Teaching All Students: The Use of Self-Paced, Mastery-Based, Blended Learning to

Reach All Learners

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Abstract

Our methods to reach all students are no longer effective for the student body before us. Many students are struggling with stress, inattention in class, and absences from school. A significant number of our students are struggling to get to and stay in school. In addition to these issues, students are struggling to find relevance in their education. Students used to depend on their teachers to impart information to them that they would need to function in college, their careers, and society. Now, with all the answers conveniently located in their pockets, students need teachers to teach them how to ask the right questions. I have come to believe our classrooms need to be flexible and welcoming places where students can work at their own pace, whether due to difficulties with learning, paying attention, or getting to school. In this action research project, I implemented a self-paced, mastery-based, blended-learning process with my students and attempted to give each student work designed for their specific academic needs while also trying to build relationships with students in small groups and one-on-one interactions. Data showed: (a) time out of class was reduced from 12% to 7%, (b) students completed more schoolwork and achieved higher grades, (c) students indicated work was at their appropriate level, and (d) 90% of students reported enjoying class more.

Keywords: blended learning, mastery-based learning, self-paced learning, inclusionary teaching, positive learning environment

The current popular methods of attempting to reach struggling students include differentiating the curriculum, using visuals and multiple means of presentation and assessment,

using technology, scaffolding instruction, building a positive learning environment, and making learning meaningful to the real world and students' futures (Kampden, 2023). In exploring the most recent methods of teaching all students, including our most underserved and most vulnerable populations, models of blended learning, mastery learning, and self-paced learning all look like promising interventions. According to Kampden (2023), students today need a reason to engage in an activity; they need to see value in what they are learning or doing. Many of our students are facing adult challenges at heretofore unseen levels, including home and food insecurity, working during school hours to support their families, and the mental health challenges and gaps in learning that go with these issues (Stockman, 2023).

The makeup of the generation of students we are teaching is continually evolving and changing. If teachers want to reach all students, we must also evolve and change with our students. Students and teachers now live in an age where answers to common questions can be easily found on a device in their pocket. Students do not depend on teachers to impart knowledge in the way they used to. The need to memorize information to have it at your fingertips is also no longer necessary. With the advent of artificial intelligence, tools are commonplace and accessible to all, and the need to ask the right questions is more important than the need to come up with answers. Students in 2025 need to be taught how to think and problem solve more than they need to be taught random facts. I believe teachers need a system to engage all of the students that come from varying backgrounds, ability levels, educational levels, and family structures, and who have varying abilities to engage in the curriculum.

Literature Review

According to Kampden (2023), to help all students be successful in schools, including our most underserved and most vulnerable populations, educators should explore models of blended learning, mastery learning, and self-paced learning. The purpose of this literature review is to look at how schools and teachers can produce and implement a high rigor curriculum, as measured by student grades, work completion, attendance, and student

satisfaction data, for all students, including the most vulnerable students (e.g., ELL students, students who have mental health struggles, learning disabilities, physical disabilities, or ADHD issues, students who have attendance issues). At the same time, schools must maintain the financial investment and staff time investment at a realistic level for our budgets and teachers.

The overall themes I explore in this literature review include: (a) models of blended learning; (b) efficacy and outcomes of blended learning; (c) important elements of an effective blended-learning model; (d) implementation of blended learning; (e) barriers to success for blended-learning models

Models of Blended Learning

There are several models and names that are used synonymously for blended learning like "flipped classroom," "hybrid learning," and "remote learning." These models differ from blended learning, which is the thoughtful integration of technology into face-to-face learning (Vine et al., 2016). The image many administrators get, when they think of blended learning, is rows of students staring at a laptop. But blended learning is not meant to be the same as remote learning or online learning (Vine et al., 2016). Staker and Horn (2012) identified four major models of blended learning:

1. The first blended learning model is the flipped-classroom, and any type of station rotation set-up within a classroom, where students move at a set pace through any number of physical or electronic stations.

