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Julie Conrad
University of Maine at Farmington

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Teaching Time Management in the Proficiency Based Classroom

Julie L Conrad

Central Aroostook Junior/Senior High School

University of Maine at Farmington

Author Note

Julie Conrad is a graduate student at the University of Maine at Farmington. She has worked at MSAD 42 in Mars Hill, Maine for seven years as a junior high teacher. She graduated with a Bachelor of Arts from Saint Mary's University in Halifax, Nova Scotia and a Bachelor of Science degree in secondary education from the University of Maine at Presque Isle. This research was conducted as part of the Educational Leadership Master's degree at the University of Maine at Farmington.

Abstract

Students in Maine are currently making the switch to proficiency based education. In transitioning to a grading system based on only academic standards many of the soft skills, such as time management, are often not taught in the classroom as the focus is on only the academic standards. In this action research study, three different time management strategies were introduced to middle school math students in a rural junior high classroom. Each strategy was used for one academic learning standard. Student achievement and perceptions, as well as teacher observations, were analyzed to determine the effectiveness of the strategies. The results showed a) an increase in student proficiency through the use of each of the strategies; b) a positive student response to the strategies used; and c) a reported increase in time management skills.

Keywords: proficiency based education, time management, academic standards, intervention

Literature Review

Introduction

Several states, such as New Hampshire, Michigan, Maine, and Ohio, as well as many districts and schools throughout the United States are taking steps away from traditional education for K-12 students. The movement is centered around focusing less on seat time and more on students mastering skills at their own pace (Competency-based learning or personalized earning, n.d.). Two of the new approaches to primary and secondary education are project based learning (PBL), and proficiency based education (PBE), also known as competency based education (CBE). The current research project is focused on Maine which uses PBE, and as such that term will be used in this project.

In project-based learning, students learn through projects in which they have personal interest while still covering the standards in the different content areas. Students set goals and self-monitor their learning while they complete each project. While PBL focuses on covering academic standards, there is also a focus on habits of works such as communication, problem solving and working with others (Meyer & Wurdinger, 2016).

Proficiency based education allows students to work at their own pace to complete the standards traditionally assigned to a specific grade. There is no one specific way to implement PBE as it is defined as any system which requires mastery of content to continue on to the next lesson or level.

Proficiency-based education refers to any system of academic instruction, assessment, grading and reporting that is based on students demonstrating mastery of the knowledge

> and skills they are expected to learn before they progress to the next lesson, get promoted to the next grade level or receive a diploma. ("What is Proficiency-Based Education?", n.d., para.1).

This is a shift from traditional education where students advance to the next grade level by hitting minimum requirements in a school year (Brodersen & Rande, 2017). The National Center on Time & Learning (2011) recommended that student advancement be based on proficiency of standards rather than seat time in a classroom (Ryan & Cox, 2017). The goal of PBE is to have students who will graduate with the skills necessary to be successful after high school.

Maine law. At the time of this literature review, Maine law states in the spring of 2021, all public Maine high schools must graduate students with a proficiency based diploma. This diploma must certify that students are proficient for the standards in English, mathematics, science, and social studies. By the spring of 2025, graduating students must be proficient in the standards for all content areas needed to meet graduation requirements (2011, c. 669, §7 (NEW).).

Under Maine Law, students must be able to show proficiency through multiple pathways and types of evidence ("Maine Revised Statutes", 2017). While the outline of proficiency has been defined, there are still many questions as to how to conduct PBE in the classroom. Many district and school leaders in Maine are still unsure as to how to tackle the changes which come with the switch to PBE. Surgis (2016) discussed the challenges which were found in implementing PBE:

> These challenges included moving beyond the single academic courses into interdisciplinary ones, creating more opportunities for deeper learning, developing

> stronger efforts to use habits of work and develop the guiding practices, clarifying what it means to reach a Level 4, and rethinking honors. (Surgis, 2016, para.17)

In terms of how schools are to carry out PBE, the government of Maine leaves it open to interpretation as long as certain criteria is met. Students must show mastery of the knowledge and skills deemed necessary before moving on to the next lesson or being promoted to the next grade level. Questions as to how to set up classroom and school so that mastery for students can be met with current budget and staff have not been addressed as well as how this will affect special education students. This open definition has left schools and communities with more questions than answers, and districts in the state of Maine are not aligned with a definition of mastery or with which skills and knowledge are necessary for each grade level. While the deadlines have been set for Maine schools, Ryan & Cox (2017) stated, "greater empirical evidence about the nature and effectiveness of competency-based education is needed to inform both policy and advocacy at both the national and state levels." (p.20) Because PBE is still a relatively new concept, especially in the state of Maine, there is no long term evidence that this approach to education will be effective in properly preparing students for the future.

Habits of Work

One of the issues that arises with the implementation on PBE, is the lack of habits of work being taught in a system where students are able to work at their own pace and reattempt lessons until they show mastery. The skills involved with habits or work are often described as non-cognitive or soft skills. These skills include "study skills, attendance, work habits, time management, help-seeking behaviors, metacognitive strategies, and social and academic problem

solving" (Garcia, 2014, p 8). These skills are important to the development of students (Garcia, 2014); however, even with the obvious importance, the development of these skills have been somewhat missing from education in America (Laskey & Hetzel, 2010).

Students who have well developed habits of work can apply the skills to do well in school. Students who are able to manage their time, know how and when to seek help, and who are aware of effective study habits which work for them have the tools necessary to be successful in their academics. Habits of work allow students to become self-regulated and become persistent and develop strategies to complete course work. On the other hand, students who lack these skills often have a hard time finding the motivation to excel academically (Laskey & Hetzel 2010). Coursework can often feel overwhelming for students, and without the development of habits of work, which allow students to feel they have tools to know how to complete the work, many students struggle to achieve academic success.

Educators are not the only ones who see the value of habits of work. In a study conducted by Meyer and Wurdinger (2016), student's thoughts on important life skills were examined. The students felt self-directedness/independence, communication/social skills, time management and collaboration were the most important skills for their future. Because of important part these skills play in the development of students, Garcia (2014), concluded that the skills should be a part of educational policy. While developing a policy which involves habits of work is a large undertaking, there are steps teachers can take in their classroom to include these important skills into the curriculum even if they are not being evaluated for a grade.

According to Garcia (2014), teaching habits of work skills contradicts the current educational focus on evaluating students on only academic standards; however, because habits of

work go hand in hand with the successful mastery of the academic standards being taught, not teaching habits of work does not allow students to develop to their full potential. The researchers claimed that if students are to be successful in areas outside of education, the skills being taught cannot only be academic.The idea of focusing on both academic standards and habits of work lends itself to the goal the Maine Department of Education has for the switch to proficiency based education, which is for students to have the necessary skills and knowledge to be successful in high school as well in higher education, adulthood, and the workforce.

Laskey and Hetzel (2010) found that students who lacked habits of work skills often have habits which lead to the detriment of their education because they do not understand the connection the skills have to their academic success. Because students do not see their importance, they see no need to develop these skills, and therefore struggle to find ways to learn the material. They found that at-risk students in particular need to be taught these vital skills, and the importance of the skills, in order to succeed in school as they did not possess the skills necessary to seek help in comprehending material they found difficult. Because of this, when students entered post secondary educational institutions, they were not prepared to handle the workload in a more independent learning environment such as college.

If the goal of education is to prepare students for the future, Garcia (2014) concluded that habits of work skills are important in regards to students entering and being successful in the working world. Schulz (2017) echoed Garcia's research and refers to today's job market to prove the importance of habits of work. In his report, Schulz (2017) stated that it is the personal traits and habits of an individual that gives the prospective employee the competitive edge over other applicants. He continued on the point to say people who have mastered these skills have much

better career opportunities, and that habits of work alone are often no longer enough to be successful in the working world.

Knowing that teaching habits of work in the classroom is important is not enough. Teachers need to know pedagogical strategies for how to address the skills in the classroom especially when making the change from traditional education where points can be deducted for bad habits such as late work to having the grade solely based on the skill being assessed. Schulz (2017) stated that the shift in focus to a more student-centered learning approach in schools goes hand in hand with the development of soft skills . Garcia (2014) noted that, "Accountability practices and policies must be broadened in a way that makes explicit the expectation that schools and teachers contribute to the development of noncognitive skills" (p.4). The teaching of soft skills connects to more than just changing the way teachers approach a lesson and the curriculum as it involves all aspects of the school including teacher support and training, and evaluation systems. Schulz (2017) reported teaching students what the skills are, and the importance of the skills in connection to their future, would be the initial step for educators.

