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Teaching Growth Mindset to Second Grade Students

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### **Abstract**

Growth mindset is a buzz word in the field of education. The purpose of this study was to observe and understand what would happen when students were presented with growth mindset lessons in the classroom. Additionally, the researcher wanted to know how students perceived using a growth mindset. This study took place in a gifted and talented classroom, composed of a unique grouping of students: those identified as gifted, high-achieving students, and typical students. Responses from each grouping were included. Data was collected through student artifacts, student surveys, student and teacher interviews, observations, and journaling. Three major themes emerged from the data: the significance of the teaching and learning process, the necessity of understanding student affect, and the difference in student articulation and application. In addition, a section of the findings is included specifically in regard to the context of gifted students and their interpretation of this topic.

### **Teaching Growth Mindset to Second Grade Students**

“Hey Alex (all names are pseudonyms),” whispered Nathan. “Can I just copy your answers to the subtraction problems? They will take me forever to do because I’m not good at subtraction.” This conversation occurred on a typical afternoon during the students’ independent work time for math. Overhearing this across the room, my initial thought was one of irritation and frustration, “Why does he think cheating would be an option? Subtraction is still brand new for many of the students. Of course, it is going to take a bit of time!” Refraining from quickly barging into the conversation of these two students, my mind began to process. “What is causing him to not even present an effort? Why does he assume he’s not good at subtraction? Are any of my other students perceiving their abilities in a similar manner?”

#### **Purpose**

This one conversation sparked my interest into a booming topic in education today: growth mindset. Dweck (2006) propelled this term into the educational lexicon by examining ideas pertaining to self-perception and how one handles challenges and problems. Her studies led to the suggestion of two mindsets: fixed mindset or growth mindset. When using a fixed mindset, one views intelligence as predetermined, and self-esteem is then correlated with that establishment. Whereas using a growth mindset, intelligence is seen as malleable, leading to a sense of content and purpose with risk-taking and working through challenges.

The purpose of this study was to observe and understand what would happen when a class of second-grade students were explicitly taught about mindsets, specifically growth mindset, and to observe if any changes or responses occurred. I also sought to understand student perceptions of using a growth mindset both within and outside the classroom. With a unique classroom makeup, this class of second-graders was also home to the gifted and talented cluster. The district in which this school was a part of groups all identified gifted and talented

students of that grade-level into one classroom, rather than spreading them out across the grade-level and using a pull-out system to meet their needs. A mix of high-achieving and typical students were also present among this classroom. Due to the unique nature of the classroom population, I sought to identify if these groups of students responded differently towards the growth mindset lessons. This study aimed to answer the following questions:

- What happens when two teachers introduce growth mindset concepts into a second-grade gifted and talented classroom at Pioneer Elementary?
  - **Sub Question:** What are the students' perceptions of using a growth mindset?

During the time of the study, I was a graduate student fulfilling a yearlong clinical teaching placement. I co-taught alongside my cooperating teacher at Pioneer Elementary in a second-grade classroom that served both the gifted and talented cluster and a range of other students. Pioneer Elementary was located in a mid-sized West Texas town with a population of around 120,000 people. Pioneer Elementary served closely to six hundred students ranging from kindergarten to fifth grade. About 46% of the students were classified as economically disadvantaged. Fifty-five percent of students were White, 33% were Hispanic, and five percent were African American. Approximately three percent of students were English Language Learners. For the purpose of this study, only one classroom at Pioneer Elementary served as participants.

### **Literature Review**

Dweck's (2006) concept of mindsets developed out of an interest in how people dealt with failures or challenges when they emerged. Her research identified two mindsets: fixed mindset and growth mindset. She argued that fixed mindsets are present in those who believe that their knowledge is fixed and limited, creating a desire to constantly prove, evaluate, and

compare themselves to others. Dweck (2006) also identified the existence of a growth mindset. She described those who possess growth mindsets as ones who believe that intelligence is malleable and can be attained through effort. When faced with a challenge, these individuals gravitate towards risk taking, putting forth effort, and learning from their mistakes.

Prior to her research on mindsets, Dweck (2000) sought to understand how people create perceptions and beliefs about themselves, known as self-theories. Similar to the two mindsets, Dweck (2000) identified two main theories of intelligence: an entity theory of intelligence and an incremental theory of intelligence. An entity theory of intelligence views intelligence as fixed and concrete, and there is a gravitation towards performance-based tasks and assignments. An incremental theory of intelligence views intelligence as malleable with a focus centered on a learning goal despite challenge or risk at hand. The concepts of mindsets and theories of intelligence sparked the interest of many educators and researchers as several were able to attribute different mindsets and theories with their students.

In a classroom, there is a wide variety of learners. One population of students, in particular, is the identified gifted and talented. A stereotypical characteristic that has been attributed to gifted students is perfectionism (Mofield & Peters, 2018). Through interviews and surveys conducted with identified gifted college students, Neumeister (2004) found that this sense of perfectionism developed out of an ability to quickly master all work at a young age. An ease of mastery led to a sense of panic when faced with challenge or when understanding and confidence with a subject did not come as quickly. Little research has been conducted in attempting to combat this characteristic at a young age. Seeking to identify if mindsets and self-theories differed among middle school gifted students, high-achieving, and typical students, Mofield and Peters (2018) found that there was no statistically significant data in regard to holding a specific mindset among a particular group. In addition, no group illustrated a higher

concern over mistakes than the other. Gifted students, though, were found to have a higher academic self-perception score in comparison to their peers. There is a lack of research conducted on providing a growth mindset intervention and analyzing the results that the intervention had on the gifted population.

