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Vesta Watkins

Northwestern College - Orange City

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The Effects of Goal Setting and Data Tracking on Student Performance

Vesta Watkins

Northwestern College

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Dr. Sara Waring-Tiedeman

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Abstract

The purpose of this action research project was to determine if student goal setting and data tracking would have an effect on student achievement. Data was collected over a twelve-week period in a first-grade classroom. Fourteen students took part in the action research. Students were assessed using the FAST weekly progress monitoring assessment. Quantitative data was collected weekly throughout three data collection periods, including baseline data, individual data and whole group data. Each data collection period was four weeks long. Students were asked to set a new goal each week and track their weekly scores to look for progress.

Effects of Data Tracking and Goal Setting on Student Achievement

Student achievement has always been at the forefront of education, particularly in secondary schools. With the rise of testing practices in the last two decades, student achievement has become a more prevalent topic in elementary schools as well. Educators and administrators are constantly chasing proficiency in state testing scores. Many school districts diligently track data each year continuously seeking ways to improve test scores. These scores are used to compare schools and districts, often pitting educators against one another rather than motivating educators for the right reasons. Test scores often force schools to focus on failure in an attempt to improve the next year's scores instead of celebrating student success. (Solley, 2007). Because of this, it is necessary for educators to begin to focus on student achievement. Teachers have been tracking student data and setting personal goals for years. Some school districts offer incentives to teachers and schools who are able to reach their goals by the end of the school year. Though these incentives offer extrinsic motivation, it is even more important to be intrinsically motivated. More recently, many educators have begun moving toward teaching students what being intrinsically motivated means.

Motivating students intrinsically is the ultimate goal. "The use of standardized testing, along with the resultant system of extrinsic rewards and consequences has had a negative effect on students' motivation. As a result, students' fear of failure has lessened their motivation to learn" (Solley, 2007, p. 34). The hope is that teaching students to set goals for their own education will show students that growth is a realistic possibility. Rather than teaching students to reach for extrinsic rewards, like higher test scores, educators now desire to teach students how to motivate themselves toward personal growth. Teachers desire to help students base motivation not necessarily on attaining a particular score on a particular test, but practicing habits that prove

to themselves that they can start wherever they are, proficient at grade level or not, make a plan to grow and follow steps to reach a specific goal.

Because testing is not going away, teachers must learn how to use assessment to support student achievement. One way for students to efficiently set goals and work toward achieving them could be to track their own data. While much research exists on the effects of data tracking for teachers and whether or not it can improve student achievement, it appears that the effects of students tracking their own data is not as widely known. Although goal setting is becoming more common in classrooms, combining data tracking with goal setting could help students as they create their personal plans and steps toward reaching that goal. Data from assessments that inform instruction and make student strengths the focal point help students and teachers set goals with a realistic understanding of possible achievement rather than a single fail point reference (Solley, 2007).

Goal setting, data tracking and student motivation can look different depending on the classroom, school or district as well as student learning styles and needs. It is clear that students need to be aware of the importance of receiving an education. Teaching students to take ownership of their learning can have a positive impact on academic growth; however, there are many factors that can affect this either negatively or positively including academic ability, developmental appropriateness, socio-economic status, parental involvement and learning style. In a classroom with a diverse population in all of these areas the guiding question for this research project is, will the implementation of individual and whole class goal setting and data tracking increase students' scores on the FAST Progress Monitoring weekly assessment?

Review of the Literature

Keeping students engaged in learning is quickly becoming an increasingly difficult task. Many children spend evenings using technology rather than doing homework, reading or even spending quality time engaged in conversations. Video games and television programs are available at the drop of a hat and delayed gratification seems to be outdated. What this translates to in schools is students who lack the patience it takes to not only learn a new skill or strategy but to master that skill or strategy. Students need to take ownership in their education and to have an intrinsic desire to set and achieve goals. Current research shows that there are many factors that can have an effect on student growth and achievement; however, setting goals and tracking data is one way for students to take an active role in their learning and to improve their academic achievement.

