3rd Graders Deep Dive into Their Data In Our Standards Based Grading Classroom

By Mona Iehl

School Context

Polaris Charter Academy is an Expeditionary Learning School located on Chicago's west side in the Humboldt Park Neighborhood. Polaris, although a charter school, is a Chicago Public School servicing Kindergarten through 8th grade. The majority of students at Polaris are neighborhood students. 90% of students are African American, 8.9% Hispanic, and 1% multi racial. The student population is comprised of 92.7% low income. Also 12.6% of our students have disabilities. There are two grades per grade level with no more than 25 students per classroom. Polaris started with a multi-age classroom structure, however after 3 years we switched to a looping structure. Grades 5 through 8th are departmentalized. Students have one hour for lunch and recess and one hour of a special class (drama, art, music, technology, physical education) each day.

Three teachers, Tracey Kwock, Michelle Navarre, and Roel Vivit, founded Polaris Charter Academy after an idea, conceived on their Golden Apple sabbatical, grew into reality in 2007. Michelle and Roel continue to lead the school as the Head of School and Director of Curriculum, respectively. In the planning stages of Polaris the founders located the Expeditionary Learning professional network. They found that the organization's philosophy for teaching and learning aligned neatly to their vision for Polaris and a natural partnership was formed. The organization provides teachers a nationwide network of resources, schools and a National Conference as support. Polaris sends their teachers to the National Conference in their first year at

the school. Many teachers, including myself, have presented at the National Conference. In 2013 Polaris Charter Academy was award the mentor school status, a distinction noting the school as a mentor of the Expeditionary Learning core practices. As a mentor school, one requirement is that we host a site seminar (a two day, school based professional development for 40 to 70 people).

Expeditionary Learning's core practice is learning by doing. Our approach balances the demands of curriculum equally along side character education. Culture and character development are a primary focus at Polaris Charter Academy. Expeditionary Learning engages students in long-term integrated units of study centered around key science and social studies content, driven by guiding questions and aligned to standards. Every expedition strives to teach students the value of service through final products that live outside of the classroom and school community. Students are immersed in the field of study through engaging with experts and through repeated fieldwork.

In addition to learning by doing, Polaris Charter Academy's mission is to ensure we develop explorers of the world. Each year, starting in 2nd grade, we take students on an overnight camping trip. This experience builds confidence and independence through pushing kids outside of their comfort zone. As we prepare students to be ready for what the world has to offer we work to make sure they have a variety of experiences. When students venture off to college and meet their roommate who is from southern Illinois and lived on a dairy farm, we want our Polaris graduate to be able to relate by remembering their overnight trip in 2nd grade to a farm.

Standardized tests are not part of how Polaris Charter Academy defines our success. As I previously mentioned, much of our focus is on character development along with real-world learning. That means we do little to no test prep or practice. The latest data about Polaris (from 2013) shows a significant dip in performance. After some evaluation we have decided that this dip in the data is for many reasons: potential errors in the test, teacher turn over in 2013, struggling teachers in 2013, lack of test taking skills and students lack technology usage skills. Given the results, students are now using two math programs to increase their technology literacy as well as build basic skills.

Polaris is a place where teachers enjoy working. Although there is no union, teachers feel represented and the administration welcomes input from teachers. We are welcome to discuss issues and feel that the administration has our best interest in mind when making decisions. Polaris truly makes decisions that are right for kids, making it a positive place to work. However, every year we often tackle many new initiatives. In turn, teachers often feel that they can't be successful at their job given all the new initiatives. This year we are working on developing our assessment practices in the classroom in order to improve our Standards Based Grading practices. In addition, we are working to use the data from assessments to differentiate instruction. We are also working on developing strong classroom cultures throughout the day. These initiatives, although stated simply, are complex and involved.

The school day is very long, starting at 7:50am until dismissal at 4pm. Students are able to come for breakfast at 7:20am. We do offer an afterschool program, however few students participate in the program. As a school we have a

strong drama program, with a fall and spring performance each year. Last year we started our school band with the hope of expanding it after we received a large donation of instruments. Last year a parent started an afterschool boys basketball club that plays other neighborhood schools. In the past we have also held girls and boys running clubs and a bike club. However, those programs have not been active in the last year. Parent involvement is an area of improvement for Polaris. After the long school day teachers are tired and are hesitant to lead a club or sport. In the initial vision for the school there was resistance to team sports, instead wanting students to challenge their personal best, rather than compete against others. More effort could be put into the afterschool engagement of both students and parents.

For the past two years my role at Polaris has been a 3rd grade teacher. Prior to that I taught 1st and 2nd multiage for two years and first grade for one year. I teach 25 students ranging in academic abilities. I utilize readers' workshop and writers' workshop for literacy instruction. Math instruction is centered on increasing student's conceptual understanding of math versus memorization of algorithms and rules. I also utilize a morning meeting structure that we call crew meeting. During this time I work to build students' understanding of our character points (integrity, compassion, active citizen, explorer, critical thinking). This is also a time that I build relationships with students and among students, cornerstone to my teaching practice. In addition, our reading and writing curriculum is integrated into our science and social studies expeditions.

Rationale

I am recently inspired by the work of Ron Berger's book Leaders of Their Own Learning. Ron Berger, Chief Program Officer for Expeditionary Learning, practices

detailed in the book are being adopted by my school. Engaging students with data is the chapter I see the biggest need for in my classroom at the moment, given that we recently (end of last year) adopted standards based grading (SBG). Standards based grading grades students based on the standards—the 2 main differences are academics and work habits are reported out separately and the grades are not averaged through the term—students are not penalized for not knowing something at the beginning of the term. Grades are determined based on learning target derived from standards. In a standards based grading classroom students are easily able to access their data and see what they know/ don't know (since grades are raw – not averaged). I'm interested in how students can use this data in order to set goals, reflect on the work they do and in turn the grades they get, and analyze trends they see in their data.