As the topic of growth mindset emerged amidst the educational field, teachers began voicing their perceptions. In regard to the knowledge teachers possessed about the topic of growth mindset, Boylan, Barblett, and Knaus (2018) found that 63% of teachers had heard of the terms growth and fixed mindset. In another study, Yettick, Lloyd, Harwin, Riemer, and Swanson (2016) found that about half of the teachers were familiar with growth mindset personally, and about a quarter of administration were familiar with growth mindset. Teachers also held perceptions regarding the impact of teaching growth mindset in the classroom. Two thirds of teachers “strongly agreed” with the fact that students are more successful when they possess the mindset that they can learn from mistakes and failures as well as are open to trying new things (Yettick et al., 2016). Ninety-two percent of teachers agreed that a child’s mindset will have an impact on his or her learning, and 98% of teachers agreed that a child’s mindset can actually improve his or her learning (Boylan et al., 2018).

Despite knowledge and interest in the topic, many teachers do not feel equipped to address this topic in their classrooms (Boylan et al., 2018; Yettick et al., 2016). Sixty-seven percent of teachers indicated that their pre-service education did not provide information or instruction on addressing growth mindsets (Yettick et al., 2016). Only 19% of teachers agreed that they were good at fostering growth mindsets within their classrooms, and only 14% agreed that they had enough knowledge in this subject area to feel confident in teaching mindsets to children (Boylan et al., 2018). This lack of confidence in instructing growth mindset within the

classroom suggests a need for additional research, specifically regarding the teaching of growth mindset.

Numerous studies have been conducted in which various types of growth mindset interventions have been implemented. Many researchers have identified benefits that stem from a growth mindset intervention, one being an increase in student engagement and interest in learning (Aronson, Fried, & Good, 2002; Schmidt, Shumow, & Kackar-Cam, 2016; Zeng, Hou, & Peng, 2016). Aronson et al. (2002) conducted a study in which a pen pal simulation was implemented amidst college and middle school students in which writings were based on the topic of growth mindset and encouraging one another through growth mindset principles. This study evoked findings of an increase in overall enjoyment in the field of academics, increased academic engagement, and increased academic achievement. Zeng et al. (2016) explored the role that positive education plays among primary and middle school students in China. Students who attended a school that supported positive education, which focused on promoting a growth mindset, predicted higher levels of growth mindset, increased psychological well-being, increased school engagement, and the development of resiliency. The promotion of growth mindset concepts have led to positive changes amongst students, specifically in their approach to the education system.

Following growth mindset interventions, researchers have also found changes in theories of intelligence to have occurred (Aronson et al., 2002; Blackwell, Trzesniewski, & Dweck, 2007). Blackwell, Trzesniewski, and Dweck (2007) constructed an intervention in which an experimental group of seventh grade students were taught about the incremental theory of intelligence. Not only did these individuals respond by showing more positive effort beliefs, more positive learning goals, a lower rate of helpless attributions, higher class motivation as observed by teachers, and the use of more positive strategies, but following the post-

administration of the theories of intelligence questionnaire, students showed trends more towards the use of an incremental theory of intelligence.

Individuals have also been shown to have increased persistence, effort, and self-control in response to growth mindset interventions (Blackwell et al., 2007; Mrazek et al., 2018; Schmidt et al., 2016). Following self-regulation training sessions, Mrazek et al. (2018) analyzed university students' responses which showed an increase in persistence and a reduction in avoidance of effort. Schmidt et al. (2016) studied seventh and ninth graders responses to a growth mindset online intervention program. Following the completion of the online program, the ninth-grade students showed an increase in self-control. In contrast, though, seventh-grade students showed a decline in all areas representing a growth mindset. This conflict of interest that was elicited from this data calls for more research in regard to growth mindset interventions.

Growth mindset is a booming topic in the field of education today. Continued research is necessary due to the curiosity and interest in the topic. Some studies have elicited conflicting responses, creating a need for further study (Schmidt et al., 2016). Applying this topic of growth mindset into an elementary classroom setting is also an area in which my study will contribute needed information in the field of research as all but one of the above studies specifically looked at an elementary classroom setting. Much of the growth mindset research done prior has utilized students in middle school, high school, and college. The composition of the students in my classroom, which included the gifted and talented cluster, high-achieving students, and typical students allowed for a unique opportunity to compare student responses to a growth mindset implementation.

### **Methods**

The following describes the action research study I conducted in the context of a second grade gifted and talented classroom. I studied what happened as a result of teaching growth

mindset to second grade students, those who were identified as gifted, high-achieving, and typical. I also studied the perceptions students had of using a growth mindset. I conducted this study during my yearlong clinical teaching placement which allowed for my students to feel comfortable in my role as both a teacher and researcher.

### **Participant Selection**

The participants of this study included a single classroom of second-grade students and two classroom teachers: one head teacher and one clinical teacher. This classroom also included the identified gifted cluster for the grade level, with nine of the 21 students identified as gifted. I sent home a parent information letter and consent form, and the students were asked to sign an assent form. Of the 21 students in the class, all 21 received parent permission and assented to the study. The class consisted of 12 boys and nine girls. Eighteen of the students were Caucasian, two were Hispanic, and one was mixed. The classroom teachers were both Caucasian females.