While Garcia (2014) called for an overhaul of the educational system to pull focus to the habits of work, Schulz (2017) suggested a less invasive way by incorporating habits of work into the standards. The change would be the in teaching method such as an increase in group discussions and presentations. A list of ways to incorporate the skills into the classroom was addressed in the research of Jacobson-Lundeberg (2016). The list included teaching methods such as interactive lectures, demonstration, modeling, discussion, and simulation. These methods allow students to become more involved in their learning rather than a traditional lecture. Jacobson-Lundeberg also gave examples of assignments and assessments to be used in the

classroom such as questioning, project-based learning, cooperative learning, reflective essays, and observations. These types of assignments and assessments allow students to deepen their understanding of the material by reflecting and expanding on their learning as well as the process of learning the material. Teachers also benefit from these assignments the become aware of not only what content the students are retaining, but how they are able to make connections and process the information.

The way in which habits of work should be approached in the classroom was researched by Laskey and Hetzel (2010). They concluded educators need to be aware of the importance of the skills and how to embed them into their classroom for students to be increase their skills. Simple changes such as providing timely and truthful feedback of students work, especially for at-risk students, will help students understand their abilities and skills. Laskey and Hetzel (2010) had similar conclusions as Schulz (2017) and Jacobson-Lundeberg (2016) that group work, presentations, and other teaching strategies can help the development of habits of work.

Time management.

One specific habit of work which has been found to be important for the success of students and educators is time management. In a system such as PBE, it is important to understand the typical time it takes a student to go through performance levels to determine whether or not a student is on or behind pace, and identifying those who may need additional educational assistance (Brodersen & Rande, 2017). Though it is clear that time management is an important skill, there is a little research connecting time management to academic performance (Burrus, Jackson, Holtzman, Roberts, & Mandigo (2013).

When it comes to time management, it is important to have goals in mind to reach. This can vary from the completion of an assignment to completing the correct courses for college. Mensah and Atta (2015) conducted a report that shows while teachers focus on long term goals for students, students are more likely to focus on short term goals. Laskey and Hetzel (2010) had similar thoughts as they hypothesised that if students are used to instant gratification it may make it harder for them to become self-regulated learners who are aware of what they need to do to be success long term. Teaching students how short term goals connect to long term goals can help with creating a timeline to complete what is needed to achieve their goals.

Habits of work can be used for skills both inside and outside of the classroom. Jianzhong (2009) conducted research connecting habits of work and homework behaviors. Jianzhong reported that students need instruction in areas such as setting priorities, planning ahead, and staying focused, to increase the behaviors needed to be successful in homework completion. When it comes to assignment completion, Burrus, et al. (2013) suggested time management interventions such as goal-setting, scheduling, prioritizing tasks, and self-monitoring for student success. There are a wide variety of ways to introduce time management strategies to students, but for many students the lack of these skills makes it hard to be successful especially in a self-paced classroom where self regulation is so important.

Both Burrus, et al. (2013) and Laskey and Hetzel (2010) remarked on the need for more research in this area as very few studies focus on time management in adolescents. If effective time management has a positive correlation with academic performance, it would be a valuable skill for students to attain. Because students gain the most when habits are developed at a young age, interventions while at the age when students are still in school would make sense.

Conclusion.

While Maine and other states have take steps away from traditional education, there has been little research conducted on how habits of work will fit into the educational reforms - especially in the case of proficiency based education. Allowing students to work at their pace and have multiple pathways to show mastery is a big change for students, teachers, and communities. All aspects of education (academic skills and habits of work) must be taught in an efficient manner for students to receive a well-rounded education which prepares them for the future.

If the goal of Maine's department of education is to be obtained, the focus cannot only be on academic standards. There needs to more research done on how to incorporate the skills studies have found to be pertinent to the future success of students. Maine public schools have started to implement an educational reform which allows students to work through standards at their own pace, but skill development such as time management, and not part of the proficiency based education platform. Without the skills on how to manage working at their own pace, students may not be able to reach their full potential in the most efficient manner.

The purpose of this research study is to identify how implementing a time management intervention into a junior high math class at Central Aroostook Junior/Senior High School will affect the confidence, efficiency, and academic success of the students. Ryan and Cox (2017) concluded that it is important to use students as a resource in how to implement proficiency based education in the classroom and when and how to implement policy changes.

The study will examine the following research questions:

1. How do students at Central Aroostook Junior High School feel a time management intervention has affected their academic success in math class?

2. How is the pace of the class affected by the time management intervention?
3. How is the academic success of the students affected by the time management intervention?

Methods

Purpose of the Research

The purpose of this research was to investigate how the teaching of time management skills affected the academic performance of junior high students in a proficiency based mathematics classroom. Proficiency-based education allows students to work at their own pace, but little research has been done on the importance of habits of work, such as time management, in a proficiency based classroom. This research will benefit both teachers and students. Students may learn how to manage their time when transitioning from a traditional education classroom to a proficiency based classroom. Teachers will have an example of how to incorporate time management skills into their classroom both as a way to help pace students and how to have students be accountable and reflect on their time on task. While previous research such as the studies (Garcia, 2014); Laskey and Hetzel 2010; Schulz,2017:& Jacobson-Lundeberg, 2016) all concluded habits of work are important in the traditional educational, both Burrus, et al. (2013) and Laskey and Hetzel (2010) concluded that there is a need for further research on time management and how it relates to adolescent students.

Research Questions

The research questions for this study were: (a) How do students at Central Aroostook Junior High School feel a time management intervention has affected their academic success in math class? (b) How is the pace of the class affected by the time management intervention? (c) How is the academic success of the students affected by the time management intervention?

By answering these questions through action research, there was data to show the effect and importance of teaching time management skills in the proficiency based classroom. Teacher

observations and student feedback showed which interventions were successful for time management and those that were not effective. Before the study began, I was aware the research may also show a lack of correlation between time management and student success, which may point to other research questions on student motivation and assignment completion.

Central Concepts Related to the Investigation

There are many research reports on habits of work in education. The research spans from the importance of the skills to how and when the skills should be taught. (Garcia, 2014) stated habits of work are important to the overall development of students. Meyer and Wurdinger (2016) looked at the skills from the perspective of students and concluded that students also see the benefits and importance of habits of work and how they correlate with success in the classroom. While the studies in the literature review are conducted in traditional educational classrooms, (Laskey & Hetzel, 2010) believed that although the importance of these skills for students is obvious, the development of the skills has been missing in American education. With the switch to proficiency based education, the research showing the correlation between habits of work and student success does not yet exist. If habits of work have been proven to be an important part of the future success of students, these habits need to be addressed in the proficiency based classroom.

Because proficiency based education is a relatively new concept, especially in Maine, there is not a lot of research which shows the long term effects of focusing grading purely on academic standards. While research is limited, it is impossible to tell whether habits of work will develop in students starting their education in a self paced classroom, or if they will still need to be embedded into the curriculum for students to reach their full potential in the most efficient

manner. However, students currently in the midst of their education during the transition do not have the skills as many are focused on hitting common deadlines for both assignment completion and the time allotted to learn skills and concepts. Because of the use of averages, students are accustomed to moving on to the next lesson even if they do not understand the previous lesson.

Approach

This study was done using an action research approach. This approach was appropriate as Creswell states action research is to be used when, "Educators aim to improve the practice of education by studying issues or problems they face. Educators reflect about these problems, collect and analyze data, and implement changes based on their findings" (p. 579) Previous studies on habits of work such as Garcia (2014) have included researchers coming and implementing strategies in the classroom setting, but the focus was on the importance of the skills rather and which ones should be taught in the classroom rather than how they could be implemented. Jacobson-Lundeberg (2016) and Schulz (2017) both gave examples of strategies to use in the classroom such as group work, modeling, and interactive lectures, but there are no examples of how teachers should use these approaches. I completed the research in my own classroom, and implemented different time management strategies throughout the study and then analyzed the data to determine to effectiveness of each intervention. I was able to reflect on not only the time management strategies that were implemented, but how they fit into the daily teaching schedule and student work time.

Quantitative data was collected in the form of surveys, student feedback, and teacher observations. The quantitative data was gathered on how the thoughts and feelings of the students changed throughout the interventions. The survey answered was organized using

single-item scores. Once the data had been organized, a descriptive analysis was used to find overall trends. A journal was also kept to allow for reflection on student observations during the intervention. I gathered quantitative data from my gradebook to see the effect the intervention had on student grades.