2. The "flex" model is a model of independent learning, where teachers provide tutoring or small group instruction only as needed, not on a preplanned basis.

3. In the self-blend model, students decide which elements to take in the classroom in person and which to complete independently on-line.

4. In an enriched virtual model, students move at their own pace through virtual learning; this can be compared to a flipped classroom model without the set pace.

Efficacy and Outcomes of Blended Learning

Research has shown varying levels of success between modest and exponential gains in the area of knowledge acquisition and content mastery for blended learning (Dehghanzadeh et al., 2019; Yan et al., 2022). Much of this variation can be accounted for based on the elements included in the specific blended learning plan. For instance, gamifying learning was found to be successful in a large-scale study (Dehghanzadeh et al., 2019). Immediate feedback and immediate intervention when problems arose were also found to be key elements for successful learning (Yan et al., 2022).

The largest growth area across all the literature, regardless of methodology, was in the area of autonomy and student attitudes to learning (Gault & Cuevas, 2022). Across all the studies considered, a high percentage of students were found to like the blended learning model. Blended learning was also noted to reach some of the more difficult to reach students, such as newcomers to the United States and students with special education needs (Mutya & Masuhay, 2023). According to Mutya and Masuhay (2023) these students were able to achieve mastery of content at a higher level using self-paced learning.

In a study of 182 students, across 12 different classrooms who took part in the blended learning model, were found to have mastered a science curriculum content as measured by summative assessment scores (Mutya & Masuhay, 2023). Of the 182 students, only three scored under 80% in the course, and 107 students scored over 90%. The remainder of the students scored between the level of 80% and 90%. Students not only achieved at higher levels when it came to assessment but also were noted as being more engaged in the curriculum (Mutya & Masuhay, 2023).

Other studies did not find the same jump in grades and mastery of content, but when Gault and Cuevas (2022) surveyed their 88 student participants, they reported increased confidence in the subject matter. Over 80% of the students reported feeling more organized, and 87% of students reported feeling more engaged. Grades for these students were slightly

higher than the grades of a control group that participated in a traditional classroom model. The other important thing to remember is that there is evidence that when attitudes and confidence rise, grades rise in the long-term (Bazelais et al., 2022). To be noted, data in this study were taken from a single 8-week period, not a full academic year of learning. This is a serious limitation considering the teachers and students were new to the methodology and technology at the beginning of the 8 weeks (Gault & Cuevas, 2022).

In a small study of eight students over the course of 10 weeks that focused on vocabulary acquisition, every student in the study had a higher test score on a poststudy test, and all students were out of the failing range, though the gain for most students was modest (Katasila & Poonpon, 2022). A pre and posttest was used to measure both the achievement gains of the students and student attitudes toward both the curriculum and their confidence in mastering the curriculum. Content related pretest scores ranged from 53 to 77, while posttest scores ranged from 60 to 87. Additionally, every student reported increased confidence and feeling more proficient using the vocabulary they had now mastered. All students also reported that they enjoyed the blended learning model more than the traditional classroom model of lecturing (Katasila & Poonpon, 2022).

Ataizi and Aksak Kömür (2021) detailed a study of 11th graders who were learning English writing through a blended learning model. This study found a hugely positive outcome in students acquiring writing skills through this method (Ataizi & Aksak Kömür, 2021). Ninety-two percent of the students participating in this study had not used the blended learning method before; the fact that they made such gains in content with so little background in the methodology was very encouraging. Overall, students most liked the flexibility, their ability to control when they moved to new content, and they found the writing activities to be more enjoyable using this method. Both student attitudes toward the content and their actual

knowledge acquisition were found to be very positively affected in this study (Ataizi & Aksak Kömür, 2021).

Student responses about blended learning, in a study by Vine et al. (2016), was largely positive, especially in how they perceived knowledge acquisition. Seventy-seven percent of students felt as though they learned more through this method (Vine et al., 2016). However, when it came to feeling satisfied with the course, this fell to about 47% positive and another 37% neutral, with the remaining 14% disliking the format. Some students in general appeared to be neutral about this intervention, but their grades, knowledge, and confidence all increased during the study (Vine et al., 2016).