### **Data Collection**

The teaching of growth mindset concepts was implemented in the classroom for about one month, and data collection lasted for four weeks. Student artifacts and writing responses were collected from any of the growth mindset lessons taught. Furthermore, students' use of growth mindsets during lessons as well as throughout other instruction during the day were assessed using an observation journal. Headnotes were taken during various growth mindset lessons, and a notepad was kept on hand at all times in order to record notes, stories, and reflections (Hendricks, 2017).

All student participants were given a mindset survey. This survey consisted of 10 questions relating to student use of growth or fixed mindsets (see Appendix A). Students responded to eight of the questions using a Likert scale. Two open-ended questions were included at the end in which the students responded in writing.

I then chose a sample of students to interview following the survey. I used purposive sampling to select two students who were identified as gifted, two students who were high-achieving in academics, and two students who were typical in academics (Patton, 1990). With these students, I conducted one-on-one interviews that followed a semi-structured format (Hendricks, 2017). Each of these interviews lasted about ten minutes. I also conducted one interview with my cooperating teacher that lasted about 20 minutes. Similar to the student interviews, this interview followed a semi-structured format with pre-planned but open-ended questions (Hendricks, 2017). All interviews were audio recorded and transcribed. Additional questions were asked in all interviews depending on the response of the participants.

### **Data Analysis**

Qualitative data was analyzed using the constant comparative method, with initial coding followed by the creation of hierarchies of categories and supporting codes (Hubbard & Power, 2003). I began by manually analyzing 20% of all data collected and created a list of 15 to 20 level I codes that had emerged (Tracy, 2013). I then took these level I codes and created level II codes that represented the major themes and findings within the data. I then used the level I codes that were generated in the first 20% of the data to code the remaining 80%. Additionally, I created a codebook (see Appendix B), that provided a list of all the codes, their definitions, and a corresponding example from the data. I also wrote memos regarding each level II code in order to further reflect and understand the findings and overall themes present in the data (Tracy, 2013). The quantitative data from the survey was analyzed using descriptive statistics. The data from the students' survey responses is demonstrated through frequency counts (see Appendix C).

### **Findings**

Based on my data collection and analysis, the following major themes emerged: the significance of the teaching and learning process, the necessity of understanding student affect,

and the difference in student articulation and application. In addition, a section is included describing how these themes and findings specifically were interpreted by the gifted students who participated in the study. These themes developed based on student survey responses, interview responses, and artifacts as well as teacher observations, journaling, and interviews.

### **The Teaching and Learning Process**

When implementing growth mindset lessons into the classroom, the teaching and learning process and factors that affected this process became a major recurring theme amongst the data. Factors such as observation and journaling notes pointed to various moments that were pivotal to students' understanding of growth mindset within the specific teaching and learning outlined times of these lessons. Whether this be from countering student misconceptions to seizing opportunities as pivotal teaching moments, the teaching and learning process proved to be an integral part in student understanding and application of the growth mindset concept.

From the very first day we began teaching about growth mindset, misconceptions arose almost immediately. When simply defining the term of mindset for the students and what the different mindsets look like, Max interrupted and said the following with a puzzled look on his face: "Wouldn't fixed mindset be the good one? Because we are like fixing the problem? Our mindsets are fixed so we are good to move on?" The nuances of the words as well as the overall abstract nature of the concept caused these misconceptions to arise early on, requiring detailed and explicit moments of reteaching.

Some misconceptions were more difficult to pinpoint. When teaching the students about the idea that mistakes are okay and helpful to the learning process, a new misconception arose. As students returned to their seats to begin reflecting on a time they made a mistake and learned from it, students quickly began writing about a time they had, for example, fallen off their bike or broken their arm. As I was walking around and reading their writing, I knew that students

were not interpreting what I presented them in the way I had hoped. After talking this through with my co-teacher, we realized that students were struggling to identify the difference between an accident and a mistake. Once we were able to identify this misconception, we were able to provide some reteaching, which led to students being able to successfully apply this concept.

In addition to this misconception, we also came to the conclusion throughout the implementation period that students were struggling to discern the difference between not wanting to do something and thinking you are not capable of doing something. For example, when asked about a time they used a fixed mindset, a common response was “When I had to clean my room, and I didn’t want to.” I do believe that the misconceptions that arose were due to the abstract nature of the concept. This was a common subtheme that emerged throughout this finding and is one that I believe is pivotal to keep in mind as the idea of mindsets is an intangible reflective concept, which can be extremely difficult to wrap one’s head around, let alone an eight-year-old’s mind!

Due to the abstract nature of the concept, my co-teacher and I found it pivotal to seize various opportunities throughout the day to utilize as teaching moments for the students regarding their mindset. Many times, students did not even realize they were utilizing a fixed mindset until we pointed it out to them in a specific situation. By seizing an opportunity and using it as a teaching moment, students were able to personally experience and recognize what a fixed or growth mindset was. For example, during a math lesson, Nathan mumbled under his breath, “I am such an idiot. I can’t do this.” I pulled him aside and asked him what he was feeling. He explained how he was frustrated because he did not understand what was being taught and that he was never going to be able to do it by himself. After reflecting with him on these feelings, I asked him what kind of mindset he thought he was using. He quickly acknowledged that this was a moment in which he was using a fixed mindset. We were able to

talk about some ways we could handle the situation differently in the future and promote the use of a growth mindset. Walking through these feelings and emotions in this given situation provided a tangible experience for Nathan in order to continue to understand the concept of growth mindset.

