are considered low socio-economic status since that is the second at-risk group. Data shows that both Learning Disabled students and students from a Low socioeconomic background prove to be higher risk for low motivation and academic success. Once the students are categorized, two groups are formed with equal representation for both at-risk (LD and/or SES) and non-at-risk students. The age range of students is the typical 9th grade age range of 14-16 when including students that are repeating 9th grade English.

Instrument

The instrument to be used in the study is a goal-setting intervention where students set a goal at the beginning and then routinely monitor progress toward the goal with adult support. The students reflect on the goal through short written reflections and/or through an oral discussion with their mentor/facilitator. The intervention also includes teacher surveys for students and a record review of student grades/work completion. The reliability of the test can be questioned because all of the data relies on subjective viewpoints on motivation. Motivation is defined as the completion of work and participation in class for the purposes of this study but

motivation encompasses many different attributes and can fluctuate depending on many factors. For example, if a student goes through trauma, their motivation may dramatically change over a short period of time. In this regard, the experimental results will not be able to be read as accurate because there were outside extenuating circumstances. While the reliability can change dependent on human elements, the test is valid in that the data collection looks at motivation based on performance data. This will not change even if a student's circumstances outside of the experiment change.

Procedure

The first step in the experiment is to identify the group of students that struggle with motivation. In this instance, the group is 9th grade English students that had a large fail rate for the previous school year. Once the class is chosen, students are grouped according to their status as non-at-risk, Learning Disabled or low Socioeconomic Status. Then the students are split into two groups allowing for an equal, or almost equal, ratio of all three groups of students within each experimental group. One group is then labeled as the control and the other as the experimental group.

Once groups are formed, the second step of data collection can be initiated. Data is collected for each student to indicate the student's grade in English from the previous school year, the student's current grade in English and the number of assignments currently turned in. Teachers are also given the short survey (see Appendix A) to fill out about student motivation for each student within both the control and experimental groups. The survey asks teachers to rate students on everyday participation, work completion, and engagement. There is also a space for any individualized comments that may help the evaluator better understand a student (ie: a student recently became homeless).

After data is collected, the intervention is then implemented with the students. Students are called individually to meet with the implementer in order to answer the first student survey and to discuss his/her own thoughts about why he or she is motivated/unmotivated. This information is to be captured on the Student Motivation Survey (See Appendix B). Then students are asked to create a goal for both English class and for the overall 9th grade year (See Smart Goal Worksheet, Appendix C). The results are logged for both the implementer and the student. Students are given a hard copy of their goals to put in their English I folders. Weekly, the implementer will look at student grade data and then also do a check with the student to look at goal progress. The weekly check includes looking at the student's goal and reviewing strategies to achieve the goal and then reviewing the current status of the student's grade in English I. This continues for the length of the experiment.

At the end of the experiment, the final data is reviewed with the student to have him/her self-evaluate whether or not they accomplished their goal and if they felt a difference from reviewing the goal periodically. In addition, teacher final input is gathered by having the teacher fill out the survey for each student again answering the same set of questions that were given at the start of the experiment. All of this data is used to determine if there is any correlation between the use of the goal setting intervention and academic motivation.

For each dependent variable, a paired *t*-test will be computed for the mean sample difference between pre- and post-test. The sample difference is tested for statistical significance at the customary .05 level, and Cohen's Effect Size is calculated to determine the amount of pre-post change regardless of the sample size. Where the dependent variable is categorical rather than scores, a statistical procedure for paired categories will be used (e.g., McNemar's Test).

CHAPTER IV

RESULTS

The purpose of the study was to determine if a targeted motivational intervention focused on goal setting would improve the academic output of students in a given population. The study was formulated based on the null hypothesis: A motivational strategy directly implemented with at-risk students (learning disabled or low socio-economic status) will fail to increase academic output in a specific, targeted subject area. The study took place in a Maryland high school in a diverse and economically disadvantaged area. The population included 9th grade students in an English I classroom targeted as a reading intervention course. The control and experimental groups were chosen by choosing two classes with equivalent proportions of students with a Learning Disability currently enrolled in an intervention English course.