Elements of an Effective Blended Learning Model

Şengel, E. & Aktaş (2022) focused on inquiry-based learning and felt that the three most important elements of a blended learning model are social presence, teaching presence, and cognitive presence. In other words, students felt connected to teachers, peers, and the content. Affirming these results, a two-part study looked at two different models of blended learning in the mastering of a STEM curriculum (Bazelais et al., 2022). The results of this study were interesting as they may account for why many other studies have had such mixed results about blended learning. In the first part of the study a new instructional framework was implemented along with the implementation of blended learning. Test scores went up under this condition in comparison with a control group. In part two, blended learning was implemented without a specific instructional framework, and the test scores were the same as the control group (Bazelais et al., 2022). The results really pointed out that the model of blended learning makes a tremendous difference in outcomes for students. It should be noted that in both blended learning groups, students reported enjoying the courses more and feeling more confident about their abilities with the curriculum. The instructional framework specifically implemented two-stage quizzes into the curriculum, students were given short 10–12-minute quizzes followed by 10 minutes of peer feedback and discussion. Students' performances under this study condition

had significantly higher test scores than the second blended group and both control groups (Bazelais et al., 2022). It would seem that the quizzes, peer feedback, and discussion may have helped students feel connected to not just the content, but also their teachers and peers. Simply employing any system of blended learning does not necessarily lead to success, other elements must also be present (Gault & Cuevas, 2022).

In a dissertation examining the implementation of the Modern Classroom model of blended learning, both test scores and student reports of their feelings about learning were examined in a group of 9th grade students in ELA classes (Dunn, 2023). The Modern Classroom Methodology, as delineated by the Modern Classroom Project (Wolf et al., 2020), is a blended learning and mastery learning model, where students do not move to new material until the current content has been mastered, as measured by an independent project or exit ticket. Teacher lectures were eliminated in this model and replaced with short videos. Surveys were administered at the beginning and mid-point of the school year. Self-expressed student responses indicated generally feeling less anxiety and greater positive classroom behavioral outcomes after implementing the Modern Classroom model. They also noted feeling as though technology was being used to students' advantage, students had time to complete their classwork, and teachers had an easier time with lesson planning. Teachers also felt greater growth professionally over the course of the first semester. Students reported greater resiliency and higher frustration tolerance with difficult content, felt more engaged, and felt appropriately challenged. When students were asked if they wanted to take more courses taught with the Modern Classroom methodology, 84% stated that they preferred this model, 10% stating they would like a more hybrid approach, and 6% wanted to go back to a traditional classroom model (Dunn, 2023).

The Modern Classroom Project commissioned Johns Hopkins University (Wolf et al., 2020) to look at the same group of 281 9th grade ELA students and compared the results of honors and college prep students across several domains. In the case of content mastery as

measured by a summative exam, a significant difference between the Modern Classroom group and the control group was not noted. Of course, it is difficult to make significant gains if the students already have high scores. However, student engagement was found to be greater in both honors and CP students in the Modern Classroom model of learning. Students also reported more autonomy with new content. Additionally, Modern Classroom students had significantly more positive feelings about their teachers and their relationships with their teachers (Wolf et al., 2020).

Jung et al. (2022) summarized research on many models of schema-based instructional design, summarizing data from over 600 sources and drawing many conclusions about effective instructional designs for learning. The authors posited that current self-paced and online learning curricula focus on quality content but are ignoring how humans learn and how to engage the learner. When there is not a live instructor, the learner must be able to make meaningful connections to what they already know and must be able to grasp the new information without too high of a cognitive load (Jung et al., 2022). Using schema-based designs to automate, activate, and create hierarchies of current knowledge makes the new information graspable and more engaging to the learner. The study concluded that schema-based design is critical for self-paced learning. By guiding students in schema activation, the students are then able to draw conclusions and add new information to their current knowledge, as opposed to simply memorizing new information for the short term, and then forgetting this fragmented knowledge quickly after a test. This study suggested direct prior knowledge analysis before teaching new content (Jung et al., 2022).