By conducting the research in my own classroom, I was be able to take notes throughout the process on student behavior. At the end of the study, I was not only able to have student input on time management, but recommendations for teachers on how to implement the strategies into their classroom.

Methods of Inquiry

This action based research happened in stages throughout a two month window. In the first stage, students completed an online qualitative survey on their thoughts and feeling on time management as it relates to their education, and to what degree they manage their work time effectively.

In the second stage, students were introduced to time management strategies. The interventions included the use of an online calendar, both short term and long term goal setting, and self reflection of the use of class time. We discussed what it means to manage time in the classroom and the current methods used by the students to complete their work on time. All assignments and assessments were listed on the whiteboard at the front of the room at the start of each learning goal, and the teacher went over the daily goal for students each day during the study. For the first time management strategy, students created a person timeline of how and when they will complete each component of the learning goal. At the start of each class, students checked their schedule to see what they need to complete that day. Students evaluated

themselves at the end of each class period to see if they need to adjust their schedule and reflect on their use of class time. For the second intervention, students filled used a Google Calendar to track their assignments and assessments. Because of a change in teachers at this time (maternity leave), the Google Calendar was only completed by the eighth grade participants. For the second stage of the study seventh graders used only the daily goals written on the board. The final intervention, students created a Google Doc which they used to record their daily assignments and reflect on their use of class time. During all interventions, I made notes on student behavior, skill development, and the time in which it took students to show proficiency.

In the final stage, students completed another survey on their thoughts and feeling of their time management skills. Academic achievement (number of students proficient and beyond proficiency) and teacher notes were analyzed to see the effects, if any, the intervention had on student proficiency.

Setting

The setting of this research study was Central Aroostook Junior/Senior High School. This is an appropriate setting as the researcher is a junior high math teacher and has been granted permission by the district office and building administrator. Central Aroostook Junior/Senior High School is 7-12 rural grade school which is located in Mars Hill, Maine. The junior high students who were enrolled in the mainstream mathematics classroom consisted of 43 students (19 male and 26 female). As of the 2014-2015 school year, the entire school hosts 205 students. Of those 205 students, 65 were eligible for free lunch and 18 for reduced lunch. The total revenue per student is $14, 209 with 52% of the revenue coming from local taxes.

Participants

A proposal stating the purpose and participants for this study was sent to the institutional review board (IRB) at the University of Maine at Farmington (Appendix A). Upon approval from the IRB, students (Appendix B) and the parents (Appendix C) of the students potentially involved with the study were asked for consent. Students were be approached in class, and a parental consent form was sent home with students. Students and parents were made aware that student participation will not affect the grade of a student. The participants consisted of mainstream mathematics students in seventh and eighth grade.

Once permissions were granted, ss the researcher and classroom teacher, I sent an online survey through Google Docs to students to complete at the beginning (Appendix D) and end (Appendix E) of the study. The surveys consisted of 10-15 questions with questions being open ended. Students were also observed during class and notes were taken by the researcher on their behavior and comments in regards to the study. Student grades were assessed throughout the study to follow the progression of proficiency of the students involved in the study. The amount of students who are not yet proficient, proficient and beyond proficiency at the end of each learning goal during the intervention was compared to the number of students in each category for the first learning goal of the study during which no intervention took place.

Methodology

I used an action research approach for this study. According to Creswell (2015) action research is completed in an educational setting gather information and improve teaching and student learning. This was appropriate as it allowed me, the teacher, to conduct the research in my own classroom and adapt to any problems that may arise during the study. This research was

conducted in order to collect data on student thoughts and behaviors as it pertains to time management in a proficiency based classroom.

Operational Measures

The first two weeks of the study involved no intervention. The gradebook for the learning goal covered in the initial two weeks was used to compare to the grades collected after the interventions began. Before students completed the first survey, the class discussed what time management is, how they manage their time, and the importance of time management. After the discussion had taken place, students completed a survey. The survey included questions on students thoughts and behaviors related to time management in the proficiency based classroom. With each new learning goal during the study, a new intervention was introduced. I also took notes throughout the study on the observations of student behavior and work completion as it related to the study. Quantitative data was collected from the online gradebook Web2School which contained the number of students who reach proficiency, beyond proficiency, and the students who have not yet reached proficiency. At the end of the study, students completed another survey on their time management skills as well as the strategies used in the classroom and the impact the strategies had on their performance in mathematics and their other subjects. The survey and grades from the pre-intervention stage were then compared to those at the end of the study to find common themes, changes in perceptions, and the proficiency level of students.

Data Analysis

After collecting the data, I analyzed the results of the surveys, my researcher observations, and gradebook. Student surveys from the beginning of the study and the end of the study were compared to see if they align with the quantitative data collected from the gradebook

from each student. Survey results on questions using a scale will be scored using single item scores. Descriptive analysis will then be used to find trends in the data. Measures of central tendency were used to show trends in grade level, gender, and individual responses of answers on the initial and ending surveys. Qualitative survey questions and observations were categorized to find any trends or themes.

Expected Findings

The literature review points to the importance of teaching habits of work in the classroom in the research of Laskey and Hetzel (2010), Garcia (2016), Jacobson-Lundeberg (2016) and Schulz (2017) . At the time of this literature review, before the start of the study, I expect to the find the results to be the same in the proficiency based classroom pointing to habits of work (specifically time management) to be important to the academic success of students. Because proficiency based education allows students to work at their own pace, I expect time management skills will enhance student progression throughout the learning goals, and that students will feel confident about the work they are able to complete. While I expect to see an increase in the number of students reaching proficiency, I am hopeful that with extra time, more students will attempt to go beyond proficiency and dive deeper into the learning goals to really challenge themselves academically. I am curious on how students perceive their current time management skills, and how important the students believe the skill to be in proficiency based education. I am hopeful that if the interventions have been successful, students will be able to apply the skills they have learned to other classes and when working with other teachers.

Potential Issues and Weaknesses

The weakness of this study was the sample size and that the students involved were in their first or second year of proficiency based education. The sample size was limited to mainstream mathematics students in a small rural junior high. Because the students are entering proficiency based education at the junior high level, the results may only be relevant to other students in the same position in terms of their familiarity with proficiency based education.

My position as teacher may also affect the outcome of the study. While students were be made aware that the outcome of the study has no outcome on their grade, I am still in a position of authority, and students may work harder because they know they are part of my study and not because of the interventions. This may also influence how they answer the questions on the surveys.

Another possible issue is that, at the end of the study, a substitute teacher was conducting the class. Because there was a change in teachers, the switch may affected the outcome of the intervention as other teaching strategies such as classroom management changed as well. It is hard to tell if the change in student progression during the time the substitute teacher was teaching was due to the time management strategies or a change in teaching style.

Results

The purpose of this action research study was to determine the potential effects of using time management strategies in a middle school proficiency based mathematics classroom. The study was conducted to answer the following questions:

1. How do students at Central Aroostook Junior High School feel a time management intervention has affected their academic success in math class?
2. How is the pace of the class affected by the time management intervention?
3. How is the academic success of the students affected by the time management intervention?

This study was conducted through pre- (Appendix D) and post- (Appendix E) intervention surveys as well as teacher observations and the analysis of student proficiency. Three learning goals were taught during the intervention phase of the study. During the intervention, a new time management strategy was introduced for each learning goal (academic standard). Students were given ten class periods to complete each of the learning goals just as they had been given for previous learning goals before the time of the intervention. For all three stages of the intervention, daily goals were written on the board by the teacher. These goals reflected which assignment or assessment needed to be completed in order for students to be able to take the level three assessment on the last class period for the learning goal.

The first intervention involved a goal setting sheet (Appendix F). At the start of the learning goal, students filled out a sheet stating what they would need to complete during each of the class periods for the learning goal to achieve the level of proficiency they wanted to meet by the end of the learning goal. At the end of each class period, students would look at their goal

sheet, state whether they hit their goal or not, and then self assign homework if needed. At the end of class time for the learning goal, students answered questions on the sheet to reflect on their use of class time.

For the second intervention, students filled out a Google Calendar with the work they were to complete each work day. They were able to set reminders so they could receive emails reminding them of the work they had to complete. For this stage, only eighth grade students completed the Google Calendar because of my unexpectedly being absent from the classroom at the time of the start of the seventh grade learning goal. Seventh grade students only used the daily goals written on the board by the teacher for this stage.