My students are very familiar with reflecting and setting goals because of the work we do in preparing for student led conference and portfolios. However, often these goals are shallow and the typical "get better at reading by learning my sight words" or "learn my math facts". I think reflection and goal setting could be more authentic and personalized if students have data/ evidence to reflect on.

Literature Review

Teachers are inundated with data in endless forms about their students, classroom, and school. Teachers spend hours analyzing and discussing data to inform their instructional choices and set goals for their students. The question arises how do we teach our students to use their data? Educators are faced with questions of how this practice lives in the classroom, how to use data to motivate students to learn, and develop a sense of working hard to achieve their goals.

Standards Based Grading

In effort to engage students with their data in authentic ways my school has adopted a new approach to grading students called standards based grading. Spencer (2012) says, “a standards-based report card contains an overall grade for each course but also indicates how well a student has mastered each of the class’s several standards” (p. 5). Spencer describes that behavior, attendance, homework are not factors in standards based grading, the only thing that matters is mastery of content. Non-academic elements are reported separately or minimally. Compared to traditional grading that is often based on vague criteria and do not put enough emphasis on reaching proficiency of standards (p. 5). Proulx, Spencer-May, Westerberg (2013) state that grades based on mastery are more accurate than traditional grades due to the exclusion of non content related grades, but also because of the grades on trend scores. This means that students’ grades are based more on the scores toward the end of instruction, instead of averaging grades taken from various points through out the instruction. This switch to standards based grading has allowed our staff to separate “Habits of Work” including homework, participation and preparedness from academic grades. I have noticed that some students with lower academic grades have very high work habit grades. This allows me to more clearly communicate to parents that the students’ area of improvement may be in a discreet skill in reading, however it is not due to off task behavior or lack of effort. Spencer (2012) quotes Porter Magee who says standards based grading “allows for a more nuanced conversation between parents and teachers about where students are strong, where they are weak, and how parents can help them” (p.6). Shippy, Washer, Perrin (2013) stated that parents have mentioned that standards based grading is more like workplace evaluations.

Standards Based Grading and Learning Targets

Learning targets are the method I use to link the standards to my lesson objective and in turn to my students learning. Berger and Woodfin (2014) describe that standards based grading allows teachers to track and hold students accountable for their learning targets. Berger and Woodfin describe learning targets as goals for lessons, units, or courses that are translated from standards. Learning targets help students understand what they are learning and why it is important. In addition, learning targets gives students a sense of purpose and provides a target to work toward, and in turn "giving them information on what they can do and what they need to work on" (p. 23) Proulx, Spencer-May, Westerberg (2012) agree that learning targets give students a clear goal based on standards and in turn give students on-going feedback on their achievement of the target (p.30). Shippy, Washer, Perrin (2013) say that when students are graded against clear standards they can see their progress over time. In turn students are motivated and encouraged to see their progress when they can see exactly what they have learned or still need to work on. The connection between grading students on clear learning targets aligned to standards and helping students interpret their performance is essential to my practice. Shippy, Washer, Perrin (2013) say that when instructional goals are clear a teacher can clearly see which standards are mastered and which need more work and can more easily differentiate instruction to meet the needs of each student. I agree, when I have clear information about what students know and don't know it makes it easier to create homogenous groups to address the lacking skill or concept. This differentiation of instruction is tailored to the students' need based on their

performance on learning targets linked to standards, allowing students to see the purpose of the lesson in the progression toward mastering the standard.

Using Standards Based Grading Data with Students

This practice has been written about much less than the intricacies of what standards based grading is and how to implement the practice. Berger and Woodfin (2014) write about using data with students and they say it is much more than just sharing test results with students and instead it needs to be an on going and integrated practice in the classroom. A practice "in which students are always collecting and analyzing information in order to improve" (p.97). This is the essence of my research. I agree that structures need to be integrated into the classroom to create a culture of gathering, analyzing, and using our own data. When students interact with their own data it "moves conversations about progress from abstract, generic goals to student-determined, targeted goals" (p. 98, Berger Woodfin).

Mindsets: Fixed and Growth

After recently reading the book Mindset by Carol Dweck I started to see some natural connections between the practice of standards based grading and my students' mindset.

> Dweck (2008) says that "research indicates that some students have a fixed mindset because they believe that their intelligence is simply a fixed trait. Students believe they have a certain amount, and there's nothing they can do to change it. Students with a growth mindset believe that their intelligence is a quality that can be developed… they do believe that everyone can increase their intelligence through effort and education" (p.56).

This research rings very true for my students. There are some students who work hard regardless of their ability level and are able to learn more. On the contrary, I have students who are discouraged and frustrated when they meet a set back or challenge. These students shut down and refuse to try, suggesting they feel they can't accomplish the challenge. My ultimate goal as an educator is to develop the skills in students that will make them problem solvers and resilient in the face of setbacks.