Poleschuk et al. (2023) studied children of families that have either immigrated to Italy or are seeking asylum in Italy and must now learn the Italian language. This study analyzed some successful elements of self-paced learning for children trying to acquire Italian using self-paced learning. The first element was gamifying learning. For the in-class portion of the blended learning model, peers were often paired heterogeneously, where one peer could support

another peer's learning. One of the successes in this study was to use the remote learning to reinforce in class learning. Instead of starting with video learning, the video portion of the learning was in the middle of the blended learning model. This study found that students gained vocabulary faster, were more confident using the new vocabulary, and were overall more satisfied with learning in this manner. This model was most effective with the students that are most critical to reach including newcomers to the country and students with disabilities. Students were able to start learning right away at their own level, instead of wasting academic time in classes where they did not yet understand the language (Poleschuk et al., 2023).

Bautista (2015) looked at the academic results of 68 students in chemistry that used a self-paced learning model that emphasized teachers as facilitators while students directed their own learning. Students made their own plan of information acquisition and adjusted the plan as they went along with the help of the teacher/facilitator as needed. The students' acquisition of information and motivation to learn were both studied through pre and posttests and through questionnaires. The blended learning design in this study included videos as complementary and supplementary materials, peer-tutoring, teacher lectures, laboratory activities, and frequent check-ins and feedback from the teacher. This study also took into consideration the fact that children naturally learn socially and emphasized the acquisition of knowledge through others that knew more, such as peers, mentors, and teachers. Using these methods and blended learning, student motivation and confidence grew exponentially. Of note in this study however, the impact on lower ability students was not as great as that on higher ability students (Bautista, 2015).

In a study of a large group of 9th graders across eight schools in Thailand that compared blended learning to a control group, the blended learning group showed tremendous growth compared to the control group, and also showed secondary gains such as having more fun with the content when in school and greater autonomy in learning (Dehghanzadeh et al., 2019). The blended learning program included gamified elements such as leader boards, prizes, ranking,

tasks (missions), and points. The gamification was used to increase engagement and motivation in learning the new content, and it was shown to be highly effective. Elements of learning were rebranded to be more appealing. In this study, tests were called "fighting monsters," writing papers was called "crafting," and presentation skills were now "quests." Gamifying elements of learning could be a very important element to add to a blended learning pedagogy (Dehghanzadeh et al., 2019).

Implementation Considerations

The importance of professional development and precourse training for teachers was noted across the literature. In a study by Şengel, E. and Aktaş (2022), inefficiency of a poorly applied model was warned against, noting that professional development must be specific (Şengel, E. & Aktaş, 2022). This study detailed elements that did, and did not, effect learner motivation. For instance, workload was not found to have any effect on learner motivation. Positive effects were found from teachers that had more experience with technology and teachers that had more positive beliefs about the efficacy of the method. This study confirmed once again that although students had a more positive experience with the blended learning course and felt more confident, their actual gain as far as knowledge or grades was either neutral or only slightly positively affected. The authors noted about academic gains in this study that exams were online and multiple choice only, which could have had a deleterious effect on the outcomes for some learners. This study did confirm the need to help teachers have a positive attitude about implementing blended learning (Şengel, E. & Aktaş, 2022).

Moore et al. (2017) outlined a four-course professional development opportunity that taught teachers how to use technology effectively in the classroom, while also using their in-person instruction more effectively in light of the introduction of the new model. The study emphasized the need for professional development to be active learning and not passive, and the authors carefully laid out the scope and sequence of their course for others to replicate. Teachers in this study also continued their opportunities for support through PLCs for the

remainder of the school year. The model aimed to not only teach the technology and new in-person teaching methods, but also change teacher attitudes toward blended learning. Course One introduced the tools, and then the next three courses were tailored to the teachers completing work for their classes in real time (Moore et al., 2017).