For the final stage of the intervention, students completed a Google Doc tracking sheet (Appendix G). The tracking sheet was shared with both me and the substitute teacher who was conducting the class for this stage of the intervention. Students set a goal for themselves at the end of each class period to be completed the next class period. They stated whether they hit their goal for the day, what they worked on if their hit their goal before the end of the class period, and reflected on their time management for the period.

The intent of this research was to analyze the effect the time management strategies had on both student proficiency in content areas and student perceptions of proficiency in time management. Student proficiency of academic standards was scored on a 1-4 scale (Table 1). At the end of the ten alloted class periods, a level of current proficiency was entered into the online gradebook Web2School for each student. While students were able to continue to work on the learning goals outside of classroom time, after the ten class periods, their level of proficiency at

the end of the allotted classroom work time was used to determine the effect of the time management strategies.

Table 1
Proficiency scale used at Central Aroostook Junior/Senior High School

Level of Proficiency	Percentage Based Proficiency	Performance Descriptors
4	80-100% of Level 4 Material	In addition to Level 3.0 performance, in-depth inferences and applications that go beyond instruction to the standard.
3.5	70-79% of Level 4 Material	In addition to Level 3.0 performance, in-depth inferences and applications with partial success.
3	80-100% of Level 3 Material	No major errors or omissions regarding the Level 3.0 content (simple or complex).
2.5	70-79% of Level 3 Material	No major errors or omissions regarding Level 2.0 content and partial knowledge of the Level 3.0 content.
2	80-100% of Level 2 Material	No major errors or omissions regarding Level 2.0 content. -- and/or -- No major errors or omissions regarding the simpler details and processes but major errors or omissions regarding the more complex ideas and processes.
1.5	70 - 79% of Level 2 Material	Partial knowledge of the Level 2.0 content.
1	60 - 69% of Level 2 Material	Insufficient knowledge of the Level 2.0 content.
0.5	50 - 59% of Level 2 Material	Inadequate knowledge of the Level 2.0 content. -- and/or -- With help, a partial understanding of the Level 2.0 content.
0	Below a 50% of Level 2 Material	Limited to no understanding or skill demonstrated.

All students involved in the study were mainstream junior high mathematic students at Central Aroostook Junior/Senior High School in Mars Hill, Maine. There were a mix of male and female as well as seventh and eighth grade students in the study (Table 2). Of the 18 participants, seven were male (39%) and 11 were female (61%). The study was conducted in two seventh and two eighth grade class periods with ten participants in seventh grade (55%) and eight participants in eighth grade (45%).

Table 2
Participants in study compared to total number of junior high mainstreamed mathematic students enrolled at Central Aroostook Junior/Senior High School.

	Number of Participants	Total Number Enrolled*	Percentage Participating
Students	18	41	44%
7th Grade	10	24	42%
8th Grade	8	17	47%
Boys	7	19	37%
Girls	11	22	50%

Note. *Total number of junior high students enrolled in mainstream mathematics at Central Aroostook Junior/Senior High School.*

Research Question 1

The first research question of this study was: How do students at Central Aroostook Junior High School feel a time management intervention has affected their academic success in math class?

Pre-Intervention. Before the start of the time management intervention, students completed a survey (Appendix D) on their time management skills. When asked how often they hand in work after the due date since the switch to proficiency based education (PBE), 50% of the students reported they sometimes or often hand in work after the due date compared. When asked how often they handed in work late before the switch to PBE, only 33.4% stated they sometimes or often handed in work after the due date (Figure 1). When asked why they handed work in late, four student answers related to time management, three related to remembering what they needed to do, two related to being absent from class, and the remaining student responses varied from internet access, not understanding the work, and not knowing why they hand in work late.

In response to the question regarding how important it was to them to stay on pace for each learning goal (Very, Somewhat, Not at all), every student responded that it was very important; however, only two students stated they were never behind on at least one learning goal. In response to the last question of the survey, is there anything else you would to share about your time management skills or proficiency based education, participant 12 stated, “Time management doesn't always come naturally, so it might take more time to pick up depending on the person.”

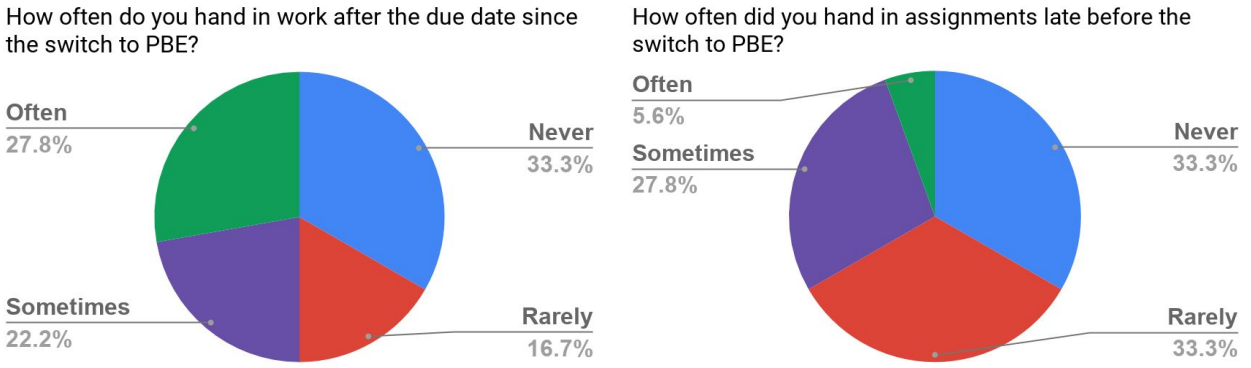

Figure 1. Student responses to questions on pre-intervention survey.

Post Intervention. At the end of the intervention, students completed a second survey on time management. When asked if their mathematics grade changed during the intervention, 39% of students responded that their grade improved. When asked to rate their time management skills on a scale of 1-10, the mean score was 6.0 in the pre intervention survey and 7.6 in the post intervention survey (Table 3). In the post intervention survey, three students rated themselves below a seven compared to nine students who did so in the pre intervention survey.

Table 3.
Self-assessed time management skills pre and post intervention on a scale of 1-10.

	Mean	Median	Mode	Range
Pre-Intervention	6	6	8	3-10
Post Intervention	7.6	8	7	4-10

When asked what strategy they found most effective, students responses were mixed among the strategies (Figure 2). Students were asked to explain why they found the strategy effective. Students that found the goal tracking sheet the most effective, found it effective for a variety of reasons including they knew the goals for the day and they completed more work. As

with the goal tracking sheet, there were a mix of responses for the Google Doc tracking sheet. Student responses included that it made them work harder, think about the next day, and it was on their own personal time. Participant number 14, the one student who elaborated on the Google Calendar stated, "It allows me to put school and personal goals in one calendar." Of the five students who found the daily goals on the board to be the most effective, four responded they liked the strategy because it was in front of them, and they only had to look up to see what needed to be done for the day.

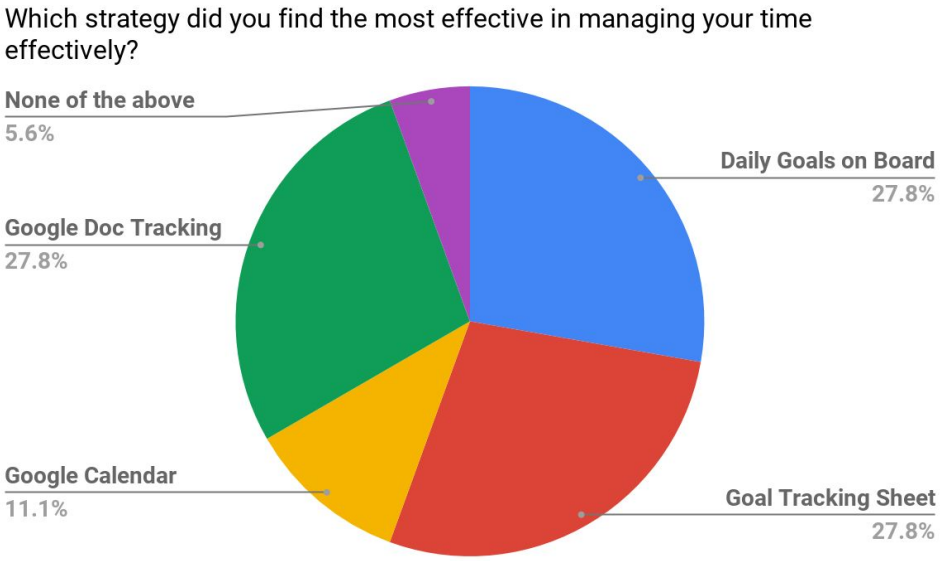

Figure 2. Student responses in post-intervention survey.
Note. *The Google Calendar strategy was only used by the eighth grade students, and the writing of the daily goals on the board was done throughout each of the three learning goals for both grade levels.*

In the post intervention survey, 56% of students said they would continue to use at least one of the strategies even if we stopped using the strategies as a class. Four students stated they

would continue to use the hand written goal sheet, and each of the other three strategies (Google Tracking sheet, Google Calendar, and daily goals on the board) were chosen by two students.