Another student, Braden, was talking with Mrs. Anderson about how he was nervous for his soccer game that night, how they were going to get “creamed,” and that they shouldn’t even try. Mrs. Anderson asked him immediately, “What kind of mindset do you think you are using towards this situation?” Braden was able to recognize that he was using a fixed mindset. They then used this time to talk about what he could learn from this challenging situation and how he could approach it in a positive manner. Overall, times in which opportunities were seized to explain this growth mindset concept at an individual level were pivotal to the teaching and learning process. This also allowed for the study to be guided and led by the students, as individual moments were utilized and built on for future lessons.

Within the teaching and learning process, I also found the students making several connections- to extracurriculars, home life, literature, etc. When talking about various growth mindset topics, students were able to further grasp the concept by connecting it to something that was relevant to them. For example, when introducing the concept of mindsets, Hannah said, “I started doing ballet a lot later than the other people in my class. When I first went, I wanted to quit, and I thought ‘I can’t do it.’ I learned, though, that I had to keep practicing at something to get better.” Hannah was able to apply this growth mindset concept by applying it to ballet and connecting the feelings and thoughts she had when first starting this activity. Many of the students fell into this similar pattern, talking about soccer, baseball, riding a bike, reading, etc. For the majority, though, these connections all correlated to activities and situations outside of the classroom - a topic which will be more closely analyzed in a further section.

Reflection proved to be a critical component of the teaching and learning process, at both the student and teacher level. Many times throughout the growth mindset lessons, students were asked to reflect on their learning and mindset. This proved to be a challenge for many, and the process of reflecting was something that needed to be taught to students. Providing time for students to stop, reflect, and apply their learning was something that was a brand-new concept for many. Though initially approached with some resistance, over time this piece got easier, and students began to open up and truly reflect on their learning of the concept.

The act of reflecting was an equally important piece for the teacher(s). Reflections guided much of my teaching of the lessons as it allowed me to process and identify what misconceptions were present, what my students were needing more of, and how I could present this material in the most concrete manner. Reflections in my journal allowed me to reach many of my conclusions, in addition to several reflective conversations with my co-teacher, which allowed me to further analyze and understand how students were responding. This reflection piece always left me with questions. One reflection in particular actually led me to present a piece of data to the students and glean from their interpretations - an experience I will address in a further section. Taking an abstract concept and presenting it in a student-led manner required processing and reflection in order to develop further lessons based on the students' needs, as well as answer questions for myself that arose throughout the study.

### **Understanding Student Affect**

Predominantly found amongst student reflection pieces and observations, understanding students' affect, including understanding the reasons behind various emotions, proved to be a major finding elicited from the data. This conveyed to me the importance of understanding student affect when embarking on teaching an intellectual and reflective topic such as growth mindset.

When discussing failures and challenges with the students, the majority of students possessed highly negative feelings towards these types of situations. When students were reflecting about a time they made a mistake, they used the following words to describe how they felt at the time of this mistake: “disappointed,” “frustrated,” “embarrassed,” and “stupid.” Students, prior to learning about the topic of growth mindset, perceived challenges and failures as something that was very negative. These feelings were elicited immediately in their responses, allowing me to see the necessary work needed to overcome a mindset in which these feelings came about so naturally. During reflection times, my co-teacher and I found it immensely valuable to spend time with the students in conversation, specifically regarding these negative emotions. By helping students vocalize and unpack these negative emotions, we were able to identify and understand the driving factor behind many of these feelings which ranged from hopes of getting a high grade, fear of getting something wrong, worry of how they will be viewed by peers, and a desire to be perfect.

The desire to be perfect was a common subtheme that emerged when analyzing student affect. “Well, I don’t want my friends to see me when I make a mistake or mess up, so I always try and be perfect at things.” This quote comes from one of the gifted students in which the trait of perfectionism was seen at the forefront; however, many others not identified as gifted struggled with very similar feelings. The growth mindset lessons challenged the notion of perfectionism at its core, causing many perfectionistic students to wrestle with the idea of saving this face of perfectionism or truly reflecting and being vulnerable with their emotions and mindsets. When walking students through their emotions and why they possessed such strong and negative feelings towards failure and challenge, many times responses included themes of perfectionism.

Throughout discussions and reflections focused on the topic of growth mindset, there was a high amount of vulnerability and honesty displayed by the students. There was a very small amount of hesitance or embarrassment in sharing for many of the students. For example, Amanda shared the following in a whole group lesson regarding negative feelings towards failure: “At the beginning of the year, I thought I couldn’t do it, so I would cry. Then I would just cry and not even try.” Being able to personally reflect on one’s emotions and be willing to share a vulnerable experience with the class was something I witnessed not only from Amanda but also from several others. The ability to be vulnerable increased as time progressed. I do believe that this sense of vulnerability and honesty can be credited to the impact of the classroom climate and culture that had already been established - a benefit of doing this implementation later in the school year. Students were very comfortable with each other as well as with sharing their feelings and thoughts prior to the implementation of these lessons. Regardless, students were able to reflect at a vulnerable level, allowing us as teachers to truly analyze their perspectives and use of growth mindset.