Growth Mindset and Using Data

How then do teachers help to facilitate a mindset shift in students with a fixed mindset? A handout from Expeditionary Learning, titled "Growth Mindset in a Data-Driven Culture" states that a growth mindset is the antidote to the blame and shame teachers feel when their students don't achieve. I have noticed in my own school that when teachers look at their students' achievement data they start defending themselves with excuses about "the test" or "the environment" or even "the standards". Expeditionary Learning points out that as teachers we must have a growth mindset, looking at challenges as an opportunity for our students. Sullivan (2011) notes that in a recent presentation Dweck shared that some teachers respond to students that faced a struggle by giving them an easier task and in turn communicated that students are entitled to an easy life with little effort required. This again raises the question of then, what should teachers do to shift students' mindsets? Dweck (2008) suggests it is not through praise.

> "by praising a child's intelligence or talent, they could be conveying to their child that intelligence or talent is something deep and permanent that can be judged and quantified- a fixed mindset. They could also be conveying that

> brains and talents are what they value the child for, so that children become afraid that if they are not successful, they won't be considered smart anymore and they won't be valued anymore" (p. 57).

Instead, research points to being honest about our areas of weakness and seeing those areas as an opportunity. Dweck (2008) says it is very important for all people to honestly consider their failures because there will always be failures even if proficient. This describes the culture in which we embrace mistakes I strive to develop in my classroom, accepting mistakes and using them as an opportunity to grow. Berger and Woodfin (2014) build on this idea by discussing the importance of creating group norms, then modeling and following up on the norms. This is something I have begun to implement in my classroom by talking about what we want our class to look like and feel like when we examine our data. When people are sharing their failures they need to feel safe and supported without the fear of being judged.

Research also suggests that teacher feedback is very important to developing a growth mindset. Dweck (2008) states that feedback should praise the process and emphasize effort, strategies, and perseverance rather than intelligence (p.57). Dweck (2007) states that sustained effort is important to doing anything worthwhile, so in turn we should not praise students for doing things quickly and easily. This type of feedback sends the message that low effort is a feature of intelligence. Instead, focus on effort and strategies and how their process allowed them to stay motivated even when difficulties arose. Aligned with this research, one phrase I plan to use with students that finish quickly and easily is, "Oh, I'm sorry I wasted your time with work that was too easy for you, let me find you something that will challenge you." This type of phrase implies that I value their learning time and that we learn

through challenges. This also implies that in our classroom effort and struggle are valued in learning, not getting finished quickly and right answers. This aligns to Lee (2009) who states that teachers help students understand that difficulties are temporary until they can find a way through them. This approach creates students who are self reliant, putting the student in the driver's seat. Teachers make it the learner's responsibility to find the answers, coaching them through their struggles, in turn, allowing students to own their learning.

Along with ownership of their learning students need to know what their strengths and growth areas are. This seems like a natural opportunity for students to analyze their data. Berger and Woodfin (2014) state that teaching students that intelligence is malleable they are then able to acknowledge that growth is possible and they can create goals based on their data. Dweck (2007) says that recent studies have shown that directly teaching students a growth mindset results in "motivation, better grades, and higher achievement test scores" (p. 9) Ryan Maxwell, Midwest Regional Director for Expeditionary Learning, told me in a recent personal interaction, "bring them into the research. Tell them Dr. Carol Dweck studied how kids' brains work. Tell them stories about kids like them that have growth and fixed mindsets. Then, give them opportunities to see that they can grow" (11/14). Teaching students about the research around mindsets and giving them an opportunity to make meaning of the research themselves poises them to lead their thinking and learning.

Research Questions and Sub Questions

What happens when I teach students to use their own data?

- How is engagement and motivation effected?

- How is students' mindset (attitudes toward learning) affected?
- What happens to the classroom community?
- What happens to students' academic achievement?

Implementation

I started by administering a survey finding out about what students knew about their data, goals, and mindset. I then started to implement practices that allowed students to reflect on their data. These practices infiltrated my classroom in all subject areas. However, I chose to focus my research on reading. The majority of my research was done between the end of Trimester 1 in preparation for student led conferences through the end of trimester 2 preparing for conferences.

The data was gathered as I introduced standards based grading and looking at the data to my students. I wanted students to understand the grading process and where their grades came from. I first worked with my colleagues to clearly lay out what standards we would teach in each subject area. We then prioritized the standards and decided which were long term and which were supporting the long term. After that, we wrote learning targets that reflected these standards. These learning targets (or commonly known as lesson objectives) are what we present to students before the lesson. We "unpack" the learning target which means we discuss what the students will be working to learn in the lesson. After the lesson there is an exit ticket or formative assessment given, when students finish they sort their papers into one of three colored bins (pink, orange, green). These bins correspond to our grades (1- not meeting, 2- developing, 3- meeting). Before students sorted their papers we talked about the meaning of each bin and students started to form phrases for the bins, for example "Pink means I'm really not getting it and I need more help." Or "Green means I understand and I think I got most of them

right." This was one way I helped students start to understand the meaning of their grades. Then, when the student got the paper back with a 1 they remembered it meant "I need more help" or "that was hard for me". This also opened up conversations for our class about our weaknesses and mistakes. In our morning meeting we talked daily about making mistakes, persevering when things get hard and grappling through hard tasks. These types of words became integral in our class. After we talked about each we posted a poster on the wall to refer to later in our discussions or written reflections. In addition, we started a morning journal where students could reflect on times they made mistakes or showed one of our traits. These traits started to become known as our habits of work, the habits we have that make sure we do our best work.