In another study with a different professional development model, four 9th grade teachers designed the online component of their classes after an 8-week professional development course in blended learning (Wayer et al., 2015). All four teachers taught in different areas and included a physical education class. The study showed that although all four teachers took the exact same professional development course, they enacted blended learning in extremely different ways and with very different results. This outcome emphasized that the professional development must be carefully targeted to a particular model for teachers to understand and implement the model and elements of that model correctly. The study concluded that if blended learning is done correctly, it clearly can increase student engagement and enhance learning (Wayer et al., 2015).

Possible Barriers to Success to Consider

Professional development focusing not just on the mechanics of blended learning, but on the model and elements of an effective blended learning environment and teacher attitudes toward blended learning, must be implemented for the intervention to be effective (Poleschuk et al., 2023). Other studies found that without specific professional development, teachers used differing methods of blended learning and were met with widely varying results (Mutya & Musuhay, 2023). However, other barriers also exist when it comes to implementing a large-scale blended learning program.

Yan et al. (2022), clearly laid out a number of barriers to learning using self-paced learning models and solutions to those barriers. One of the first barriers to self-paced education is the requirement of high self-regulation and high intrinsic motivation. This is key information in deciding how much of the learning should be remote. The other two barriers mentioned were a

lack of immediate feedback and a lack of proactive intervention. Immediate feedback, proactive intervention for struggling learners, and methods of helping students stay motivated, must be built into the design. Using schema design is one way to help with motivation while removing the cognitive load (Jung et al., 2022). Focus on mastery learning also will assist with the number of learners who will struggle by giving all students time to assimilate the content of one lesson before moving on to the next (Yan et al., 2022).

Barriers arise at every level of a school when implementing a new pedagogy including administrators, teachers, and support staff. In a study by Vine et al. (2016), some of the challenges that were encountered by teachers included: (a) Feeling there were time constraints, and teachers could not make the online modules that they wanted, they felt student grades suffered, and they felt their courses might become generic (Vine et al., 2016). (b) Teachers also perceived that some students felt their workload was increased. On the other hand, teachers also noted benefits: (a) Teachers felt they could spend more time with their students, individually and in small groups. (b) Teachers also noted that students came to the lessons with a level of knowledge from the video and this allowed their work to be deeper and more meaningful (Vine et al., 2016).

Conclusions

Engaging learners in today's world requires different tools and methods than education has previously employed. A significant number of students today are facing disruptions in their education, mental health challenges, housing and food insecurity, and high rates of absenteeism (Stockman, 2023). A standard paced curriculum is not designed to meet the needs of these learners, learners that may or may not be emotionally or physically present and ready to learn on a daily basis. Mastery-based blended learning with carefully included curriculum elements and meticulous staff professional development is a worthwhile method to explore to solve the intrinsic problems of reaching today's students.

Methodology

For a 4-week period from April 8 to May 8, 2024, I taught a high school math class using the Modern Classroom methodology, which is a self-paced, mastery-based, blended-learning model. Just before starting this action research project, I became certified in the Modern Classroom method. I wrote and implemented all of the content and collected data from:

1. Each student's final grade at the end of the 4-week study, or mastery data.

2. Attendance data, including missed classes and time out of class for bathroom or water passes.

3. Student engagement, as measured by the quantity of work completed and missing work.

4. Weekly Exit Ticket Questions (given on Fridays):

    a. Did you enjoy class this week?

    b. Was the work too easy, just right, too hard?

    c. Would you want to take more classes taught this way?

Intervention data were compared with two other discreet 4-week periods, one selected from each second and third quarter. Students' intervention data was compared with their own data from previous quarters to look for changes during the intervention phase.