My research question sought to identify what happens when growth mindset lessons are taught to students. One result of the lessons was a more relaxed and free approach to learning among the students. When interviewing my co-teacher about what changes she had observed in the classroom since the implementation, she said, “While some, I feel like [it] has just been a freeing thing and it’s no big deal anymore. They make a mistake. They don’t have a problem with it. They don’t really even talk about it. They just move on.” This was the most significant change seen as a result from teaching these lessons. Students’ focus and attention freed up so that it could be placed on the learning at hand rather than on feelings and emotions of worry, embarrassment, and/or perfectionism. By understanding and analyzing student affect, we were

able to witness a change in students' overall posture and perspective towards failures, challenges, mistakes, and the learning process as a whole.

### **Student Articulation vs. Application**

As seen amongst the major finding of the teaching and learning process, the growth mindset lessons allowed for students to make connections. Students brought into the classroom connections to home life, extracurricular activities, and more in order to help break down this concept of growth mindset and apply it to their lives. Though I loved the connections and experiences that were being brought into the classroom, I was a bit frustrated initially due to the lack of application and articulation of growth mindset towards the classroom. As a teacher-researcher, this piece was one that I wanted to fully understand as I left this research implementation period, which was a goal that is highlighted throughout several of my journal reflections.

Students demonstrated a high capability in clearly articulating what growth mindset is and the strengths associated with its use following the lessons on this topic. Looking at the survey responses, 100% of students indicated that they either agreed or strongly agreed with the concept that mistakes are helpful to the learning process. In addition, all six students interviewed responded to the question of, "Are mistakes helpful?" with a strong "Yes!" and a clear defense of why. Sarah responded to this question by stating, "And making mistakes is actually better for your body...it helps you realize 'I shouldn't do this again because otherwise I could get in the same situation, and I don't want to be in that situation again.'" A majority of the students indicated in the survey that they enjoyed challenges and would prefer learning if it was more challenging. All six students interviewed responded that they would rather learn something that was a bit more challenging rather than it coming easily to them. In addition to this positive articulation regarding challenges and mistakes, students also were easily identifying others' use

of growth and fixed mindsets. Outside of the growth mindset lessons, students were identifying, for example, a character in our literacy mentor text's use of fixed mindset. They were able to recognize this concept outside of the contextualized lessons, which demonstrated their understanding of the concept.

Despite this high amount of articulation regarding growth mindset, the application of the concept proved to differ, specifically in the classroom setting. When looking at student reflections and headnotes from various growth mindset lessons, students were able to apply growth mindset concepts outside of the classroom on a consistent basis. Contrary to this, students experienced a high amount of difficulty in applying growth mindset to the classroom and academics. Specifically, when looking at students' reflections on their use of a fixed and growth mindset, a pattern emerged across many of the responses in which students' examples of using a fixed mindset dealt with academics and their examples of using a growth mindset dealt with an activity outside of the classroom. An example of this pattern can be seen in Figure 1 through a sample of one student's reflection.

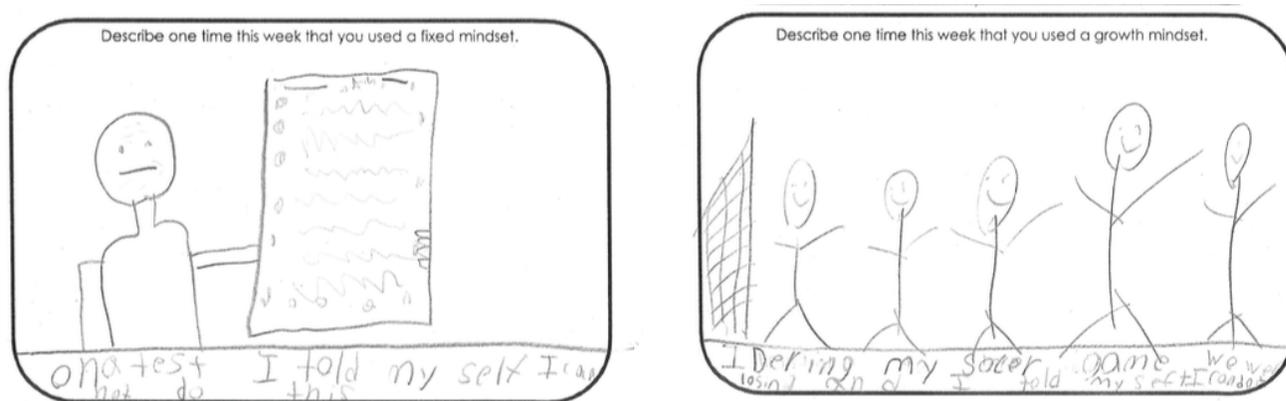


Figure 1. Braden's mindset weekly reflection. "On a test I told myself I can not do this."

"During my soccer game we were losing and I told myself I can do it."