Goal Setting

Goal setting is becoming more and more prevalent in elementary school classrooms around the country. Data tracking and goal setting is something educators have been doing for many years within a classroom, a school, or even a district setting. Teachers often meet in Professional Learning Communities to discuss data and how it relates to student growth and achievement. The benefit of their work is visible gains in test scores and mastery of standards. Many teachers are now realizing the effect it can have on students' performance when students take time to set their own goals and track their own data. According to research done by Robert J. Marzano (2009), "On average, the practice of having students track their own progress was associated with a 32 percentile point gain in their achievement" (p. 86). Giving students the opportunity to see and analyze their own data makes the learning experience more personal.

It is clear that this strategy is something teachers should be doing with their students. Beyond what the research shows us we can look at students' natural desire to achieve. Whether it be in video games or sports, most students have an intrinsic desire to reach goals even if they do not naturally realize it. Most students seek opportunities for achievement outside of school on a regular basis, the teacher's job is to transfer that desire to achieve learning within the classroom. Dr. Martha Elin Mountain (1998) calls these *nudgings* and states, "Guiding our students to respond in meaningful ways to these intrinsic nudgings -- these special pursuits and potential gifts to society -- is at the core of education" (p. 1).

There are many different approaches an educator can when teaching goal setting to students. One popular way and a simple place to start would be giving students "I can" statements. Many teachers take grade-level standards, that is, guidelines for what students are required to know, and turn them into student-friendly statements. This allows students to be aware of their growth as they master each "I can" statement. Aymett and Krahenbuhl (2016) shared strategies for teaching goal setting. They stated that teachers should, "help students understand where they are in the learning process by explaining what skills they have mastered and then using that information to help them create a goal for future learning" (p. 1). To achieve this a teacher can break an "I can" statement down even further into the steps a student would need to take in order to reach the goal. This is something that can help students stay focused on their learning target. As teachers assist students in setting goals and planning action steps there are four basic skills that come into play. According to Dr. Mountain (1998), students should expect to set goals using the following four steps: first, reflect and make judgements; second, focus on strengths, priorities, and resources; third, organize thoughts, time, and resources; and fourth identify and deal with consequences, solve problems, and anticipate obstacles. Using these

strategies will help students and teachers become more efficient in their goal setting and focused? on the path to reaching the goal.

Goal setting and goal achievement influence learning and generate motivation to learn in two important ways: first, by providing a learning target that students can see and understand; and second by helping students gather information about how they are doing in pursuit of that target. (Moss & Brookhart, 2009, p. 61)

Another style of goal setting is using Wildly Important Goals (WIGs). These are high-priority goals that if not achieved will cause great frustration. There are also Pretty Important Goals (PIGs) (Covey, Covey, Summers, & Hatch, 2014, p. 102). Once you have set a WIG or PIG you should focus on planning a specific set of action steps that will help you achieve the goal. Action steps are similar to the steps taken to reach an “I can” statement, but they can also be more complex. Whereas “I can” statement steps show what needs to be achieved to master the learning target, action steps for a WIG or PIG can involve mindset changes and possible obstacles. “Action steps involve determining the specific tasks that need to be done, the resources that will be required, and the barriers that need to be overcome to achieve the goal” (Covey et al., 2014, p. 103).

Whatever method an educator decides to use to help students set goals, another clear piece of this puzzle is feedback. Dr. Mountain (1998) stated, “It is clear that for students to meet goals in meaningful ways they need encouragement, examples, guided experiences, and appropriate tools” (p. 4). Teachers should be ready to help students not only to set goals and create a plan for achieving them but also to offer them guidance along the way. Feedback helps students obtain a clear picture of any pieces they may be missing. “As students better understand

where they are in relation to the learning target and take next steps, their work improves” (Moss & Brookhart, 2009, p. 45).

Helpful feedback should be explicit, focused and clearly related to the goal or assignment. There should be a clear connection between feedback from the teacher and a student’s pre-determined action steps. Questions and comments should be easy for students to understand. If feedback is not clear or becomes too complicated, students may be confused on how it relates to their goals and action steps. Feedback can also be provided by peer interactions. This is a form of feedback that can be useful for students but also requires a teaching component. Students will likely need to be instructed on how to give helpful and effective feedback.

Feedback should also be offered in a timely manner. As students utilize the four basic skills for goal setting mentioned above they will need feedback at the right time in order to complete those steps, particularly if a student is provided with feedback that requires problem solving or adjustments to their original plan. It may be necessary for students to reevaluate their action steps. Effective feedback also fosters motivation in students. “Students who see that improvement is something they can control -- because they understand what to do next -- are motivated to take those steps” (Moss & Brookhart, 2009, p. 46).