However none of this was possible without our strong classroom community that was established starting the first day of school. The classroom community was created through our predictable morning meetings, our group norms, and the relationships between students and teachers. The morning meeting started by greeting each other and was followed by students sharing, both allowed students to acknowledge each other and learn more about one another. Also in our morning meetings we play games that allow us to work together as a team and struggle through problems together, reinforcing our work habits and helping us learn to work together. In addition, in morning meeting we discuss our class learning target related to a weekly habit of work. This allowed us to focus our attention on one trait and really dive deep into developing an understanding of what that trait looks like, sounds like and feels like in the real world. Our group norms also play a huge part of developing our strong classroom community. Students decided on what they wanted from each other when sharing and taking risks. As we worked we always

revisited our norms and revised them as needed. The norms became a way for students to hold themselves and their friends accountable for their actions. The last way we created a strong classroom community was through relationships between students and adults. These relationships were developed through morning meeting activities but also through out the day in our daily interactions. I strive to create a relationship with students that even if I am redirecting them or giving a consequence their self concept is kept intact and they don't feel isolated or hurt. This allows students to own their actions while also still trusting me.

Another part of implementation was our preparation for student led conferences. As students began to understand where their grades come from we started to discuss how to improve grades. Students started to track their performance on learning targets in reading and math. Then, they worked to improve their performance on those learning targets over time. This data was then presented to parents at student led conferences.

Data Collection Methods

1. **Student Survey**

   This survey allowed me to gather preliminary information on what my students knew about data, setting academic goals and their mindset toward learning.

2. **Teacher Journal**

   I used the teacher journal to reflect on the process of implementing the various aspects of the research. I took note of the observations of students and the lesson implementation. I kept track of my thinking and choices I made in planning. I also recorded the reflections I noticed students making

during daily work or discussions. This also allowed me to reflect on the larger goals of the research.

3. **Student Reflections** were used to reflect on data at various points throughout the research cycle. A learning target tracker was the most formalized way students reflected on their data. In addition, students self assessed their performance on assignments and learning targets. This was also used as a point of data that students reflected on and created goals from.

    Students started tracking their ability to meet the learning target "I can determine the main idea of an informational text." They recorded each assessment they took on a learning target tracker- a bar graph. Students filled out reflections (questions written to get them to reflect on their performance and how they could improve their performance) after every 2 data points.

    My goal for students was for them to be able to see where they are in their progression of learning the skill, be able to honestly express what they know and don't know or can and can't do. Then, set a goal… what is it you need to do to improve this? This research/ work led us to reflecting on "Habits of Work". This was part of the goal setting students did in order to improve their performance. Students would reflect on their habits of work (staying on task, effort, etc.) and then note what they could improve on in order to help improve their academic performance.

4. **Student journals**

    This was a tool used to provide students with another place to reflect. Students developed their reflections through daily writing and journal

time each morning. They also reflected on assignments and their grades in the journal when a learning target tracker wasn't present. These journals were used inconsistently, but allowed students a more open format to reflect.

5. **Jumprope Data**

   Jumprope is the online grading system our school uses for standards based grading. The students grades are tracked based on each learning target. Academics and habits of work are reported out separately.

6. **Ongoing reflections on assignments**

   Students reflected on their assignments in various ways through out the trimester. On reading assessments students would self assess based on the learning targets. Also, during independent reading students would self assess their reading stamina using the class created criteria for "good reading stamina". For all reflections students would give themselves a grade and then support their grade with reasons from their work or work habits. For example, "I gave myself a 2 because I didn't finish all the parts because I was talking to my friends."

7. **Videos**

Videos were used to document class discussions, conferences between teacher and student and student conversations. Videos were then transcribed in order to use quotes as data.

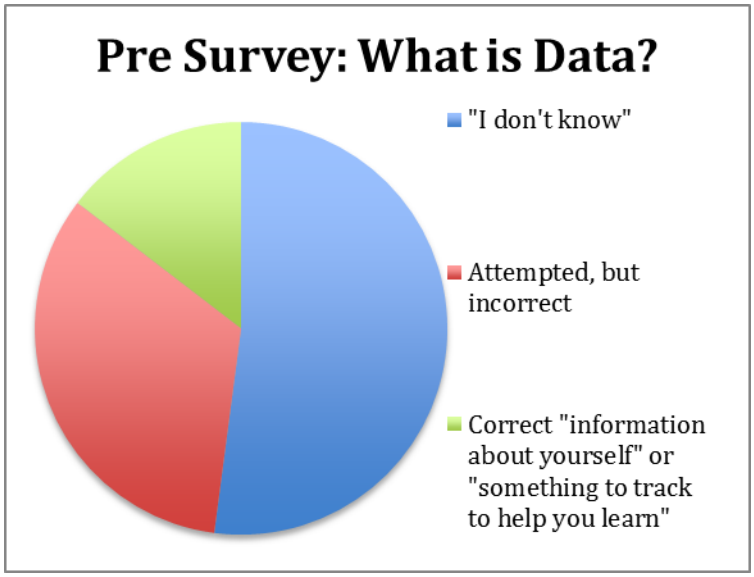
Data and Interpretation

Student Survey

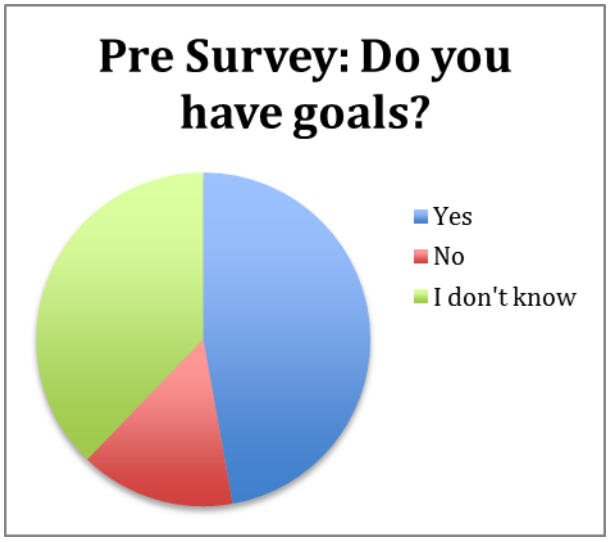
Before we looked at any of our reading data students took a survey that attempted to

find out what they knew about data and using data to choose goals.