This pattern was one that puzzled me initially when beginning to analyze the data. I had anticipated that students' application of this concept would be one that would easily be

transferred into the classroom due to the context and nature of its presentation being at school. Through personal teacher reflection, I was led to the conclusion that I should present this data to the students in order to understand their perceptions of using a growth mindset. I drew out a T-chart with the titles of “Growth Mindset” on one side and “Fixed Mindset” on the other. I listed on the growth mindset side “ballet, soccer, basketball, gymnastics, cleaning my room, and helping my siblings”. On the fixed mindset side, I had written down “math test, basic facts, problem solving, and writing.” All of these examples were derived from the students’ mindset weekly reflections. I simply asked the students what they noticed. This student-led conversation exploded, leaving me with several important sub-themes that emerged as to why there was a mismatch between student articulation and application, specifically in the realm of the classroom.

The students immediately recognized the contrast of application inside and outside the classroom. When asked why they thought this was, students voiced that when work was tied to a grade, they tended to use more of a fixed mindset due to the fear of getting a bad grade. Emma said, “You don’t get grades for like riding your bike so it’s a little easier to try again.” Students also vocalized the value engagement plays in regard to mindset use. When participating in activities outside of school such as sports, music, playing with toys, etc., students find these activities to be “more fun,” and as Michael said, “It’s easier to use a growth mindset in things outside of school because we are playing and having fun with them.” Students then jumped to the idea of socialization, and the ease of applying growth mindset when you are able to talk out your problems and work through them with others. As Amanda said, “It’s easier to plan what you are going to do with someone else. Like you can talk something through and not get so frustrated when you get confused.” Hannah added to this by saying, “But like when I’m taking a math test, I have to do it by myself and not talk to anyone. So, I can get into that fixed mindset.”

Lastly, the students pointed to the idea of choice. Rachel said, “When you get to choose what to do, it’s easier to have a growth mindset because we chose to do it and are going to work hard to do that thing.” Students’ application of growth mindset outside of the classroom is definitely defended by these underlying perceptions that the students held.

When seeking to identify this difference in student articulation and application, students’ perceptions of using a growth mindset were highlighted. Students do perceive growth mindset positively and are able to articulate the strengths that accompany it in a confident manner. They have been able to apply these concepts to their lives but have perceived it to be easier to accomplish outside of the classroom rather than inside of the classroom due to factors such as grades, engagement, socialization, and choice. The student-led nature of the study allowed the students to unwrap the data themselves and articulate the challenges that can accompany applying this concept directly into the classroom due to the nature of the operation of the school system.

### **Gifted Learners**

Having the gifted and talented students clustered in my classroom allowed for a unique population of students going into the study. A component of this study sought to identify if there were any differences in responses to the growth mindset lessons among the typical, high-achieving, and gifted students. By looking at survey results, observations journals, and the interview with my co-teacher, there was not necessarily a significant difference amongst any grouping. Despite this, the gifted students tended to perceive and approach the topic of growth mindset with more intensified feelings. When looking specifically at the gifted students’ reflections to failures and mistakes, the negative feelings they expressed were much more intense and severe in comparison to the other students. For example, rather than words such as “sad” or “frustrated,” many of the gifted students described feelings such as “depress[ing],” “horrible,”

and “really angry” in regard to making a mistake. The severity of these negative feelings bled into the idea of perfectionism. This is a common struggle present among many of the gifted students in our classroom. As Max even stated in an interview in regard to being perfect: “Well like I am, or I want to [be].” These severe negative feelings towards failure and challenge coupled with the nature of perfectionism were critical components of understanding student affect, specifically of understanding student social and emotional intelligence in gifted students.

Looking back at one of the findings under the teaching and learning process, the act of reflecting was found to be pivotal but challenging for students. As seen through my headnotes and journaling, a couple of the gifted students showed a harsh dislike and struggle with the reflection piece, but it was not due to the abstract nature of the concept that caused others to struggle. Specifically, conversations with Max come to mind during each week when students were asked to reflect on their use of a fixed mindset and a growth mindset. Sitting in the back corner, I could see Max writing very aggressively and then erasing, with a red face and tears welling in his eyes. After letting him grapple with his emotions for a few minutes, I headed over to him to ask him what was going on. He responded, “I never used a fixed mindset this week. I never made a mistake or messed up all week. I can’t do this!” This opportunity was one of many with Max in which we seized as a learning opportunity. Despite talking with him and walking him through his emotions, he refused to reflect and use this experience as a time he used a fixed mindset. To him, using a fixed mindset was perceived to be a great weakness and a sign of imperfection. The following week came coupled with the same reflection prompt. The aggressive writing emerged again, accompanied by tears and the drawing of broken hearts all over the page. We walked through the exact same conversation as the week prior, but this time the ending was not the same. Max wrote on his reflection paper that he struggled during this time and described his negative self-talk, as seen in Figure 2 below.

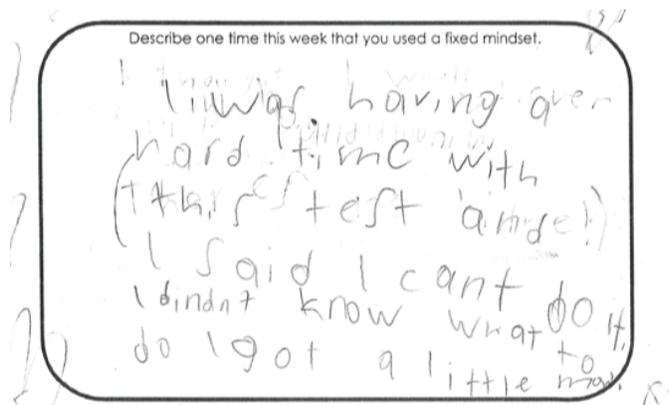


Figure 2. Max's mindset weekly reflection- fixed mindset response. "I was having a hard time with this test and I said I can't do it. I didn't know what to do. I got a little mad."