Feedback can also come in several different forms, such as metacognitive feedback or attributional feedback. Metacognitive feedback is asking questions related to the path to solving a problem. Whereas, attributional feedback is feedback related to the outcome of the problem. Studies have shown that students responded more positively to the metacognitive feedback (Dean, Hubbell, Pitler, & Stone, 2012). Similarly, in a study done by Hattie and Timperley (2007), two kinds of feedback were used: information feedback, or how to do a task more effectively, versus praise, rewards, and punishment. This study also showed that students favored

feedback related to the process of completing the task. Students showed appreciation for the opportunity to develop their skills further. Just like many adults, students learn more from feedback that is constructive. In order to change their understanding, student's need to hear more than just whether they did a good job or not. Effective feedback asks students to understand the goals they've set for themselves, think about what progress they have already made and determine the next steps in their action plan (Hattie and Timperley, 2007, p. 86).

Motivation

The ultimate goal is for students to feel ownership of their learning and education. Educators need to motivate students to learn and cultivate an intrinsic motivation. As previously stated, when students begin to realize that they are capable of setting and achieving goals, they become invested in their learning. Goal setting and providing feedback are two important pieces in the process of motivating students. Another beneficial strategy many educators are beginning to teach students is Growth Mindset. There are two kinds of mindsets. For students to find intrinsic motivation it is critical that they understand this distinction between fixed and growth mindset.

A fixed mindset is the belief that IQ is predetermined and static. In fixed mindset, the end task or the result is what matters most. On the other hand, a growth mindset is the belief that intelligence can grow with hard work and effort. People with growth mindsets understand the value in the process and the learning along the way. (Mandel, 2017, p. 8)

Students with a growth mindset often see struggles or challenges as an opportunity for growth. This tends to be an easier concept for students who fall in the on or above grade level category in relation to standards. In contrast, students who have lagging academic skills or exhibit negative behaviors often gravitate toward a fixed mindset. It may be from fear of failure

or a learned coping mechanism. Some studies have shown that targeting these students with education on mindset can help them develop a growth mindset and lead to higher achievement (Claro, Paunesku, & Dweck, 2016, pp. 8664).

Self-efficacy is another important factor when it comes to motivating students to set and achieve goals. "...a high self-efficacy level indicates an affirmative sense of self and an ability to remain committed to goal achievement" (Hojati & Abbasi, 2013, p. 70). Students will not succeed in growth or achievements if they do not believe that they can be successful. One way to foster self-efficacy in the classroom is by building a strong classroom community. Many students find great encouragement in seeing their peers make gains and in addition receiving praise for their own growth. Kyle Schwartz (2016), shared in his book, "My teaching philosophy is characterized by the belief that where a student starts does not dictate where they will end up" (p. 173). He explains how he encouraged one student, who had significant academic needs at the beginning of the year, by praising her efforts and growth, no matter how small. His goal was to show her that even the smallest of successes proved she had the ability to grow. Eventually, he showed the rest of the class a graph of the student's growth. He did not focus on the fact that she was still below grade level, instead he pointed out the significant progress the student had made over the year (Schwartz, 2016, p. 172). By doing this, he gave the student permission to feel good about what she had accomplished. He also modeled for the class how to encourage each other individually in their plans. Educators should not only show their belief in student's abilities, but should also encourage students to believe in themselves and in their potential. This can be a challenge, as students may not be aware of the reality of their abilities. "A key task for children is to gain accurate knowledge of their abilities, so that they can navigate the world effectively" (Brummelman & Thomaes, 2017, p. 1768). Interestingly, studies have shown that

most students, when comparing themselves to peers, see their abilities in a positive light, whether because they don't understand the consequence of social comparisons or because they understand that positive self-assessments are preferred (Brummelman & Thomaes, 2017). Nurturing this important sense of self-efficacy is one way to help students gain intrinsic motivation.