November 2014 pre survey results:

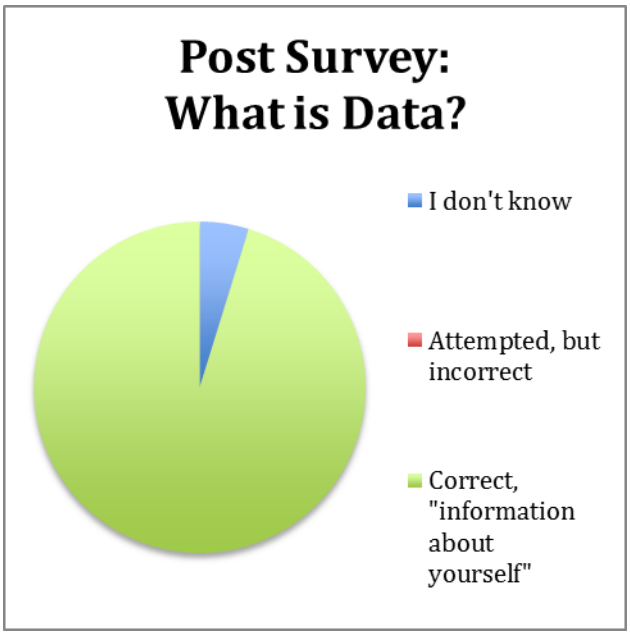


Only a few students correctly described data, over half responded with I don't know and the rest attempted but didn't give a correct response. This tells me that this concept of data is brand new to students and we would have to start slowly with developing an understanding of data and how they have control over their own data. The ultimate goal of looking at your data is using your data to set a goal.



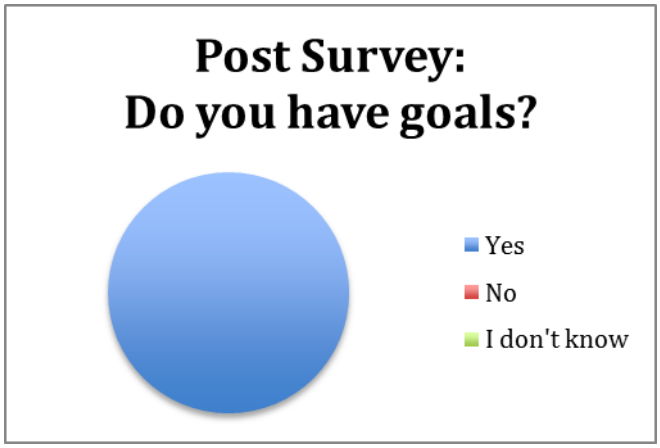
In November 2014 almost half of the students said yes they have goals. A little over half said I don't know or no to having goals. This data tells me that some students have experience with setting goals and we will be able to add to their understanding of goals.

Post Survey Results, April 2015:



In the post survey 20 students answered with a correct response to the question, "What is data?". Their responses showed a strong understanding of the meaning of

data. For example, G wrote, “data is information you track so you know what you learned”.



All 21 students noted that they have goals. 13 students included an example of their goals. It was difficult for them to just write yes. Many asked if they should include their goals on the survey. This shows that students are aware of their goals. For example, C said, “Yes I have goals. I choose the goals from what I know and what I don’t know.” His answer shows that he is able to use data to inform his goals. Janiya says, I have goals to get better. I choose the goals because I go back to my data and see which one I have the lowest score”. Her response shows how she uses her data to get her goals.

Almost all students were able to improve their understanding of goals and data between the pre and post survey.

Case Studies

Seandel is a 9 year old African American boy in my class that was also in my first grade class. His twin brother Shawn is also in my class this year. Seandel preforms below grade level in reading and math. His standardized test scores on the Fall 2014 NWEA MAP test are a low 9 percentile in reading and 2 percentile in math.

Seandel gets frustrated easily and often has tantrums. Jumprope reports from Trimester 1 show that Seandel was a 1.8 for academics in reading and a 1.4 in his reading habits of work on a grading scale ranging from 1 to 4. This data confirms that Seandel was working below grade level. His habits of work were also below, showing he did not complete homework, turn in
assignments complete or respond in complete sentences in written work. Seandel gets frustrated easily and gives up when faced with a difficult task.

In Seandel's initial survey he indicated that he did not have goals and did not know what data was. Seandel responded "yes" to the question, "If you try hard can you get better at reading?" This data shows me that although Seandel may not know about setting goals or even have goals, that he does believe he can learn if he puts in effort. However, on his initial reflections he often graded himself much lower than his actual grade. For example, I noted in my teacher journal that he graded himself a 1 on a reading assignment and wrote "I don't know how to do it." However, when graded he earned a 2 on the assignment. This shows me that Seandel may have some perceptions that he is unable to learn or that when things are too hard he gives up.