Setting and Participants

This study was comprised of 10 students in their high school math class at an urban high school in Massachusetts. There were seven male and three female students in this class, all between the ages of 16 and 17. The regular classroom teacher, who is dual-certified in math and special education, was present during the duration of the study to support students as needed.

Data Collection Tools and Processes

Grades and work completion were logged in the school's normal grading software. Grades and attendance data were logged daily as applicable. Attendance was tracked both by

regular class attendance data, and by the electronic hall pass system the school customarily

uses, which logs students' passes including the amount of time they were out of class. These

metrics from the intervention period were compared with two other discreet time periods for the

same students. Additionally, students completed a weekly exit ticket to collect data about the

pacing and content of the class and student's feelings about the class.

<p align="center">**Results**</p>

Results are presented below in tables broken out by individual student, as well as

aggregate data presented for the group as a whole. Individual results and aggregate results

have been analyzed to determine the efficacy of the intervention. Survey results are also broken

out by both individual students and group metrics (see Tables 1–4).

Out of Class Data

The first metric I looked at was the time out of class. The "class cuts" columns represent

the number of times the student was in school, but did not attend class. The "out of class"

columns represent the percentage of time the student was out of class (including cuts) and

could be for reasons such as getting water or using the restroom (see Table 1). As can be seen

from data in Table 1, the number of class cuts fell from an average of 1.5 to an average of 0.4,

and the time out of class fell from 12.4% to 7.1%.

Table 1

Out of Class Data

Student	Q2 cuts	Q3 cuts	Q4 cuts	Q2 out of class	Q3 out of class	Q4 out of class
1	0	0	0	0	0	0
2	5	6	2	8%	7%	7%
3	9	7	2	40%	38%	28%
4	0	0	0	48%	42%	22%

Student	Q2 cuts	Q3 cuts	Q4 cuts	Q2 out of class	Q3 out of class	Q4 out of class
5	0	0	0	5%	4%	4%
6	0	0	0	0	0	0
7	1	1	0	14%	16%	7%
8	0	0	0	9%	8%	3%
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Aggregate	1.5	1.4	0.4	12.4%	11.5%	7.1%

Work Completion Rates

Work completion data are the percentage of work the student completed in reference to the amount of work assigned to the student (see Table 2). The amount of work completed increased slightly from the control data, from an average of 83.45 in Quarters 2 and 3 to 85.5 during the intervention period of the study.

Table 2

Completed Work

Student	Q2 % work completed	Q3 % work completed	Q4% work completed
1	98	96	95
2	100	92	95
3	71	66	80
4	68	80	78
5	92	96	95
6	68	65	75
7	65	65	75
8	82	77	75
9	98	96	95
10	98	96	95
Aggregate	84.0	82.9	85.5

Percentage of Mastery

The mastery data is based on the students' grade for the work they completed. This percentage only accounts for the grade the student received on completed work and does not include any "0" grades given for work not attempted (see Table 3). Mastery, or student grades, also climbed slightly, but moved out of the C range and into the B range. The overall average grade rose from 77.65 to 80.5 during the study. Four students had lower averages during the study (students 2, 5, 8, and 9), and six students had higher averages during the study (students 1, 3, 4, 6, 7, and 10).

Table 3

Mastery

Student	Q2 % Mastery	Q3 % Mastery	Q4 % Mastery
1	88	90	90
2	92	91	90
3	64	58	75
4	58	76	75
5	84	90	80
6	63	61	70
7	53	61	70
8	80	72	70
9	91	95	90
10	92	94	95
Aggregate	76.5	78.8	80.5

Student Survey Data

Survey data were collected at the end of each week of the project and was presented as an anonymous exit ticket. To be sure all students completed the survey, students showed the researcher their screen that said "survey submitted" before leaving class (see Table 4). By the end of the intervention period, 90% of students enjoyed the class and wanted to continue on with this system of teaching and learning, and 70% of students felt like the work was the right

level for them. Data indicated that in the first week, four of 10 students enjoyed the class, and during weeks three and four, nine of the 10 students enjoyed the class. Data also indicated that each week more students felt the work was just right for them (2, 5, 6, & 7). Nine of the 10 students indicated in weeks three and four that they would like to continue to work in this fashion.