Data Tracking

Just as with goal setting, a teacher can take a few different approaches when it comes to data tracking. Most educators, at the directive of their building or districts, already collect and track data on students. School districts even have state and national level accountability. The benefits of data tracking for teachers can range from simple motivation to the ability to customize learning. Likewise, bringing data tracking to students can have a similar effect. "Some see it as a way to encourage students to exert extra effort; others believe that students who look at their own data gain a better understanding of their strengths, their weaknesses, and how to improve" (Farrell, Marsh, & Bertrand, 2015, p. 16). A study by Farrell, Marsh, and Bertrand (2015) was completed to understand how teachers used data with their students. What they found is that teachers used data tracking in three different ways: performance orientation, mastery orientation, or a combination of both. About one-third of the teachers in the study believed that students are motivated by competition. These teachers narrowed in on student performance going so far as to post names of students who were proficient or advanced. Another one-third of the teachers wanted students to be more engaged in their data (Farrell et al., 2015). They encouraged students to analyze their data and plan next steps. As mentioned previously, teachers who encourage this type of data tracking have students who are more likely to set goals related to data rather than just attempt to get a better score next time.

Not only does data tracking give students more insight into their progress, it also gives teachers a chance to customize learning for small groups as well as individual students. “The beauty of regular and frequent data collection is that it provides insight into how each student is developing over time, making it easier to adjust the curriculum to improve learning outcomes” (Tucker, 2015, p. 83). There are numerous methods for organizing and tracking data. Many teachers are turning to technology to assist them. Many free, educational websites offer leveling services by giving students a diagnostic assessment and continuing to track their growth or decline. Most of these provide graphs of some sort for teachers to document the data. These websites also tend to level up or down, essentially customizing the learning, based on performance. Using these online tools can get parents involved as well as they are typically able to access the websites and data at home. The information teachers get from these websites can be used as formative assessments. Though this is a helpful way to track data, in order to make it, truly beneficial it should also be coupled with feedback on how to improve. “Although collecting data through formative assessments is an important first step, it is also crucial that the information we collect makes sense to our students and motivates them to continually improve” (Tucker, 2015, p. 82). When teachers combine data collection and goal setting it can be very motivating for students. However, even when using the various strategies discussed above other factors may get in the way of students motivation and engagement.

Academic Ability

English language learners. The category of English language learners (ELLs) can be quite broad. From newcomer students who have recently moved to the United States to students who are native to the United States but speak a different language at home, or speak English at home with non-native parents. Add to this the vast array of languages, backgrounds, and educational needs and educators are presented with some complicated issues in the teaching of these students (National Council of Teachers of English, 2007, p. 2). While it may seem that motivation and engagement might be more difficult for these students, it is extremely important that schools and school districts have plans and priorities in place for meeting their educational needs. They should be given the same value as all other students and be treated as though they are fully capable of achieving the goals they set for themselves, as in fact they are (Russell & Von Esch, 2018, p. 56). Just as with native English speakers, ELLs range in phonics knowledge, vocabulary, fluency and comprehension is expansive. Teachers should be aware of the abilities of their individual ELLs and continue to practice the proven method of customized learning as they help these students set goals and understand what they need to do in order to accomplish their goals.

Special education. As does any population of students, special education covers a broad spectrum of needs including: learning disabilities, physical impairment, developmental delays and emotional behavior disorders. Some students may be categorized in more than one of these areas. This makes the best practice task of differentiating instruction even more necessary for teachers. It also means that teaching students with special needs the process of goal setting and data tracking needs to be differentiated as well. To ensure these students will also be successful, teachers should be aware of their varying abilities and how this affects their learning process.

Specific learning disabilities (SLD). Students with specific learning disabilities (SLD) face a variety of challenges from academic needs to social-emotional needs and functional skills. SLD is a lifelong condition that interferes with daily life, social abilities, time managements and much more (Hojati & Abbasi, 2013). Students with SLD often perform significantly below grade level. The disability can also cause a lag in development, which means that as their peers continue to grow, students with SLD get further and further behind (Hojati & Abbasi, 2013, p. 74). This problematic cycle effects students' motivation and inhibits their desire to stay engaged. A study done by Hojati & Abbasi (2013) showed that students with SLD had significantly lower levels of self-efficacy and hope. They also shared that there are factors that can help promote self-efficacy and resilience in students with SLD. "People who have personal characteristics such as persistence in the face of adversity, flexibility to pursue alternate strategies when appropriate, and self-awareness are at reduced risk for problems" (Hojati & Abbasi, 2013, p. 68). Therefore, it appears that when working with students with specific learning disabilities teachers should be aware that fostering intrinsic motivation might require extra effort. It will mean first helping these students to believe in themselves before they can fully understand the process of setting goals.