For this study, continuous data (percentage of completed assignments) were analyzed for mean differences using Student's t-test for 2 groups (control v. experimental) or using change scores (pre/post paired t-test) for the control and experimental groups separately. The null hypothesis states that there were no population mean differences in an outcome variable between the control and experimental groups. The tested data came from the samples used in the study. The hypothesis refers to a theoretical population from which the samples could have been taken randomly (e.g., random samples of classrooms). In practical terms, the overall question being asked: is it likely that what we found in the study classroom would occur in other similar classrooms with similar students?

Categorical data (letter grades and motivational scale points) were analyzed with Chi-square 2-way contingency tables. The null hypothesis was identical to the hypothesis for completed

assignments, only adapted for categorical data. The null states that there is no population difference between the distributions of motivational scores for the control and experimental groups.

The main results of the data collected are that the null hypothesis cannot be rejected. The overall increase in change in work completion was not dissimilar enough between the control and experimental groups to state conclusively that the intervention likely caused a shift in work completion level.

Data was collected on students' perceived self-motivation level for doing well in both English and school overall, students' work completion at the start and end of the study, students' final grades in English for 8th grade (used as a pretest) and students' grades at the end of the study. This information was all analyzed in order to look at whether the intervention impacted overall work completion, in turn affecting grades, and whether motivation played a factor in the end results.

The students' perceived motivation showed no correlation to the end results of the study. The null hypothesis, population percentages of motivation categories to do well (high and low motivation) do not differ between control and experimental groups on the pre and post surveys, could not be rejected. This is because the motivation to do well between control and experimental groups for the pre or post administrations of the surveys did not differ in their population percentages. As evidenced by the following tables, both groups showed an increase in motivation and the experimental group did not show a larger gain in motivation based on post-survey results as calculated using the Chi-square statistic. These data are presented in the following tables, Table 1-12. All the students in C and E groups maintained or improved motivation scores to do well scale, thereby showing no correlation between motivation and

implementation of a motivational intervention. Because there were small numbers of students per grade or motivational scale point, letter grades were combined from A, B, C, D, E to two categories A, B, or C; and D or E. Likewise, the motivational scale was collapsed from 1, 2, 3, 4, 5 (low to high) to two categories 1, 2, 3 (low) or 4, 5 (high).

Table 1

Pre Letter Grades Control v. Experimental

Rows: group Columns: gradepre

	ABC	DE	All
C	19	5	24
E	16	6	22
All	35	11	46

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.26	1	0.6090
Likelihood Ratio	0.26	1	0.6091

Table 2

Post Letter Grades Control v. Experimental

Rows: group Columns: postgrade

	ABC	DE	All
C	15	9	24
E	16	6	22
All	31	15	46

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.55	1	0.4598
Likelihood Ratio	0.55	1	0.4586

Table 3

Rows: group Columns: wellpre

	High	Low	Missing	All
C	8	15	1	23
E	6	16	0	22
All	14	31		45

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.30	1	0.5865
Likelihood Ratio	0.30	1	0.5859

Table 4

Post Motivation to Do Well, Control v. Experimental

Rows: group Columns: wellpost

	High	Low	Missing	All
C	12	11	1	23
E	14	8	0	22
All	26	19		45

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.61	1	0.4364
Likelihood Ratio	0.61	1	0.4358

Table 5

Pre Motivation for English, Control v. Experimental

Rows: group Columns: engpre

	High	Low	Missing	All
C	8	15	1	23
E	7	15	0	22
All	15	30		45

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.04	1	0.8330
Likelihood Ratio	0.04	1	0.8329

Table 6

Post Motivation for English, Control v. Experimental

Rows: group Columns: engpost

	High	Low	Missing	All
C	10	13	1	23
E	10	12	0	22
All	20	25		45

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.02	1	0.8939
Likelihood Ratio	0.02	1	0.8939

Table 7.

Pre Assignments Completed Control v. Experimental

Descriptive Statistics: pre_assign

group	N	Mean	StDev	SE Mean
C	24	75.100	27.413	5.596
E	22	73.591	15.735	3.355

Test

Null hypothesis $H_0: \mu_1 - \mu_2 = 0$
Alternative hypothesis $H_1: \mu_1 - \mu_2 \neq 0$

T-Value	DF	P-Value
0.23	37	0.8184

Table 8.