Research Question 2

The second research questions of this study was: How was the pace of the class affected by the time management intervention?

Assignments and Assessments. In both the pre- intervention part of the study which covered one learning goal and for three learning goals covered during the intervention, ten class periods were allocated for each learning goal. Two days of each learning goal time period were used for full class lessons. The first day of each learning goal was used for a teacher lesson of the level two work, and the fifth day was used for a teacher lesson of the level three work. If some students were ahead of the pace of the class, they were allowed to continue to work at their own pace during the level three teacher lesson. Students were permitted to complete any of the work for the learning goals, with the exception of assessments, during or outside of their regular math class periods. Students were also permitted to come in for extra help during their study halls and after school.

All learning goals for the school year (prior to and during the study) were set up with the same work schedule. There was a level two teacher lesson, two level two practice assignments, a level two practice quiz on the the online program Quizizz, and then the level two assessment. The level three work was completed in the same order. The level four work varied with the learning goals. Some level four work was completed by correctly answering higher level thinking questions at the end of a level three assessment while other learning goals required an assignment separate from the other assessments. On the practice assignments for each level,

students were able to work individually or in small groups. In order for students to be able to take an assessment for level two to level three, they had to have a minimum grade of 80 percent on the practice quiz. Students were not permitted to work together on the practice quizzes.

At the start of the intervention phase, it was explained to the students that each day they would need to complete one assignment per class period to be able to have time to complete the learning goal by the end of the ten class periods. If students were to complete one assignment a day, they would take the level three assessment on the last day of the learning goal. If students wanted class time to complete level four work, knew they would be missing class time, or they wanted a chance to redo work if needed, they would need to adjust their schedule so they could work ahead of the teacher pace. Students were also able to work on assignments outside of class.

Goal Tracking Sheet. For the first strategy, students filled out a tracking sheet by hand at the end of each class period (Appendix F). Students were to write down what they had completed that day in class, state if they hit their goal for the day, decide whether or not they had homework, and set a goal for what to accomplish the next class period. At the end of the learning goal, they were to reflect of the use of their time.

Before it was time for the level three teacher lesson, seven students were ahead of the pace of the class. Of those students, three decided to continue on to the level three work. The remaining four students chose to use class time to work on assignments for other classes. When asked if they would like a small group teacher lesson, all students stated they wanted to wait for the teacher lesson as this gave them time to complete their other school work. At the end of the learning goal, four students finished before the end of the ten lessons (three that chose to move on to level three and one who did not).

Google Calendar. The Google Calendar was only used by the eighth grade students. Because it was the first time many of the students had used a Google Calendar, the majority of the first class period for the learning goal was dedicated to setting up the calendar with the students. Students entered in the assignment which was to be completed for each day, and set reminders to appear in their Gmail. Out of the eight participants, one student worked ahead of the class. Another student was absent for a few days, but was still able to complete the learning goal on time. When asked if they found the calendar effective, five students said they forgot about it as they do not check their Gmail on a daily basis, and all said they checked the daily goals written on the board more than going in to check their email (phones are not allowed to be used during the school day). At the end of the learning goal, two of the ten students had not completed the work associated with the learning goal.

Google Doc Tracking Sheet. For the final intervention, students created a Google Doc tracking sheet which was shared with the teacher (Appendix G). Students filled in the date, what they completed in class, if they met their goal, what they worked on after they hit their goal, and reflected on their time management. At the time of this learning goal, a substitute was in for the remainder of the study. Students shared the Google Doc with both myself (regular classroom teacher) and the substitute. This allowed me to track the progress of the students from outside the classroom and communicate with the students when needed.

While all participants were encouraged and given time to complete the Google Doc each day, of the 18 study participants, 14 students completed the Google Doc. Of those 14 students, one was below proficiency at the end of the ten class periods. Of the four who did not complete the Google Doc, one was below proficiency at the end of the ten classes. Seven students chose to

work on work for other classes during after hitting their daily goal, and four students completed the demonstrated proficiency before the end of the ten class periods. Five students worked on the learning goal for the entire ten periods, but were able to complete the work on time. One class period decided to play a review game for a class period as everyone was working a day ahead of schedule.

Strategies. Several students in the study finished daily goals and learning goals quicker than the teacher pace, but not all worked through the learning goals as quickly as they could have as many chose to spend their time working on class work for their other subjects. On four different occasions, students stated they prefer to wait for the level three whole class instruction, and therefore worked on other subjects until the level three instruction period. At no point did any of the students who were ahead of the teacher pace need to be redirected to be on task. On four different occasions, four different students in the study chose to spend a day helping another student in the class on the practice assignments instead of going ahead to the next level. Most students needed the full ten class periods to complete the work and show proficiency.

Research Question 3

The final question of this study was: How was the academic success of the students affected by the time management intervention? Student proficiency was scored on a 0-4 scale (Table 1). While a score of three is considered proficient, a score of 2.5 is considered to be on pace or passing.

Pre Intervention Stage. During the pre intervention stage of the study, students completed one learning goal. Three students (one in seventh grade and two in eighth grade) were below proficiency at the end the stage (Table 4). Nine students students had demonstrated

proficiency, and one student was beyond proficient. The three students who had not demonstrated proficiency at the end of the ten class periods did not finish the practice work in time to take the test. Once they completed the work (outside of class time), two of the students passed the proficiency test, and one student needed an additional reteach before being able to demonstrate proficiency.

Table 4.
Number of students at each level of proficiency at the end of ten class periods for each of the stages of the intervention.

	Below Proficiency	Partially Proficient	Proficient	Beyond Proficiency
Pre-Intervention	3	5	9	1
Goal Setting Sheet	1	5	7	5
Google Calendar*	2	3	11	2
Google Doc Tracking Sheet	1	2	6	9

**Google Calendar was only completed by eighth grade students. For this stage of the intervention, seventh grade students used only the daily goals written on the board by the teacher.*

Goal Setting Sheet. During the first stage of the time management intervention, only one student did not complete the practice work in time to take the proficiency test. The same number of students demonstrated partial proficiency as in the pre intervention stage of the study. Five students were beyond proficiency at the end of the ten class periods. Of those three students, four students has set a goal of being beyond proficient as their goal on their goal setting sheet on the first day of the learning goal. One of the students who was beyond proficient did not fill out the daily sheet on their progress.

Google Calendar. Two students did not complete the work in time for the proficiency test for this learning goal. Both students were in the eighth grade (seventh graders used daily goals on the board only for this learning goal). Two students were beyond proficiency at the end of the learning goal. Using only the daily goals on the board, all seventh grade students completed the practice work in time to take the test, and all students proved to be at least partially proficient. Only one student in seventh grade was beyond proficiency at the end of this stage of the intervention which was the same number as in the pre intervention stage.

Google Doc Tracking Sheet. In the final stage of the intervention, one student did not complete the work in time to prove proficiency at the end of the ten class periods. The student who did not reach proficiency did not complete the Google Doc tracking sheet. There were three other students who did not complete the tracking sheet who did show proficiency during this stage. Nine students were beyond proficiency at the end of this stage of the intervention. Of the ten seventh grade students participating in the study, eight were beyond proficiency for this learning goal.

Student Levels of Proficiency. During the pre intervention stage of the study, 56% of students were proficient or beyond proficiency at the end of the ten class periods. In the intervention part of the study, 72% of students were proficiency or beyond proficiency at the end of each of the ten class periods for each learning goal. After the final strategy (Google Doc tracking sheet) more students were beyond proficiency than below proficiency. While eighth grade students saw a slight increase in the class average (Figure 3) throughout the intervention (2.8 to a 3.0), the learning goal averages for the seventh grade students increased from a 2.8 in the intervention stage to a 3.7 in the final stage of the intervention. The pre intervention stage for

the seventh grade was the only learning goal in which the average of the study participants was below proficiency.