Emotional Behavior Disorder (EBD). Author Ross Greene (2008) argues, "kids do well if they can" (p. 10). The simple fact is that educators and administrators are often at a loss when it comes to students with EDB and because of this, they most commonly resort to motivation for good behavior using praise, rewards and incentives for desirable behaviors and punishment or withholding rewards and incentives for undesirable behaviors. Instead, we should be looking for what skills the student is not able to access. "Understanding why a kid is challenging is the first and most important part of helping him" (Greene, 2008, p. 11). A common misconception about

students with EBD is that they are not motivated to learn. Greene (2008) asserts that every child wants to do well and would choose to do well if they have the skills necessary (p. 13). Just as students with SLD feel defeated by school, students with EBD often experience similar feelings. Research has shown that many children figure out that knowingly or not, adults expect success and that failure leads to disapproval (Brummelman & Thomaes, 2017, p.1764). These student's ability to persist is lost in their academic struggle and their frustration exhibits itself in the form of negative behaviors. There are a variety of things teachers can do to help alleviate these negative attitudes and behaviors in students and to give them the tools they need to be successful. Giving students opportunities to succeed, making curriculum relevant to their lives, supporting positive peer relationships through classroom community, and teaching self-regulation strategies can help to bring about positive change in these students (Henley & Long, 2003, p. 1-2). The key to motivating students with EBD is recognizing that there is a reason behind everything they do and being willing to put in the effort to find out what that reason is.

Outside Factors

Poverty and lack of parental involvement are two more issues that can affect a student's need and motivation to set and achieve goals in their educational journey. Unfortunately, these factors are often out of the school's control. Research has shown that a student's home life greatly impacts their early readiness for school as well as the rest of their educational journey. Parents who are absent, distracted or inconsistent are often not able to support their child's education.

Studies have shown that living in poverty can negatively affect cognitive development (Ferguson, Bovaird, & Mueller, 2007). These students showed lower test scores and a lack of motivation. Approximately sixteen million children live below the federal poverty line

(Olszewski-Kuliluis & Corwith, 2017, p. 37). “The achievement gap between lower and higher income children is present at school entry and is stable and persistent as children progress through school” (Olszewski-Kuliluis & Corwith, 2017, p. 39). Several variables can impact the educational journey of a low income student. They may not have access to the same programs, sports or academic, as other students depending on the financial requirements. Basic needs such as food and sleep may not be met consistently if parents are out of work or working late hours. Oftentimes the level of stress in a low income household is at a heightened level and students may transfer this anxiety to school.

One of the ways educators can work to combat the effects of poverty is through early intervention. “Decreasing the risk factors in a child’s environment increases a child’s potential for development and educational attainment (Ferguson et. al., 2007, p. 703). Many school districts offer free or reduced preschool programs and some even provide home visits. Another strategy would be educating low-income parents on the value of the parent-child relationship and how it relates to schooling. Counties and school districts could also provide information to all local families on the skills and strategies kindergarten students should come to school with in order to be successful.

Research has also shown that socio-economic status can affect a student’s ability to access growth mindset. A study completed by Claro, Paunesku & Dweck (2016) looked at how students from low income families were able to use growth mindset to affect academic achievement. They compared these students with those from higher income families. They found that, as previously understood, there is a relationship between mindset and achievement. The findings showed that students from low income families were more likely to embrace a fixed mindset (p. 8666). Lower income students who did show a growth mindset had scores that were

comparable to higher income students with a fixed mindset. This finding "...suggested lower income magnifies the deleterious effects of a fixed mindset or, conversely, that a growth mindset may help mitigate the negative effects of economic deprivation on academic achievement" (Claro et. al., 2016, pp. 8666-8667). It seems even more imperative that these students should be engaging in goal setting.

The information presented above shows that goal setting and data tracking cannot and should not be a-one-size-fits-all means to motivating and engaging students. Teachers need to be educated on the different methods available to implement data tracking and goal setting in their classrooms. As we have seen, many factors play a role in whether or not a student feels competent enough to set goals and whether they have the confidence to believe they can achieve them. It is up to the teacher to decipher the needs of each student in relation to goal setting. In this way, both teachers and students can hope to find success.