Post Assignments Completed Control v. Experimental

Descriptive Statistics: post_assign

group	N	Mean	StDev	SE Mean
C	24	95.000	8.501	1.735
E	22	97.4545	3.4466	0.7348

Test

Null hypothesis $H_0: \mu_1 - \mu_2 = 0$
Alternative hypothesis $H_1: \mu_1 - \mu_2 \neq 0$

T-Value	DF	P-Value
-1.30	30	0.2026

Table 9

Pre-to-Post Letter Grades Control and Experimental Separately

Rows: gradepre_c Columns: postgrade_c

	ABC	DE	All
ABC	12	7	19
DE	3	2	5
All	15	9	24

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.02	1	0.8967
Likelihood Ratio	0.02	1	0.8971

2 cell(s) with expected counts less than 5.

Rows: gradepre_e Columns: postgrade_e

	ABC	DE	All
ABC	12	4	16
DE	4	2	6
All	16	6	22

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	0.15	1	0.6959
Likelihood Ratio	0.15	1	0.6995

3 cell(s) with expected counts less than 5.

Table 10

Pre-to Post Motivation to Do Well Control and Experimental Separately

Rows: wellpre_e Columns: wellpost_e

	High	Low	All
High	6	0	6
Low	8	8	16
All	14	8	22

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	4.71	1	0.0299
Likelihood Ratio	6.66	1	0.0099

2 cell(s) with expected counts less than 5.

Table 11

Pre-to Post Motivation for English Control and Experimental Separately

Rows: engpre_c Columns: engpost_c

	High	Low	Missing	All
High	8	0	0	8
Low	2	13	0	15
Missing	0	0	1	
All	10	13		23

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	15.95	1	<0.0001
Likelihood Ratio	19.71	1	<0.0001

2 cell(s) with expected counts less than 5.

Rows: engpre_e Columns: engpost_e

	High	Low	All
High	7	0	7
Low	3	12	15
All	10	12	22

Cell Contents: Count

Chi-Square Test

	Chi-Square	DF	P-Value
Pearson	12.32	1	0.0004
Likelihood Ratio	15.30	1	<0.0001

2 cell(s) with expected counts less than 5.

Table 12.

Pre-to-Post Assignment Completion, Control and Experimental Separately

Descriptive Statistics

Sample	N	Mean	StDev	SE Mean
pre_assign_C	24	75.100	27.413	5.596
post_assign_C	24	95.000	8.501	1.735

Test

Null hypothesis $H_0: \mu_d = 0$
Alternative hypothesis $H_1: \mu_d \neq 0$

T-Value	P-Value
-3.88	0.0007

Descriptive Statistics

Sample	N	Mean	StDev	SE Mean
pre_assign_E	22	73.591	15.735	3.355
post_assign_E	22	97.455	3.447	0.735

Test

Null hypothesis $H_0: \mu_d = 0$
Alternative hypothesis $H_1: \mu_d \neq 0$

T-Value	P-Value
-7.34	<0.0001

In addition, student grades were not an indication of increased motivation when compared with grades at the end of the previous school year. The null hypothesis, population percentages do not differ between E and C groups for the outcomes of pre or post letter grades, could also not be rejected. The overall results showed 12 out of 24 students in the control group maintaining or improving letter grades and 12 out of 22 students in the experimental group maintaining or improving letter grades. The letter grades for students did not show any significant trend at the 5% level of significance toward increasing at the end of the study.

The final, most important, element of the study was the categorical data for the increase in work production, which is the targeted outcome of increased motivation. The null hypothesis, population means do not differ between control and experimental groups for pre or post assignment completions, could also not be rejected because the population means do not differ between control and experimental groups for pre or posttest assignment completions. On average, the control group increased completion rates for assignments by 19.9 percentage points. This mean increase was statistically significant at the 5% level. The experimental group increased the completion rates for assignments by 23.9 percentage points. This mean was statistically significant at the 5% level. Both the Control and Experimental groups had statistically significant increases in pre and posttest completion rates for assignments. This hypothesis rejected because each group independently changed significantly at the 5% level of statistical significance. There was not enough significant change in the experimental group when compared to the control group in order to verify an increase caused by the motivational intervention.