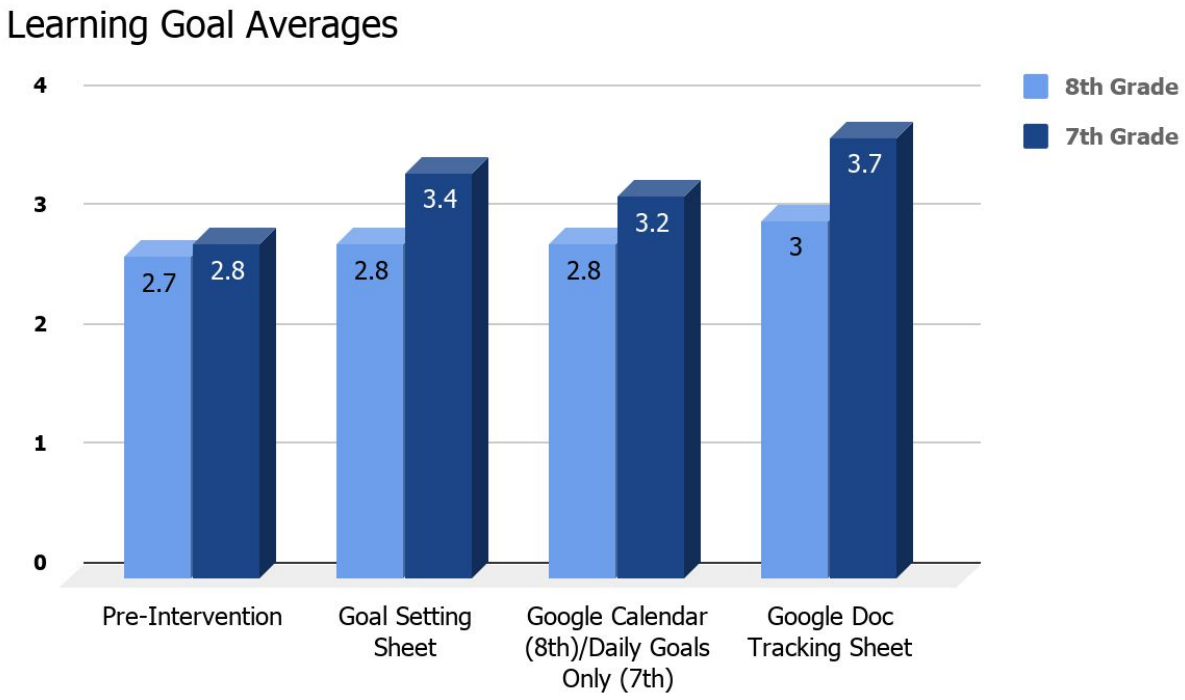

Figure 3. Learning goal averages for students participating in the study broken down by time management strategy and grade. A proficiency scale of 0-4 was used to score proficiency.

All three sections of the intervention stage of this study resulted in an increase of student proficiency compared to the pre intervention stage. Student proficiency was evident in the grade book, and students were also able to notice the increase as reported in the post intervention survey. Although the increase is evident overall, it is much more pronounced with the seventh grade participants. While students proficiency increased, and the pace of some individual

students increased, the pace of the overall class was not affected as several students needed all of the alloted class time to reach proficiency.

Discussion

The purpose of this study was to examine the effects a time management intervention had on student proficiency and perceptions of proficiency in a junior high proficiency based mathematics classroom. A pre and post intervention survey completed by participants as well as student levels of academic proficiency was analyzed to understand the effects of the intervention.

Student Results. Student perceptions of time management skills; student perceptions of proficiency; and student proficiency increased throughout the study. Students were aware of what was expected of them on a daily basis and planned out what they would need to have time to complete the proficiency assessment for each learning goal in the ten class periods assigned to each learning goal. The increase in proficiency was much more visible with the seventh grade students in the study than with the eighth grade students. Seventh grade students were in their first year of junior high, and their first year in my math class while most of the eighth grade students (one transferred in this year) were in their second year, and therefore more familiar with PBE and my teaching style. Having the intervention early in their experience of PBE and junior high may have played a factor in the ability of this intervention to positively affect their work habits and time management skills.

Class Implications. With having students focus on time management, as the classroom teacher, I did as well. Being aware of having assignments and practice which could be completed in the alloted time became more of a focus as did my instruction time. I was aware that time used

for full class instruction would take away from student work time, so I kept to the schedule of one teacher lesson per proficiency level. Prior to the study, if teacher lessons were longer than one class period per lesson, a day would be added to the work time for students. The learning goals completed during this study (pre-intervention and intervention stages) did not require additional whole class teacher instruction. During other class periods, small group and individual help and instruction were given as needed. The focus on the class was on hitting smaller goals, and students did not seem as overwhelmed with the amount of work for each learning goal. At the end of the goal sheet intervention, one seventh grade participant stated, "I was so lost before this." Keeping a schedule allowed students to focus their work in class, and I found students to be more relaxed during the intervention than with pre intervention stage. Students had a plan, and if they did not meet their goal for the day, they could make it up at another time without falling too far behind. Students being more relaxed during class time is also present with the findings of Burrus, Jackson, Holtzman, Roberts, and Mandigo (2013); however, my findings differ in the student self-assessment of time management skills as the students in this study reported an increase in time management skills, while the students in the study of Burrus et al., (2013) reported a decrease in time management skills.

In this action research study, I can also reflect that adhering to a schedule also had some negative implications. There was less time for class discussions and personalization of the learning goal. Student work was focused on the standard and completing the learning goal, so there was not as much connection to student lives. While students were able to reach proficiency, the class was more rigid and focused on student work time rather than student centered learning as students the practice and assessments were common to all students and did not allow for

personalization with the exception of the level 4 work. Mensah and Atta (2015) stated in their study:

> both teachers and students are active participants, knowledge about students' uniqueness informs classroom pedagogy, students have opportunities to relate learning experiences to their world of understanding, and students feel loved, cared for, and encouraged to use their curiosity to explore challenging learning experiences. (p. 30)

In their study on project based learning schools, Meyer and Wurdinger (2016) concluded that students felt they were able to increase their life skills through project based learning through focus groups and interviews though survey results showed an increase in some life skills (responsibility, problem solving, self-directedness, and work ethic) and a decrease in other skills (time management, collaboration, communication, and creativity). They concluded there was a positive correlation between skills development and grade level with time management being the one skill perceived to decrease over time. Going forward, it will be important for me to find a balance between hitting learning goals in a timely manner and still making sure the content is taught in a way that connects to the lives of the students while fostering the development of soft skills such as time management.

Implications for Practice: Teaching. In the future, I will continue to implement time management strategies in my classroom. Because of the success of the Google Doc tracking sheet and the goal tracking sheet, the strategies with the most success were the ones where students were responsible for deciding and planning out how to use their time rather than just being told when assignments were due. In addition to being helpful for the students, these strategies allowed me, as the classroom teacher to quickly check in to see where students are in

terms of a learning goal. With an ever increasing reliance on technology, the Google Doc is especially helpful as a teacher as it can be checked from anywhere, and it allows for communication between the teacher and the students.

In regards to teaching, I will continue to limit teacher lecture time and focus on student work time as was done in both the pre intervention and intervention stage of this study. Allowing the students enough time in class to complete the assignments and assessments will continue, as while breaking learning goals into manageable chunks so students can evaluate their pacing throughout the learning goal, and manage their time to hit their desired level of proficiency. Giving students choice in what to work on after daily goals were hit led to on task behavior even when not choosing to work on mathematics, and students seemed happy to have the choice, and is another way I can continue to make the class more student focused.

Limitations. The study showed an increase in both self-assessed time management skills and student proficiency, but there are many limitations to the study. For the second half of the study, a substitute teacher was implementing the strategies. In addition to a possible change in classroom management and environment, it also meant a lack of teacher observations for the second half of the study. The communication between myself and the students were through emails and Google Doc tracking sheet comments.