Methods

Participants

This action research project was completed in a first-grade classroom in a suburban public school setting. The school population is approximately 400 students. There are four sections of first grade with each section consisting of around 20 students. The school is considered a transient setting based on the demographics, and therefore, the number of students in each section fluctuates throughout the year. The section of first grade where the action research took place consisted of 21 students at the beginning of the school year. Fourteen students took part in the action research project. Over the course of the research period, ten other students were excluded from the research based on a variety of factors including refusal to test, enrollment in a center-based program, new enrollment after the research started or relocated to another school after the research began. As shown in Table 1, of the students who did participate a range of abilities and needs was represented.

Table 1

Student Academic Needs

Individualized Education Plans	English Language Learners	Supplemental Programs	Talent Development	No Extra Support
2	3	4	3	2

As shown in Table 2 students’ race is evenly distributed and typical of the school-wide demographics. Socio-economic status is not trackable as the data needed to analyze this is confidential; however, it appears to lean toward a majority of low-income students based on addresses and student needs.

Table 2

Student Race

Caucasian	Black or African American	Asian	Hispanic or Latino	Two or More Races
4	4	1	2	3

Gender division is not a contributing factor, as 50% of the students were female and 50% male. This action research was not subject to IRB approval; therefore parents and students were not informed that the research was taking place.

Data Collection

The research was spread over a period of 20 weeks beginning the week of October 7, 2018 and ending the week of February 17, 2019. Data was collected consistently during 12 of those weeks. No data was collected during eight of the weeks due to scheduled school breaks and snow days. Baseline data was collected over the first four weeks of the action research. Students were tested once a week using the FAST Bridge weekly progress monitoring assessment. All students were pulled out of independent work time to complete the one-minute assessment. Students were not informed of the baseline data collection. Beginning with the fifth week of data collection students were told that they would be tracking their own assessment data and setting new goals each week based on the number of nonsense words read correctly. Students were

presented with a bar graph, colored pencils, and a goal-setting page. The bar graph and goal setting pages were kept in a folder for each individual student. The hypothesis was that students' data would increase each week based on goal setting and motivation to improve.

On the fifth week, after students completed the one-minute progress monitoring assessment, the teacher showed them the bar graph and explained what they would be doing each week. Students chose a colored pencil and filled in the first column of the bar graph indicating how many nonsense words they read correctly in the one-minute period. Next, the teacher presented a visual representing SMART goals and explained what a SMART goal is (specific, measurable, attainable, realistic, and time-bound). Students were then encouraged to set a goal for the following week based on the SMART goal criteria. Once students chose a number they hoped to read correctly the following week they were told to choose a skill they would work on in order to achieve their new goal. The teacher provided three options and presented a visual for students to copy. Students chose between working on CVC (consonant, vowel, consonant) words, practicing reading fluency, and practicing letter sounds. If students were unsure, which skill to choose the teacher made suggestions based on known areas of academic need. Students were offered a variety of independent and small group activities throughout the week to support the practicing of these skills.

Beginning in the ninth week of the research students stopped tracking their individual data and began tracking as a whole class. After each one-minute assessment students were shown the number of words read correctly and were then given three types of colored squares. One color represented ten words, a different color represented five words, and a third color represented one word. Based on their total number of words read correctly students filled out the squares. The teacher attached the squares to the data collection bulletin board. No names were

used on the board. During calendar math time the day after the assessment was given all students came together and counted the number of fives and ones, then exchanged them for the squares representing ten words. The class began with a goal of 1,000 words read correctly. At the end of the data collection period the class had reached 841 words read correctly.

Findings

Data Analysis

The researcher in this study was also the teacher of the students. The researcher kept track of all data and administered all assessments in order to keep the data valid and reliable. Data collected was quantitative. The researcher believed that using goal setting and data tracking would increase students' scores; however, there was minimal bias because the same assessments were used for all students regardless of perceived ability. All supplemental materials were identical for each student and the approximate amount of time spent with each student was the same each week.