There were no statistically significant differences at the customary 5% level of significance between the controls and the treatment groups on any of the outcomes that were compared in order to show an advantage of being part of the motivational study. There were also no significant differences in pre-to-post changes between the control and treatment groups for the letter grades, assignment completions, and motivational levels. In addition, the controls and experimental groups had similar percentages of LD students. Looking at the Box Plots below in Figures 1-3, the analysis can be made that the null hypothesis could not be rejected at the customary 5% level of significance. The quartile ranges for each Control vs. Experimental comparison are quite similar. For the pretests, there is a non-significant difference, indicating a fair study. However, both groups recorded similar changes from pre to post; therefore they still have similar scores on the posttests, confirming the overarching null hypothesis could not be rejected.

Table 13. Summary of the Results of Testing the Null Hypotheses of the Study

Table	Outcome	Null Hypothesis	Results	Decision
1	Grades	%pre C=%pre E	Chi-sq=.26, p=.61	Do not reject Null
2	Grades	%post C= %post E	Chi-sq=.55, p=.46	Do not reject Null
3	Do well	%pre C=%pre E	Chi-sq=.30, p=.59	Do not reject Null
4	Do well	%post C=%post E	Chi-sq=.61, p=.43	Do not reject Null
5	English	% pre C=%pre C	Chi-sq=.04, p=.83	Do not reject Null
6	English	%post C=%post E	Chi-sq=.02, p=.89	Do not reject Null
7	Assignments	Mean pre C=mean pre E	t=.23, p=.82	Do not reject Null
8	Assignments	Mean post C=mean post E	t=1.30, p=.20	Do not reject Null
9	Grades	%pre C=%post C	Chi-sq=.02, p=.90	Do not reject Null
9	Grades	%pre E=%post E	Chi-sq=.15, p=.70	Do not reject Null
10	Do well	%pre C=%post C	Chi-sq=11.24, p=.001	Reject Null
10	Do well	%pre E=%post E	Chi-sq=4.71, p=.03	Reject Null
11	English	%pre C=%post C	Chi-sq=15.95, p=.001	Reject Null
11	English	%post E=%post E	Chi-sq=12.32, p=.001	Reject Null
12	Assignments	Mean pre C=mean post C	t=3.88, p=.001	Reject Null
12	Assignments	Mean pre E=mea post E	t=7.34, p=.001	Reject Null

Each null was tested at the customary p=.05 level of significance

CHAPTER V

DISCUSSION

The hypothesis being tested through the study, in null form, is that a motivational strategy directly implemented with at-risk students (learning disabled or low socio-economic status) will fail to increase academic output in a specific, targeted subject area. The hypothesis could not be rejected based on the data collected through the intervention implemented.

Implications of Results

The study found that a higher percentage of students within the experimental group increased academic output in the form of work completion in contrast with the number of students that increased academic output within the control group. The results indicated a higher change in the experimental group, however the percentage of change between the two groups was not significant enough to prove that the implementation of the motivational strategy of goal setting was the factor that increased student work production. This small study implies that a motivational strategy could be implemented to increase work production but the strategy alone was not the only factor increasing output among the students since the control group also increased academic output overall.

Anecdotal information provided by the teacher post research indicates that the experimental group did benefit from the targeted goal intervention and were more motivated by setting goals. This teacher stated that students often checked in about their grades and asked about make-up work and absent work more frequently than the control group class. This indicates that the students' self-rating of motivation may not directly correlate with their actual level of motivation, skewing the data related to motivational scores.

Theoretical Consequences

The theory that drove this research was that a targeted goal setting strategy would increase student motivation to do well and would therefore increase academic output and work completion. The research indicates that the theory was not correct and the theoretical consequence is that the implementation of a targeted strategy would not always increase academic output for students more than the customary methods. This consequence produces an issue of how to reach students that struggle with motivation if a targeted goal strategy does not necessarily work better than a customary method.

Threats to Validity

There were many factors that affected the validity of the results of the study. Student attendance was a major factor in students having access to the motivational strategy regularly. In the study group, 8 students missed at least one weekly check in throughout the course of the study. This hindered their personal check on grades and reflection on progress. Not being able to implement the goal setting with fidelity impacted the ability of the researcher to determine if students were being impacted motivationally by the study.

The teacher survey was difficult to have completed by the students' previous teachers as many students had different teachers and came from different middle school buildings. This resulted in varied level of understanding of student background in English. Also, some of the students were in an intervention English course in 8th grade and some were not, so the standards they were graded on were varied, resulting in unequal baseline grade data. Middle school grades are also difficult to compare to high school grades as the standards are much higher and stringent when students enter high school.