The focus for Seandel really became perseverance. It was clear to me after seeing this data and what I knew about him from previous years that focusing on working through hard problems or assignments would make the most difference for Seandel. Although this was a focus I identified for Seandel pretty early on in my research I did not make this known to Seandel, as I wanted him to discover the concept with the class and the affects on his work to ensure he was invested and it wasn't just something else he was doing for the teacher.

Seandel has always been honest in his reflections. For example, when self assessing his reading stamina on 2/4/15 he wrote, “I give myself a 1 because I was asleep most of the time.” On 2/6/15 he wrote, “I give myself a 1 because I got mad because I did not get to count the money and I pouted the whole time instead of reading.” These reflections show that Seandel is aware of the criteria for reading stamina and his performance. His grades match the description of his behavior. This tells me that Seandel is aware of his actions and how they are reflected in his habits of work grades. This got me thinking if he understood how his performance on reading assessments related to his understanding of the reading skill or concept. We began tracking the reading learning target, “I can determine the main idea of an informational text.” At first Seandel struggled to reflect on his scores, by giving reasons he got his grade. “I got a 2 because I didn’t do it right.” This is an honest reflection, he did get some areas of the assessment wrong, and however it doesn’t give insight as to what he got wrong or why he is struggling with that part. As a class we kept working on looking at our mistakes and thinking to ourselves, “what didn’t make sense in this part?” or “why might I have gotten this wrong?”. On 2/12/15 Seandel wrote, “I got a 2 because I put details in the main idea section and the main idea in the details.” This shows me that he looked at the areas of the assessment that were marked wrong and figured out why they were wrong. This shows that his reflections continued to be honest, but started to be more reflective on his academic understanding in addition to his work habits.

As we ended the trimester and prepared for conferences students looked back at their learning target tracker and wrote about their progress. Seandel noted that his grades stayed at 2s and then went down to a 1.5 then back up to a 2.5. He said, “I got better at reading the text and the main idea. I know that because I got a

2.5 when I started at a 2 that means I learned something." This reflection shows that Seandel understands the link between an increase in grade indicating an increase in understanding of the learning target. This quote shows that Seandel still continues to reflect honestly and specifically, but is also understanding the meaning of a grade.

Janiya is a 9 year old, African American girl. She has gone to Polaris since kindergarten, but was not in my 1st grade class. Janiya has sickle cell anemia, a conditions that causes her a lot of pain which often causes her to miss class. Janiya preforms below grade level in reading and math. In March of 2015 she was evaluated by the school psychologist and qualified for a IEP, Individualized Education Plan. On the standardized test, NWEA, in the Fall 2014 she scored in the 4th percentile for reading. When things get hard Janiya often gets overwhelmed and cries. Jumprope reports from Trimester 1 show that Janiya scored a 1.7 for academics in reading and 2.5 in reading habits of work on a grading scale ranging from 1 to 4. This data confirms that Janiya is reading below level. Her habits of work however are high, almost meeting (or a 3). The habits of work include staying on task during independent reading, completing work and giving her best effort on assignments as measured through neatness and completeness.

In Janiya's initial survey she indicated that she has goals, because "I choose goals because I need to work on that." She "yes" to the prompt "If you try hard can you get better at reading?" This data shows me that Janiya is aware of some of her growth areas and chooses goals based on her growth areas. This data also highlights that she understands that hard work can improve performance. On Janiya's initial reflections on her learning targets she was honest and gave explanations for her grades. For example, on Unit 1 reading assessment she wrote "I think I am a 2 at this learning target because some of the work is hard to read."

Janiya earned a 2 on the learning target for that assignment. This shows me that her reflection was accurate and she is able to self asses honestly and in line with her performance on the learning target.

The focus for Janiya really became improving her performance. Her work habits are strong and she is aware of her struggles. However, at times when things are too hard Janiya shuts down and will rush through or avoid her work. It was clear that it was important that Janiya get many different entry points to the learning target. This was a test of my differentiation of the learning target. It wasn't enough for Janiya to just do the lesson to meet the learning target, it was important that she had an opportunity to practice the skill in many different ways.

In my teacher journal on December 7th, 2014 I wrote,

> "I need opportunities for students to take risks. I am using the last hour of the day, but is has been to unstructured and messy. How could we look at something as a whole class? Could it be incorporated to our reading comprehension work? Each week we go through the same reading process… so students could track their progress on the learning target, I can determine the main idea of an informational text."

As a class we worked on the learning target during close reading. However, I also structured the "choice" time more for students to work on the learning target we were now tracking as a class. Students could work on the learning target on the computer program, Compass Learning. We also worked in guided reading groups on the same learning target. Through this differentiation of the learning target Janiya made progress. On her first two assessments she scored a 1 on January 5th, 2015 and a 1.5 on January 27th, 2015. After the differentiation and repeated practice by the end

of the unit Janiya was consistently scoring 2s. Although, not a 3 she was better able to identify the main idea and the supporting details.

As the Trimester ended and we prepared for student led conferences Janiya looked back at her learning target tracker and wrote about her progress. She noted, “I kind of got better at finding the main idea. I know because I have use to have a 1 and now I have a 2 and then a 2.” This reflection shows that Janiya understands that increasing her grade from a 1 to a 2 is a good thing. It also shows that she understands that a 2 does not yet mean that she learned the skill. Janiya also set a goal for a habit of work she wanted to improve, “I need to stay more focused.” This shows that Janiya understands the connection between her habits of work and her academic achievement.