The time length of the study provided another limitation. Because my study was completed over eight weeks, it is not yet known the implications it could have on areas outside of proficiency of biweekly learning goals. The intervention did not take place during a standardized testing window, and therefore I am not able to conclude on the retention of the skills taught during the intervention. In the research of Brodersen and Rande (2017), they analyzed the

effectiveness of competency based education.While the researchers found the model to be beneficial for students in terms of time (especially for those below grade level), the assessment by the teachers only weakly aligned with those of the Transitional Colorado Assessment Program (TCAP).

Another limitation is the motivation of the students. While they completed the learning goals in a timely manner, there may have been other factors involved with the increased proficiency. Seventh grade students had the higher increase in proficiency, and at Central Aroostook Junior/Senior High School, seventh grade students can qualify for a high school math class in their eighth grade year, and one of the determining factors is their grade in seventh grade mathematics, and this research study was conducted at the start of the third quarter when students are reminded of the requirements to qualify for the Algebra class. While the time management strategies helped students plan their time to complete any level of proficiency, more research would be needed to say if the strategies were the reason for the increase in proficiency.

Future Research. Future research is needed on the implications of time management strategies and goal setting in the proficiency based classroom. First, while this study points to an earlier intervention being more effective, it may change as students will be entering junior high already familiar with PBE at the elementary level. The research of Laskey and Hetzel (2010), Garcia (2014), and Shultz (2008) all discuss the importance of the development of soft skills in students, but none of the studies took place with elementary school students. Students who start their formal education in a PBE classroom may benefit from time management interventions before they form habits of work more so than an older age when work habits are already formed.

Secondly, in addition to researching different age groups, more research is needed on the effect of time management and other soft skills in other subjects. Mathematics is a skill based class, and so more research would need to be completed in order understand the effect the strategies would have on more content based classes such as science and social studies. In mathematics, learning goal tend to build off of the previous learning goals, and so it would make sense that if more students are able to reach proficiency in a learning goal, that in itself may help them reach proficiency in future learning goals which include the same skills. Murni, Sabandar, Kusummah, and Kartasamita (2013) conducted a study which showed an increase in problem solving skills in the mathematics classroom. If the development of soft skills such as time management lead to the development of problem solving, this is a skill used in all subjects, and so should be effective in other content areas.

Conclusion. As shown in the literature review, previous researchers have emphasised the important of teaching soft skills such as time management in schools. It is not possible after one study to conclude the full impact of the teaching of time management skills, but there were no negative impacts on student proficiency in the study, and the results of the study indicated a positive outcome in continuing to help students learn and practice time management skills. Helping students develop time management skills was presented in the literature review as not only helpful to students in the continuing of their education, but in their future employment endeavors as well.

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Appendix A - IRB

University Of Maine at Farmington
Institutional Review Board (IRB)
Application for Review of Research

Title of Study: Teaching Time Management Strategies in the PBE Classroom
Principal Investigator: Julie Conrad
Co-Investigators: N/A

Status of Principal Investigator: Student
Faculty
Student – Advisor's Name - Johanna Prince
Staff
Other – please explain

Department: Office of Graduate Studies
Address: 111 South Street, Farmington, Maine, 04938
E-mail address: julie.conrad@maine.edu
Phone number: (207) 425-2811

Funding Source (if this is grant-related): N/A

Estimated Project Duration:

Start Date: ASAP pending IRB approval Completion Date: June, 2018

Signatures: All procedures performed under the project will be conducted by individuals qualified and legally entitled to do so. No deviation from the approved protocol will be undertaken without prior approval of the Board. Faculty Sponsors are responsible for oversight of research conducted by their students.

11/12/17  

Date Principal Investigator Faculty Sponsor

_____	_____
Co-Investigator	Co-Investigator

1. Characteristics of Participants (Special Populations): Check all that apply

X Minors (under age 18)
□ Pregnant Women
□ Fetuses or Products of Delivery
□ Prisoners
□ People with Physical Disabilities
□ People with Mental Illness
□ People with Developmental Disabilities
□ People with Diminished Capacity to Give Informed Consent
□ Elected or Campaigning Official

2. Age of Subjects:

□ 0-7 (Requires Written Parental Permission and Oral Child Assent)
X 8-17 (Requires Written Parental Permission and Written Child Assent)
□ 18-65
□ 65+

3. Gender of Subjects:

X Males X Females

4. Does this study involve any of the following procedures? Check all that apply.

□ Deception or punishment
□ Use of drugs
□ Covert observation
□ Induction of mental and/or physical stress
□ Procedures which may risk physical harm to the subject
□ Procedures which may risk mental harm to the subject
□ Materials/issues commonly regarded as socially unacceptable
□ Information relating to sexual attitudes, preferences or products
□ Information relating to the use of alcohol, drugs, or other addictive products
□ Information relating to illegal conduct
□ Genetic Information
□ Information normally recorded in a patient's medical record, and the disclosure of which could reasonably lead to social stigmatization or discrimination
□ Information pertaining to an individual's psychological well being or mental health
□ Information that if released could reasonably damage an individual's financial standing, employability, or reputation within the community
□ Procedures that might be regarded as an invasion of privacy

5. Research Proposal Information

Summary of the Proposal: In accordance with Maine Law, all students graduating from a Maine public high school must graduate with a proficiency based diploma starting in 2021. According to Maine's Department of Education (DOE) website, proficiency based education (PBE) includes any academic system which allows students demonstrate mastery of a skill before moving on to the next skill or grade level. The overall goal of PBE, according to the Maine's DOE website, is to ensure students acquire the skills necessary to be successful in the future.

Over the past four years, I have been making the switch to proficiency based education in my junior high classroom at Central Aroostook Junior/Senior High School. The first two years were spent making the transition in an English Language Arts classroom, and the two school years in a math classroom. With an increase of focus on providing students the options for learning, assessments, and instruction needed to master the necessary skills, the focus habits of work, such as time management, has decreased leading to an increase in late work, incomplete assignments, and students falling behind the pace of the class.

In a research study on educational policies, Garcia (2014), states teaching habits of work skills (such as time management) contradict the current educational focus on only academic standards, but, because of the connection between habits of work and academic success, ignoring the importance of these skills does not allow students to develop to their full potential. Through this study, I will investigate the effect of teaching time management skills has on the time in which it takes students to show mastery of the standards in a PBE classroom for seventh and eighth grade mathematics at Central Aroostook Junior High School.

This research study will be conducted as an action research project. I will first seek approval from my district administration to conduct the study (Appendix A). Then, after obtaining parent/guardian approval (Appendix B), students will complete a survey on their current thoughts and feelings on time management and proficiency based education (Appendix D). Over the next two months, I will introduce time management strategies and procedures to help guide to students to best manage their class time and assignment completion as well as ways to adapt to situations which may amend their timeline. The interventions will include assignment tracking sheets, goal setting, and online calendars. During the intervention time period I will be collecting data in an online journal on student engagement, comments, and behavior. After completion of the two months, I will analyze the academic achievement (Appendix F) of the students throughout the process quantitatively (grades) as well as quantitatively through a survey which will be completed by the students (Appendix E). Students who choose not to participate in the study will still take part in the interventions, but they will not be asked to complete the surveys, observations will not be made on their behavior, and their grades will not be a part of the study.

Through the study, I will address the following questions: How do students at Central Aroostook Junior High School feel a time management intervention has affected their academic success in

math class? How is the pace of the class affected by the time management intervention? How is the academic success of the students affected by the time management intervention?

References:

Garcia, E. (2014). *The need to address noncognitive skills in the education policy agenda. Briefing paper #386*(pp. 1-36, Rep.). Washington, DC: Economic Policy Institute. Retrieved July 19, 2017, from http://files.eric.ed.gov/fulltext/ED558126.pdf (ERIC Document Reproduction Service No. ED558126)

Subject recruitment: Students enrolled in my junior high math classes will all be taught time management strategies. I will invite them all to be part of the study by reading them Appendix C, and then send home the parent via student folders. Finally, I will ask students for written assent. Data gathering for this research study will track results of the strategies mentioned in the proposal summary. Student participation will have no bearing on their grades or performance in class. At the beginning and end of the study, an optional quantitative survey will be given to students via Google Docs.