In addition, there was a large amount of bias on the part of the general education teacher in determining what counted as “completed” work, impacting the overall data results. The teacher is a new teacher and the experimental group is a challenging group of students with many difficult classroom behaviors. Upon observation by the researcher, it was noted that the teacher’s attitude varied from the control to the experimental group and she was more lenient in her grading and counting items as completed within the control group. This may have impacted the final data collected from her on work completion for the students within both groups.

Finally, the time window for the implementation of the intervention may have inflated the base scores of students. The teacher noted that most students perform at a higher level at the beginning of the school year and as the work becomes increasingly more difficult students begin to drop off in academic output. This study had to begin at the start of the school year not allowing time for students to demonstrate a true level of motivation and work completion.

Connections to Existing Studies and Literature

The theoretical basis for the research study relates to the work of Koegel, Singh, and Koegel (2010) who found that self- efficacy and goal setting interventions used with students with disabilities increased motivation and engagement in learning activities. This research indicated that goal setting, along with specific feedback, had a lasting impact on student engagement. The research was conducted with a wide range of ages and student populations. The base of information discovered by Koegel et. al was used when developing a null hypothesis for this research study with relationship to academic output and motivation of a targeted group of students within a specific setting. If students within an educational setting increased activity in academic activities after being presented with an intervention targeted at increasing overall

motivation, then a goal setting strategy implemented within a similar setting with a specific grade level and subject area should have a similar result in increasing work production.

A goal setting intervention was chosen for this study as the specific motivational strategy based on research conducted by Garcia-Sanchez and Caso-Fuertes (2005). They found that at-risk students benefit from psychological variables being integrated into teaching along with academic interventions. Psychological variables can address attitude or self-management. Goal setting was chosen to encourage and foster self-management with relationship to work completion and academic output.

Finally, research on at-risk student population in low socio economic areas is far less represented in studies related to motivation (Cuevas, Russell and Irving 2012). Considering the current research study is focused in a low socio economic area, the use of a motivational intervention is applicable and needed research.

Implications for Future Research

While the null hypothesis guiding this research study could not be rejected, the research has implications for further research in the area of motivation. The anecdotal information provided by the teacher showed the students in the experimental group were more motivated than when they began the goal setting intervention, even if it was not reflected in self-motivation. In addition, the teacher noted that students within the control group demonstrated a consistent level of motivation, with less increase than what was reflected within their self-motivation scores. Further research could study a students' perception of motivation and whether their own self-rating on motivation aligns with actual motivation displayed within the classroom. A disconnect exists between the ratings students gave themselves and the actual results presented by the study.

Furthermore, the timeline of the research hindered the researcher from getting a true baseline of student motivation. Student work production traditionally is inflated at the beginning of the school year. It would be beneficial to begin the study at the conclusion of the first marking period of school to get an accurate picture of student work output and other factors that affect academic grades, like attendance, so all factors could be considered when choosing an intervention. The journal notes from the study indicate that students enjoyed completing the brief weekly goal check-ins and they had valuable input to give to peers in order to address obstacles. The increase in students asking for grade information and using it to track their goals showed that there was a gain from the implementation of the goal setting intervention, however it was not captured within the statistical data. On the other hand, the rate of assignment completions increased by a statistically significant amount from pre-to-post for the control and experimental groups. There was not, however, a significant differential gain in favor of the treatment students. The relatively small sample size may have also hindered detecting a difference in the populations from which the samples were theoretically randomly drawn.

Conclusions/Summary

The results of this study imply that, descriptively, students that participated in the goal setting intervention made an intrinsic motivational gain. The statistical data gathered over the course of the study, however, did not support the rejection of the null hypothesis. Moreover, there was much discrepancy between the anecdotal information provided by the teacher and the numerical data gathered from student surveys and grades. Student self-motivation scores did not match the teachers motivational scores of the students that she provided within her post survey anecdotal notes.

The validity of the study comes into question based on the time frame of research, experience level of the English teacher and the attendance of students that took part in the study. Even with the validity issues, there is a promising implication that students identified as at-risk in a low socio economic area will improve self-efficacy/motivation when provided with a goal setting intervention that is targeted and provides them with an opportunity to gain specific adult feedback and support. As action research, the study provided useful information for future application of the intrinsic motivational method for at-risk Grade 9 students. The study also identified certain areas in sampling and implementation of the treatment that may mitigate the problems that prevented finding statistical significance.