Table 3

Scores and Growth Rate for Students on FAST Progress Monitoring Weekly Assessments

Students	Baseline Data			Individual Data Collection			Whole Group Data Collection			Growth Rate from first to last data point
	W1	W4	Growth Rate	W5	W8	Growth Rate	W9	W12	Growth Rate	
S1	2	5	150.0%	3	5	67.0%	3	3	0.0%	50.0%
S2	31	37	19.4%	40	44	10.0%	45	49	8.9%	58.0%
S3	50	47	-6.0%	46	56	24.4%	45	49	8.9%	-2.0%
S4	22	19	-13.6%	36	24	-33.3%	14	15	7.1%	-31.8%
S5	13	13	0.0%	17	16	-6.0%	17	20	18.0%	53.9%
S6	5	7	40.0%	9	13	44.0%	7	12	71.0%	140.0%
S7	15	24	60.0%	16	21	31.3%	23	20	-13.0%	33.0%
S8	11	10	-9.0%	10	15	50.0%	16	21	31.0%	90.9%
S9	12	16	33.0%	8	8	0.0%	12	14	17.0%	16.7%
S10	2	2	0.0%	5	6	20.0%	2	4	100.0%	100.0%
S11	2	2	0.0%	4	7	75.0%	5	3	-40.0%	50.0%
S12	5	4	-20.0%	8	15	89.0%	15	17	13.0%	240.0%

Students	Baseline Data			Individual Data Collection			Whole Group Data Collection			
	W1	W4	Growth Rate	W5	W8	Growth Rate	W9	W12	Growth Rate	Growth Rate from first to last data point
S13	20	19	-5.0%	20	18	-10.0%	17	30	76.0%	50.0%
S14	8	9	13.0%	8	13	63.0%	9	13	44.0%	62.5%
Average Score	14	15		16	19		16	19		
Average Growth Rate			18.7%			30.3%			24.4%	65.1%

Table 3 shows the first and last score for all 14 students in each of the three data collection periods. It also shows the growth rate for each of those periods and the growth rate from the first data point to the last data point. In addition, the table shows the average scores and average growth for each period as well as the average growth rate from the beginning of the data collection to the end.

In analyzing the data in Table 3, the results show that the highest average growth rate took place during the individual data collection period. Only three students saw no growth or had a negative growth rate in that time frame. Similarly, in the whole group data collection period only three students saw no growth or had a negative growth rate. In contrast, during the baseline

data collection period seven students saw no growth or had a negative growth rate. When looking at growth, Table 3 shows that only two students had a growth rate of 50% or more during the baseline data collection period. Three students showed a growth rate of 50% or more during the whole group data collection period while five students showed this same growth rate during the individual data collection period. Average scores for the individual data collection and whole group data collection periods were identical. The average scores for baseline data were not significantly lower.

The data in Table 3 also shows a few outliers among the 14 students. S4 showed negative growth in both the baseline data and individual data collection periods and a negative growth rate overall. In addition, this student's score during the whole group data collection period only increased by one point. A second outlier is S6 who showed an increase in growth rate spanning each data collection period. Only one other student showed an increase spanning each data collection period. S6 had the second highest growth rate increase from the first to last data point exceeding 100%. S12 had the highest growth rate from the first to late data point exceeding a 200% growth rate. This is interesting considering S6 showed the lowest growth rate during the baseline data at -20% followed by the highest growth rate during the individual data collection period at 89%. S6's growth rate during the whole group data collection period was below average.

Table 4

Growth Rate of Student Groups

Students	Baseline Data			Individual Data			Whole Group Data			Growth Rate from first to last Data Point
	W1	W4	Growth Rate	W5	W8	Growth Rate	W9	W12	Growth Rate	
SpEd	2.0	2.0	0.0%	4.5	6.5	44.0%	3.5	3.5	0.0%	75.0%
ELL	6.0	6.3	5.0%	7.0	11.6	65.7%	11	13.7	20.6%	127.7%
Title I	12.0	15.5	29.2%	12.3	14.5	18.4%	15.3	16.8	9.8%	39.6%
TD	18.7	21.0	12.5%	23.0	25.0	8.7%	23.0	30.3	31.9%	62.5%
No Support	36.0	33.0	-8.3%	41.0	40.0	-2.4%	29.5	27.0	-8.5%	-25.0%

Table 4 shows the average scores for each of the five student groups during all three data collection periods and the growth rate based on those scores. It also shows the growth rate from the first to last data points. The student groups include students on an IEP (Special Ed), English language learners (ELL), students in supplemental programs groups (Title 1), students in the Talent Development program (TD), and students who received no extra support.