Informed consent: MSAD 42 superintendent Elaine Boulier and Central Aroostook Junior/Senior High School building principal Kay York have given informal consent for the study via email. A formal request for approval using a common Administrator Consent form is in process (Appendix A). No formal research will begin until Appendix A is signed by both the principal and Superintendent. Parent letters (Adult Informed Consent Form, Appendix B) and will be sent home with students to seek consent for student involvement. Since minors between the ages of 8-17 will be surveyed, parent consent for child participation will also be included on the parent form (Appendix B), regardless of parent participation. Students enrolled in mainstream junior high math classes will be asked to complete surveys on their perception of time management and proficiency based education via Google Forms (Appendix D and E). Student written assent will be collected (Appendix C)

Confidentiality: The Administrator Consent forms and participant Informed Consent forms will be collected and stored in a locked filing cabinet in my classroom. Identities of the participants will be gathered but all information from the surveys will remain confidential. Student grades are stored on a password protected program and laptop. All paper and electronic files (other than those in the gradebook) will be destroyed at the end of the study.

Risks to subjects. Students may feel uncomfortable answering some of the questions. Students may skip any question they do not feel comfortable answering. The time it takes to complete the surveys may be an inconvenience.

Benefits: Students will be introduced to time management strategies that may be beneficial both inside and outside of the junior high mathematics classroom.

Debriefing: N/A

Personnel: Julie Conrad, Principal Investigator. Johanna Prince, Instructor.
I have successfully completed the NIH Web-based training course "Protecting Human Research Participants."

Other Institutions Involved in the Project: N/A

Dissemination of Results: Results from this research will be shared with the Graduate Study community at the University of Maine at Farmington and may be used in public presentations or an article.

Questionnaires & Surveys: See Appendices

Appendix B - Student Consent

Hello,

My name is Mrs. Conrad and I am a student at the University of Maine at Farmington. This letter is to explain my project to learn about time management strategies in the proficiency based classroom.

If you agree to be in our study, we are going to complete a survey at the start and the end of the study. For example, we will/might ask you: Do you use an agenda or calendar to track your assignments and due dates?
How often do you hand in assignments after the due date? How do you feel the switch the proficiency based education has affected your work habits?

You can ask questions about this study at any time. If you decide at any time not to finish, you can ask us to stop. The questions I will ask are your opinions, and this does not count for a grade in class. When we report results, you will not be identified by name. If you do not feel comfortable answering a question on the survey, you may skip it.

If you sign this paper, it means that you have read this and that you want to be in the study. If you don't want to be in the study, don't sign this paper. Being in the study is up to you, and no one will be upset if you don't sign this paper or if you change your mind later.

Contact Information: If you have any questions about this study, please contact me, Julie Conrad, at jconrad@sad42.us and (207) 425-2811. You may also reach the faculty advisor, Johanna Prince on this study at johanna.prince@maine.edu 207-778-7066. You may also contact the Chair of the IRB Karol Maybury karol.maybury@maine.edu.

Your signature: _____ Date _____
Your printed name: _____ Date _____
Signature of person obtaining consent: _____ Date _____
Printed name of person obtaining consent: _____ Date _____

Appendix C - Guardian Consent

Dear Parents/Guardians,

Your child is invited to participate in a research project I am conducting as part of my graduate education. I am the junior high math teacher at Central Aroostook Junior/Senior High School. I am also a student at the University of Maine at Farmington. I am researching how teaching time management strategies will affect student achievement in a proficiency based classroom.

What Will Your Child Be Asked to Do?
If you consent for your child to participate, your child will

- Complete two surveys on Time Management and Proficiency Based Education (one at the start and one at the end of the study). The survey will ask questions such as:
    - Do you use an agenda or calendar to track your assignments and due dates?
    - How often do you hand in assignments after the due date?
    - How do you feel the switch the proficiency based education has affected your work habits?
- I will also be collecting information on how long it takes your child to demonstrate mastery through a simple checklist that does not impact his/her grades in my course

I will not share identifiable data about specific students, parents or others involved in the study although my findings may be shared in a professional setting such as a presentation or publication.

Risks: Students may feel uncomfortable answering some of the questions. Students may skip any question they do not feel comfortable answering. The time it takes to complete the surveys may be an inconvenience.

Benefits: Your child may learn more about time management skills. Additionally this study may help future students at school and in other classrooms, as I hope to learn more about how to help students organize their assignments and learning goals, and meet deadlines.

Confidentiality: Your child's name or other identifying information will not be reported in any publications. The survey will not ask for any identifying information other than gender and grade level.

Voluntary: Participation is voluntary. If you choose to have your child take part in this study, s/he may stop at any time. Whether or not your child participates will not impact your child's relationship with the school, his classroom teacher or any other teachers. Your child may skip any questions he does not wish to answer or withdraw from the study.

Contact Information: If you have any questions about this study, please contact me, Julie Conrad, at jconrad@sad42.us and (207) 425-2811. You may also reach the faculty advisor,

Johanna Prince on this study at johanna.prince@maine.edu or 207-778-7066. You may also contact the Chair of the IRB, Karol Maybury karol.maybury@maine.edu.

Your signature below indicates that you have read and understand the above information. You will receive a copy of this form.

_____ _____

Signature Date

Appendix D - Pre-Intervention Survey

The purpose of this survey is to collect your perception of time management strategies in the proficiency based classroom. This communication includes discussions on student learning, progress, and behavior. I am currently taking graduate courses at the University of Maine at Farmington and plan to study the effect of teaching time management skills and student success in the proficiency based classroom. Your participation is greatly appreciated.

1. In what grade are you currently enrolled? 7 8
2. What is your gender? M F Prefer not to answer
3. What does the term time management mean to you?
4. On a scale of 1-10, how would you rate your current time management skills? Please explain why you rated yourself this number.
5. How often do you hand in assignments after the due date since the switch to PBE? Often, Sometimes, Rarely, Never
6. If you answered anything other than never on the previous question, please explain the most common reason for completing assignments after the due date.
7. How often did you hand in assignments after the due date before the switch to PBE? Often, Sometimes, Rarely, Never
8. Do you use an agenda or calendar to track your assignments and due dates? Yes No Sometimes
9. How do you feel the switch the proficiency based education has affected your work habits?
   I work harder than I used to I do not work as hard as I used to No Change
10. How important to you is it to stay on pace for every learning goal? Very Somewhat Not at All
11. Are there strategies you wish were in place to help you complete your work on time? If yes, please give examples.
12. How often are you behind pace on at least one learning goal (in any class)? Always, Often, Sometimes, Rarely, Never
13. What has been the best part about the change to PBE?
14. What has been the most challenging part about the change to PBE?
15. Do you use any strategies which you find helpful in completing your work on time? If yes, please explain.
16. What do you do if you know you are not going to complete an assignment on time?
17. Is there anything else you would to share about your time management skills or proficiency based education?

Appendix E - Post Intervention Survey

The purpose of this survey is to collect your perception of time management strategies in the proficiency based classroom. This communication includes discussions on student learning, progress, and behavior. I am currently taking graduate courses at the University of Maine at Farmington and plan to study the effect of teaching time management skills and student success in the proficiency based classroom. Your participation is greatly appreciated.

1. In what grade are you currently enrolled? 7 8
2. What is your gender? M F Prefer not to answer
3. What does the term time management mean to you?
4. On a scale of 1-10, how would you rate your current time management skills? Please explain why you rated yourself this number.
5. Can you name some of the time management strategies which we have tried in the past 8 weeks?
6. Which strategy did you find the most effective in managing your time effectively? Why?
7. Which strategy did you find the least effective in managing your time effectively? Why?
8. Have you used any of the strategies in other classes or outside of school? If so, which ones?
9. Has your math grade changed since we started using time management strategies? If yes, did it improve or worsen?
10. If we were to stop using the time management strategies in the class, are there any you would continue to use on your own?
11. Do you have any advice for students entering PBE on how to manage their time effectively?
12. Is there anything else you would to share about time management skills in the proficiency based classroom?

Appendix F - Time Management Goal Setting Sheet

Goal Setting
Managing My Time

My Goal is to be at a _____ by the end of this learning goal.

My Schedule

Day	Goal	Did you hit your goal?	Homework?
1	Teacher Lesson		
2			
3			
4			
5			
6	Level 3 Teacher Lesson		
7			
8			
9			
10			

Were there days you did not hit your goal for this lesson? _____

If yes, what kept you from hitting your daily goal? _____

Were there days you surpassed your daily goal? _____

If yes, what did you do with the extra class time? _____

Appendix G - Google Doc Tracking Sheet

Time Management

My goal is to be at a _____ by the end of this learning goal.

Date	Today in class I...	Did you hit your goal?	If so, what did you do after the goal was complete?	Did you use all of your class time wisely today? Explain