An obvious change in vulnerability, honesty, and acceptance of failure arose within Max throughout this teaching period. Though he served as our most severe example of a perfectionistic gifted student, many of the other gifted students developed a higher recognition and appreciation of learning from a mistake.

The concept of growth mindset and fixed mindset was one that was less abstract for the gifted students, but it was one in which they wrestled with the most in their application of the concept. Throughout all of the lessons implemented into the classroom, the gifted and talented students definitely voiced the most emotion and opinion of the concept. I do believe, though, that these lessons proved to be extremely meaningful to the students, specifically in their regard to handling negative feelings with failures and their desire to achieve perfection. Sarah stated in her interview, "Before growth mindset, I really liked being like perfect and getting like A's on everything and that's why I always got so nervous when we had like spelling stuff or something. And so yeah, I kind of wanted to be perfect at everything." Whereas now, she stated that "Well I feel happy because I want to make mistakes. Like I don't try to make mistakes, but I want to make like a mistake every now and then like to help my body learn because it's sometimes it's really the only way you can learn." The gifted students still respond to challenges and failures

with some apprehension and dislike, but as seen through my journaling, observations, and interview with my co-teacher, there has definitely been a lower frequency of meltdowns and outbursts due to moments of imperfection.

Lastly, the subthemes of mindset in regard to engagement and choice that were discussed prior are critical when looking at the gifted population. The students that initially voiced each of these ideas were identified as gifted. Sarah even vocalized during the very first growth mindset lesson that she typically uses a fixed mindset during social studies because she finds it boring. It is easier for her to check out and not present a high amount of effort due to her lack of engagement. When thinking about my sub-question regarding students' perceptions of using a growth mindset, I found that gifted students, in particular, perceived using a growth mindset to be more beneficial when doing an activity that stems out of their own personal engagement and choice. This can be difficult to fulfill constantly within the classroom setting but is important to consider when providing instruction for the gifted population.

Overall, it proved to be that the major findings elicited from the study applied to all students - typically-developing, high-achieving, or gifted. There were subtleties present, though, that highlighted the uniqueness of a gifted student's brain in response to a topic such as this that required a sense of humility and self-reflection specifically in regard to perfectionism, mistakes, and challenges.

### **Implications for Teachers**

The topic of growth mindset is one that is heavily prevalent among the field of education, specifically when looking at the secondary and post-secondary levels of education. Prior to conducting this study, as I was researching the topic, I noticed that there was a lack of studies and information regarding this topic at the elementary level. Based on the findings elicited from my study, I believe that, despite this being an abstract concept for young children, it is

immensely valuable for students to be exposed and taught about their brain and the learning process at a young age in order to approach learning in a more positive way in the future.

When teaching the concept of growth mindset to a class of seven and eight-year-olds, misconceptions were quick to arise. Though I did not initially anticipate them, reflecting on their emergence showed how this was a natural process for the students as they began to grapple with such a personal and abstract concept. It is imperative for teachers not to shy away from these misconceptions or disregard teaching the concept in its entirety due to moments of confusion. Teaching growth mindset is a process that requires time, reflection, reteaching, and modeling the process of making connections. Using the comprehension strategy of making connections that is used in literacy allows individuals to better comprehend a text. The same principle applies when teaching the concept of growth mindset. Modeling for students how to make connections regarding this topic to their own lives, both in and out of the classroom, helps them better understand this concept of mindsets. The implication for teachers is to embrace moments of misconceptions and model the process of making connections in order to bring an abstract concept to a more concrete level.

As my students began making an abundance of connections toward the topic, I began observing the pattern of growth mindset use outside of the classroom. Through reflection as well as student voice and opinion, it became apparent that students perceived using growth mindset to be easier accomplished in activities outside of the classroom and more difficult in the classroom due to factors such as engagement, choice, and evaluation. I believe that this finding is one that holds the largest implication for us as members of the education system. Much of what we ask of our students in the classroom contradicts the principles behind growth mindset. The grading system lies at the forefront of this. For example, we teach our students to celebrate and value mistakes, yet when they make a mistake on a math test, we count the answer wrong, and they

end up with points docked from their grade. In order for students to fully be able to embrace the growth mindset concepts within the classroom, I think that the overall structure and nature behind the school system is going to have to change so that students truly see the value and benefits that stem from growth mindset use in all areas. As for teachers, though, the power of providing intentional and timely feedback proves imperative - allowing students to see their potential, ways in which they can grow, and how they can create goals in order to reach various levels of achievement.

Lastly, when embarking on teaching such a personal and reflective topic, such as growth mindset, it is pivotal to embrace and understand the emotions that students will bring with them towards this topic. When thinking of the gifted students in my study, several conversations and moments of reflection were spent wrestling with this desire to be perfect at everything. Rather than observing this perfectionism and dismissing it, it is imperative that students understand the motive behind many of the feelings they bring with them to the learning process. This can be challenging with a younger audience but also extremely valuable. Being able to begin the reflecting piece at a young age allows individuals to understand the learning process and recognize what their brain is doing when it comes to encountering challenges. Reflecting and analyzing lies at the higher ends of critical thinking. The earlier students are taught this, the more success, I believe, they will find as the progress in their educational journey and futures.