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APPENDIX A

Pre-Survey-

Teacher Survey on Student Motivation

Based on what you have seen so far in class, rate the students on the following scale. (Please make a note of any important information that could affect motivation, ie: student recently experienced a family trauma)

- 1- Not motivated
- 2- Somewhat motivated
- 3- Motivated
- 4- Very motivated

*For the purposes of this survey we are defining motivation as “putting forth enough effort to succeed”

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Post-Survey-

Teacher Survey on Student Motivation

Based on what you have seen so far in class, rate the students on the following scale. (Please make a note of any important information that could affect motivation, ie: student recently experienced a family trauma)

- 1- Not motivated
- 2- Somewhat motivated
- 3- Motivated
- 4- Very motivated

*For the purposes of this survey we are defining motivation as “putting forth enough effort to succeed”

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

Student : _____

Everyday Participation 1 2 3 4

Work Completion 1 2 3 4

Engagement in Learning 1 2 3 4

APPENDIX B

Student Motivation Survey: To be given at the start and conclusion of the intervention period.

Student Name: _____ CG/EX

Day 1: How would you define motivation?

Rate yourself on the following scale for how motivated you are for each category:

- 1-Not motivated at all
- 2-Somewhat motivated
- 3-Motivated
- 4-Very Motivated

- 1. To do well in school 1 2 3 4
- 2. To do well in English class 1 2 3 4
- 3. To have a lot of friends 1 2 3 4
- 4. To graduate high school 1 2 3 4
- 5. To make others proud of you 1 2 3 4

Based on your answers above, what or who motivates you? _____

If you said you were unmotivated, why do you think you are unmotivated? _____

Final: How would you define motivation?

Rate yourself on the following scale for how motivated you are for each category:

- 1-Not motivated at all
- 2-Somewhat motivated
- 3-Motivated
- 4-Very Motivated

- 1. To do well in school 1 2 3 4
- 2. To do well in English class 1 2 3 4
- 3. To have a lot of friends 1 2 3 4
- 4. To graduate high school 1 2 3 4
- 5. To make others proud of you 1 2 3 4

Based on your answers above, what or who motivates you? _____

If you said you were unmotivated, why do you think you are unmotivated? _____

Do you think that setting a goal and tracking it helped you to feel more motivated? Why or why not?

APPENDIX C

SMART Goal Worksheet intended to be given to all participants in the treatment group and utilized as part of the weekly check in for the goal setting intervention. (Modified from Office Arrow, 2008).

SMART Goal Worksheet

Today's Date: _____ Target Dates: G1- _____ G2- _____

English Goal:

Overall 9th Grade Goal:

Verify that your goals are SMART

Specific: *What exactly will you accomplish?*

Measurable: *How will you know when you have reached your goals?*

Achievable: *What resources will you need to achieve your goals? Who can you get to assist you?*

Relevant: *Why are these goals important to your life? (think big picture)*

Timely: *When will you achieve these goals?*

Brainstorm some obstacles to achieving your goal and then solutions to fix them:

Potential Obstacles

Potential Solutions

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Check In 1- How are you doing with achieving your goals? _____

What struggles have you encountered so far? _____

How did you overcome them? _____

What steps will you take moving forward to reach your goal? _____

Check In 2- How are you doing with achieving your goals? _____

What struggles have you encountered so far? _____

How did you overcome them? _____

What steps will you take moving forward to reach your goal? _____

Check In 3- How are you doing with achieving your goals? _____

What struggles have you encountered so far? _____

How did you overcome them? _____

What steps will you take moving forward to reach your goal? _____

Check In 4- How are you doing with achieving your goals? _____

What struggles have you encountered so far? _____

How did you overcome them? _____

What steps will you take moving forward to reach your goal? _____

Check In 5- How are you doing with achieving your goals? _____

What struggles have you encountered so far? _____

How did you overcome them? _____

What steps will you take moving forward to reach your goal? _____

Final Check In- How did you do?

Did you achieve either one of your goals? _____

How does that make you feel? _____

What did you do well? _____

What could you improve on for next time? _____

Did you feel that having a goal to look at helped increase your motivation? _____