George is a 9 year old African American boy. He was new to our school last year in second grade. George performs at or above grade level in all subjects. He is a very bright and inquisitive. On the NWEA test in Fall 2014 he scored in the 63rd percentile. Jumprope reports from Trimester 1 show that George was at a 3 for academics in reading and a 3 in habits of work on a grading scale from 1 (not meeting) to 4 (exceeding). George is preforming above his peers in the classroom and nationwide. He also has strong habits of work.

On the initial survey George wrote “I don’t know” for all of the questions pertaining to data (What is data? Do you know about any of your own data?). This either tells me George truly doesn’t know, or he is afraid to write down something that is wrong. When taking this initial survey I did tell students there might be things they didn’t know but I really wanted them to give it a shot if they had even the slightest idea. I emphasized that this was not a test and would not be graded. George didn’t attempt to write any of his ideas down. When asked, “Can you read

hard books?" he responded with "kind of". From his data, we know he can indeed read hard books for a 3rd grader. This data demonstrates that George's perception of himself and his knowledge differs from his academic data.

The focus for George was digging into why he had this potential discrepancy between his perception of his knowledge and his academic achievement. His initial self-reflections were honest, but came across as almost too harsh. For example on 2/5/15, "I gave myself a 2 because I got up in the middle and picked books and didn't get a chance to read all of them." The expectation for 3rd grade independent reading is that they read the whole 40 minutes without getting distracted or being distracting. The expectation is not to read all the 10 books you choose to put into your book bin, in one day! The next week, 2/11/15, "I gave myself a 2 because I read the book but I didn't think about the book." This is an honest reflection of reading without focus to thinking about the book. However, I still question if he is being to harsh on himself. The next day, 2/12/15, "I gave myself a 3 because I did think about the book. I read the book the whole time and I did not distract others." This reflection is honest and gives clear criteria for how he is meeting the learning target of "I can read with stamina for 40 minutes."

In addition to the harsh self-reflections I often noticed his grades from the self-reflection didn't match the grade he got on the assignment. He graded himself a 1.5 on 1/12/15 on the reading assessment and wrote, "I'm not that good at finding the main idea.' On that assessment he got a 3 (meeting) for the learning target I can determine the main idea of an informational text. This continued to happen through out the trimester. In my teacher journal October 2014 I wrote,

> "I find these students who graded themselves lower than their actual grade to be interesting. Are these the students that have the fixed mindset? Even if

they are good at something or do well on an assignment they view themselves as unable to do well because they have decided they aren't good at that? All of these students are at or above grade level in reading."

This is not a case of lack of ability to learn or lack of habits of work, instead this is the student not self-assessing honestly. This wondering leads me to start to talk to students about growth mindset more. I had these students talk more in class discussions when we talked about mindset. We started to work our mindset into how we approach new or difficult tasks. In addition, our conversation changed to if we aren't good at something, what can we do to get better? Also, talking about how sometimes increasing habits of work will help us get better. Lastly, we talked about what we should do with people who are already meeting the learning target. I started to wonder in my teacher journal 1/20/15,

> "What if this type of reflection is because they feel like they have to be always improving and if you say you're not good at something then you can get better. Maybe I need to be pushing these students to exceed this learning target. Maybe I need to give them examples of what it looks like to go above and beyond this learning target."

We ended the trimester by looking back at our learning target tracker and preparing for conferences. George wrote, "My data tells me that at first I didn't know how to do main idea and now I know how to find it because I'm at a 3." Then he wrote, "I know how to find the main idea because I started low then I got higher. So I can now I get the main idea better." This reflection is honest and shows that George understands that when your grades go up you are learning. His grades went from a 2.5 to a 3 and then stayed at a 3 for the remainder of the assessments. In our exit interview I asked George about how he felt he was at reading and he said, "I think

I'm alright, well pretty good, yeah pretty good." I responded by saying, "Really? Pretty good is how you would describe it? Why?" Then he said, "No, not pretty good. Really I'm just good at it. I know that because I can read fast and almost any word. Sometimes I don't know what it says because I'm not focused on the text." Then I explained (re explained, again!) that it is okay to be good at things and he should be proud! His response shows that he continues to not understand how important it is to be proud of your strengths and unapologetic. George's comments do show his understanding that his work habits are linked to his academic achievement.

Whole Group

Academic grades are gathered based on each learning target. Students tracked their growth in several learning targets and more are tracked in our online grade book, Jumprope. Students' grades improved on skills tracked through out this research process. The learning target "I can determine the main idea of a text." was taught and practiced with students in reading. 18 out of 23 students grades improved from the beginning of trimester 1 (September) to end of trimester 2 (March). I don't believe I can attribute this academic success to the tracking and use of their data. However, students did track and analyze data around their reading goal that shows growth. Students also set goals related to this data and the data improved which could be in part due to their awareness of their data and goal setting.

In the NWEA test students take in fall and spring students showed growth in reading. The median score for reading in the fall 2014 was 180 and in the spring was 199. Although this data shows growth, the test measures a variety of reading skills. Therefore, it is difficult to attribute the work students did looking at their data to this improvement.