Table 4

Student Ratings

Question	Week One		Week Two		Week Three		Week Four	
	Yes	No	Yes	No	Yes	No	Yes	No
Did you enjoy the way the class was run this week?	4	6	7	3	9	1	9	1
Would you want to continue to learn this way?	7	3	8	2	9	1	9	1

Question	Week One			Week Two			Week Three			Week Four		
	Too easy	Just right	Too hard	Too easy	Just right	Too hard	Too easy	Just right	Too hard	Too easy	Just right	Too hard
How was the work?	0	2	8	1	5	4	0	6	4	1	7	2

Discussion

Our urban district is currently facing a student attendance and content mastery crisis. Many different attempts have been made to reengage students, including offering incentives for attendance, hiring a team of reengagement specialists specifically for the purpose of going to student homes and trying to reengage them, and even employing punitive actions, such as the

loss of the privilege of attending the prom or other activities if absences were too high. None of these interventions have solved the problem. Research data indicate that the system used in this study may be one way to reengage students through making their learning more accessible, self-paced, and mastery-based. I have come to believe, if students can return from an absence knowing they can get right back on track in all their classes without penalty or embarrassment, they are far more likely to reengage. Once they are reengaged, if school is generally more enjoyable, and less daunting or frightening, students are more likely to then remain engaged.

The results of this study showed that the amount of time out of class was greatly reduced. In just 4 weeks it fell from 12% to 7%, and the students that missed the most class before employing mastery-based learning, increased their class attendance by nearly 50%. Not only did students attend class more regularly, but they completed more work and received higher grades, although by a small margin. One could extrapolate that with more time with this method, likely the statistics would improve further since when students are in class more often, they are going to complete more work and therefore master more work. By the fourth week of the study, 90% of the students in class felt the work was at the right level for them, as opposed to just 20% at the beginning of the study. Students also reported enjoying class more, with 90% reporting that they would enjoy taking more classes employing this method.

Limitations

Some of the findings could possibly be skewed for a couple of reasons. First of all, I am a new teacher to these students. To get more precise results would have required their regular teacher carrying out the new teaching method. Being an entirely different teacher, some of my results could be affected by my relationship status with this group of students. Secondly, my method of classroom management is different than that of other teachers. All teachers have their own style of management, and this might affect the results of any teaching system in a positive or negative way, depending on the students. A third factor is that this system employed project-based learning as opposed to the worksheets and paper and pencil assessments the

students were previously using. Therefore, the actual work used to compare the mastery and work completion data were not precisely comparable. Finally, the study was conducted over a short time period of 4 weeks with a small sample size of 10 students that were all the same age. More time and a larger sample size would be required to get valid data across our entire school population.

Conclusions and Recommendations

Even considering the limitations for this study, the system definitely proved itself to either maintain or improve students' ability to complete and master work. The statistics for how much students enjoyed the class, felt confident in their ability to successfully complete the work, and their attendance data, improved dramatically. Therefore, this system of teaching would be well worth a much larger trial in classes of different content areas with students of differing ages, academic abilities, and behavioral abilities. This system appears to be a promising intervention to the attendance crisis our school is currently facing.

This study showcased that self-paced, mastery-based learning has great potential to help solve the attendance crisis in our district. Further research across content with students of varying ages and abilities is warranted to prove the efficacy of the system and make an educated decision about a full district roll-out of this type of teaching and learning. There would be significant cost in the form of not only money, but in the investment of time from every level of the district to make mastery-based learning a reality. The next logical step I would recommend would be to offer professional development options to any interested staff to learn how to employ this method in their classroom and then give these staff members simple tools to take data about the successes and failures they and their students experienced. These staff members could then go on to be the leaders in a system-wide change should these data prove that this would be advantageous for our district.

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