The data results in Table 4 show that students in the ELL program showed the highest growth rate overall as well as the highest rate during the individual data collection period. The students in Special Education showed the second highest growth rate overall. Although there was no growth during the baseline data collection period or the whole group data collection period, they showed significant growth during the individual data collection period. In contrast, students in the Talent Development program showed the most growth during the whole group data collection period and Title 1 students showed the most growth during the baseline data collection period. Students who received no extra support showed negative growth during each data collection period and a growth rate of -25% overall.

Discussion

Summary of Major Findings

Based on the data collected during this research it cannot be concluded which form of data collection makes a greater impact. While the average rate of growth was the highest during the individual data collection period, the growth rate during the whole group period was not significantly lower. In addition, the average score at the end of the two data collection periods was identical. The number of students showing the greatest growth during each of the data collection periods was also identical. The number of students showing the lowest amount of growth during each period was similar as well. This indicates that growth due to data tracking and goal setting may depend on a student's learning style and motivational needs. It is clear, however, that goal setting and data tracking does make an impact. The majority of students showed the lowest amount of growth during the baseline data collection period when students were neither setting goals nor tracking data. The baseline data collection period also had the greatest occurrence of negative or non-existent growth.

Limitations of the Study

The limitations in this study include maturity of students. While the first grade students were excited about coloring in their bar graphs and collecting squares on the bulletin board they may not have fully understood what data tracking means. They also have limited experience with goal setting at such a young age, especially considering this research began at the start of the school year.

Another limitation is that the words used on the progress monitoring assessment were different each week. Some words may have been inherently more difficult for certain students or groups of students based on outside factors. Although the test was administered at approximately the same time each week, students might also have been affected by varying noise level and activity in the classroom during testing.

Further Study

It is obvious that data tracking and goal setting were successful in effecting student achievement. Further study could be done on the effects if goal setting was specifically taught in the classroom before beginning the data tracking process. In this study, the researcher gave each student an overview of SMART goals, but did not delve deeper into the reasoning behind goal setting. It may also be beneficial to teach students more about creating an action plan when setting goals. The researcher in this study gave students three brief options for an action plan based on the maturity level and academic needs of the students. A deeper understanding of the purpose behind creating an action plan may help students feel more confident in their abilities to set and attain a particular goal.

It may also be helpful to take a closer look at the individual student groups. The data collected indicates that individual data collection and goal setting may be most beneficial to students in the special education program as well as ELLs. Both of these groups showed significant growth during the individual data collection period. Historically these student groups need extra support and the individual data collection and goal setting offers them more one on one time with the teacher. Talent Development students showed the most growth during the whole group data collection. These students often work together in small groups on collaborative activities and therefore they may be more motivated when working as a team to reach a goal. Further study could be done on the motivation factors for each student group. It may be helpful to take qualitative data on students' thought processes throughout each data collection period.

Conclusion

The findings gathered from the collected data in this action research project show that goal setting and data tracking does have a positive effect on students' weekly progress monitoring scores for the FAST assessment. The quantitative data shows that tracking scores and setting goals was beneficial for students and did, in many cases, increase scores from beginning to the end of the data collection period. This is consistent with previous research showing that goal setting and data tracking done by students can help students achieve higher scores in the long run. This particular study also looked at the difference between setting personal goals and tracking personalized data versus setting goals and tracking data as a whole class. Based on data collected by the researcher there does not appear to be a clear line of success between personal and whole class goal setting and data tracking. The number of students successful in raising their scores was similar in both data collection periods and the average rate of growth was comparable for both data collection periods. Though arguments can be made for both forms of goal setting

and data tracking, it is clear that implementing either of these strategies will benefit students. This research is particularly important as students are exposed to testing more frequently and expected to show growth. This is how many educators track and acknowledge success. Giving students the opportunity to set their own goals allows them to own their education and understand the process of learning. Although tracking their own data has the potential for turning them into just a number, combining it with goal setting helps students and educators see the importance of the standards and the important path they take each year from the beginning to the end of each grade level.

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