Discussions were a large part of how we learned how to look at data and set goals. I often started a conversation in a circle on the rug and students took it over by calling on each other, adding to each other's ideas, agreeing or disagreeing among themselves. Video from October 16th, 2014 shows students reflecting on the learning target "I can participate in a math discussion". I am leading them through a checklist of criteria as they check to see if they are doing each part. Students then discuss with a partner what grade they would give themselves based on the criteria. Later in the month, a video shows the class discuss what each number (1,2,3,4) of our grading system means. A student says, "Well a 3 is when you can do it without mistakes… you like know it." Many other students hands whip up giving the "I agree" signal. I interject asking if they would like me to add it to our anchor chart next to 3. The conversation goes on coming up with phrases that align with each numeric grade. On November 3rd as we prepared to look at our data in preparation for our student led conferences we had another conversation about safety. In this video taped discussion students said things like, "we agreed we won't make fun of each other about grades because our grades are just showing us what we still need to work on" and another said, "I agree with J, if I have a 2 in something I know it is something I need to work on." I interject with a question, "So, if you see a 1 or a 2 how will you react? How will you feel? Why?" Students talk to partners first and then a few share, "I will feel sad. I want to have all 3s" and "I will feel ok. I know I have to work harder so I get a 4." These conversations gave me a glimpse into what the students had internalized and where I needed to continue to push their understanding. There is evidence here of students starting to understand the meaning of grades, using a criteria to self evaluate and in the end starting to understand using data to set goals. However, those last few comments revealed

students needed more time to discuss and process how to feel about an undesirable grade and they needed opportunities to do something about those grades in order to feel empowered.

Toward the end of the research we had similar conversations. Students quickly came up with ideas of the types of data they knew about themselves when asked, “What data do you know about yourself?” Students talked with a partner and then shared out over twenty types of data. In another video students talked with a partner about a test they had just gotten back. One student said, “I noticed I haven’t answered the whole question. I was rushing. I know I should have went back to it.” The partner responded, “Maybe that is why you got a 2?” And another partnership, “I got a 3 because I answered them all right.” Partner responded, “Yeah you must really know how to do this. Do you understand it?” and he responded, “uh huh, I didn’t before but now I think I do.” These conversations show a much more sophisticated understanding of grades. In the first interaction the student was identifying why she got a 2 relating her work habits to her grade. These student interactions show that their understanding of the grade, how to use the data to set a goal and how their data can improve over time.

Lastly, I made general observations about the attitude of the class when faced with a challenge. I noted what happened when I gave them a challenging task. We filled out a pre assignment survey that consisted of questions like, “Will this be hard? What will be the most difficult part? What will you do when it gets hard?” Then, when the students finished the task they completed the bottom of the survey, “Was this challenging? What did you do when it got hard?”. This was a way for students to reflect on their approach to challenging tasks and set goals for themselves on what they would do when faced with the challenge during work time.

After a few weeks of using the survey I noticed students starting to shy away from using it (I made the survey optional after two weeks). When I conferenced (video taped) with students about why they weren't using the survey they said, "I already know this will be hard and I know what I need to do." I pushed, "Great! Can you tell me more about that?" She said, "Well I know it will be hard to reread the text 3 times because I get really tired of doing that. So, when I get tired I am going to take a mini break. I will look up at the ceiling and think to myself 'you can do it'!" Another student who also wasn't using the survey, "I know when things get challenging I have to persevere." Afraid he might just be giving me lip service and regurgitating vocabulary I responded, "Oh really? What do you mean?" To my delight he responded, "I know this will be hard, close reading is HARD! I have to keep trying even when it is hard because that is how I will learn." These responses show that students were in touch with why they needed to tackle hard tasks. This was a common theme I started to note in the classroom, students were willing to take risks and do hard tasks because they knew what they could do if it got challenging.

Conclusion

So, what happen when I taught students how to use their data? I noticed from the pre and post student surveys that more students could define data, use it to set goals, and describe the data they know about themselves. From the class discussions about data I can also see evidence of this knowledge. This is a change from the pre survey in which students weren't aware of data or how data can inform goal setting.

The classroom community was positively affected. In past years students in my class were afraid to discuss their grades. However this year, through thoughtful

lessons and strategic conversations students developed a sense of security in which they felt comfortable sharing about their data. These practices I will continue to implement and fine tune in years to come. I noticed that when students felt safe we had fewer outbursts of, “He’s looking at my test!” or “Don’t look at my grades!!”. Instead, students had productive conversations about why they got the grade and how they planned to improve.

A person’s mindset is nearly impossible to assess completely. However, as I focused on three case studies I did notice changes in those students. Although I’m not sure if this research affected all students’ mindsets, I do know it positively affected those students I studied closely. As a whole class the language centered around growth mindset, embracing mistakes and persevering in order to learn. This was a positive experience due to the research and will be incorporated into my classroom community in years to come. Through this research, my classroom has developed into a place where students take risks willing because they understand that making mistakes is the most important part of the learning process.

I did not notice a change in students’ academic achievement or their motivation. In fact, the tools I used to measure the research really didn’t focus on these elements. I value teaching students how to use their data to goal set and develop a growth mindset, but not necessarily because of the academic achievement benefits.

In conclusion what I’ve learned is that students’ mindset and ability to goal set improve when they are explicitly taught how to use data and develop a growth mindset. I’ve also learned that the classroom community is stronger through lessons designed to build a sense of safety and learning from our mistakes.

Recommendations

Classrooms & Teachers:

- Establish clear learning targets and unpack them with students to ensure they know what they are to learn and how their learning will be measured.
- Establish a classroom community where students feel safe discussing their successes and failures, where mistakes are acknowledged as a part of the learning process. Grades are discussed as a part of the learning process and students know they are able to be learn with increased effort and improved work habits.
- Give students opportunities often to look at and discuss their data.

Schools & Districts:

- Research and study the affects of standards based grading on teaching practice and student achievement.
- Form a committee of teachers and school stakeholders to investigate model schools currently implementing standards based grading. This committee should create an implementation plan prior to adoption.
- Educate parents, teachers, and other stakeholders about the advantages of a growth mindset and using data to inform goal setting.

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