The act of teaching growth mindset concepts is one that I see being integrated into my future teaching practices, regardless of what grade I am teaching. I believe the strengths that are elicited from withholding a growth mindset are imperative to embody in our fast-paced and competitive world. I do believe further research is needed to be done, specifically at the elementary level, as further questions have emerged as a result of this study. With a small sample size, I would be interested to see if perceptions were consistent amongst other students,

and specifically if these differed among grade levels. In addition, how are grades or test scores impacted by the teaching of growth mindset? The participants in this study argued that it was hard to transfer these concepts towards academics due to the nature of the grading system, so I am not sure if grades would have been impacted, but it was also something I did not measure for the design of this study. Further studies solely looking at the gifted population would also allow for further confidence in the findings regarding their perceptions to be defended. Research regarding the topic of growth mindset is still needed amongst the education field, specifically in regard to elementary-aged students, in order to continue to understand the impact that growth mindset interventions can have on students in regard to their perceptions and effort in the schooling system.

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## Appendix A

## Mindset Survey

1. People who are smart don't have to work hard.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



2. There are some things that I will never be able to be good at.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



3. Mistakes help me learn.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



4. I enjoy learning something that is brand new.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



5. When something gets too hard, I want to quit.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



6. When I make a mistake, I feel disappointed in myself.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



7. There is only a certain amount of things that I can learn.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



8. I like learning the best when it's easy, and I can master it quickly.



Strongly  
Disagree

Disagree

Agree

Strongly  
Agree



9. How do you feel when something is hard for you to do?

10. What does having a growth mindset mean to you?

## Appendix B

### Codebook

Level II Codes:	Level I Codes:	Definition of the code:	Example of the code:
<b>The Teaching and Learning Process</b>		Factors that developed or contributed throughout the growth mindset lessons that we taught to the students	“It expressed to me how important it is to provide clear definitions of these mindsets for students, rather than assuming they know what they mean.”
	Misconceptions and clarification in teaching needed	Concepts that were misinterpreted which required reteaching and clarification from the teacher	“I came to the conclusion that students were associating accidents with mistakes. This was a clarification that I believe the students desperately needed. We immediately stopped the students in their writing and brought them back to the rug.”
	Teacher Reflection	The importance of the reflection piece as a teacher throughout this process; references to this need for reflection as well as examples of reflection pieces	“Overall, I love that the students were able to look at the data alongside of me and interpret it their way. Reflecting as a teacher led me to this lesson, and then reflecting alongside my students led me to some new ideas that I had not considered.”
	Student Reflection	The process of students taking time to think about their mindset and thought processes amongst various situations	“The personal reflection piece was a challenge for many students, as they learned to begin unpacking their emotions and understand why they felt a certain way.”
	Connections	References students made to outside concepts throughout growth mindset lessons including extracurricular activities, home life, literature, etc.	“When I first started jazz, I wanted to quit. I had to keep practicing and practicing to get better at certain moves though.”
	Seize Opportunities	The act of using various situations throughout the day in order to personalize and further explain the concept of mindsets	“‘We are going to get creamed!! I’m so scared.’ Mrs. Anderson stopped him and asked, ‘What kind of mindset do you think you are using when you talk like that?’”
	Abstract concept	The nature of growth mindset being an intangible	“The idea of understanding one’s thoughts and

		and theoretical concept, making it challenging for many students to fully grasp and understand	emotions is such a pivotal component of using a growth mindset, but it is also a very abstract concept and component that students are not used to doing.”
	Student led	The development of growth mindset lessons were initiated and guided by student needs and interests	“...because I think the lessons led us to where the kids were. And so then we had to go from where the kids were and sometimes bring it back.”
	Understanding how our brain works	Discussing with students the structure and function of the brain when using a fixed or growth mindset	“Where I think that in the past, you kind of knew...you know you got to move on and you got to do it this way, but we really never gave them scientifically what that looks like in your head, but in a very basic way.”
	Teach first thing	The desire to teach growth mindset concepts to students at the beginning of the school year	“I would move it to the very front.”
<b>Understanding Student Affect</b>		The social and emotional components of students in regard to the learning process	“I would have been really mad, and it would have been hard for me to look at it like that.”
	Negative feelings with failure and challenge	Students’ reactions and thoughts to failures and challenges in the past were poor which included frustration, anger, sadness, etc.	“I kind of feel bad and sometimes cry.”
	Vulnerability and honesty of students	References to students’ responses being open, unhesitant, and honest when sharing	“There was no hesitance or embarrassment...”
	Perfectionism	The feeling in which an individual desires everything they do to be completed without fault	“He talked about how he had not made any mistakes that week and did not know of a time when he ‘messed something up.’”
	More relaxed/free	Students feel more at ease and comfortable when making mistakes or encountering challenges	“I feel like that kind of freed up that group to be like ‘Okay, I can do this. It’s okay if I make a mistake.’”
<b>Student Articulation vs. Application</b>		Examples of use of growth mindset as well as reasons why articulation and application of the concept may differ	“Well I feel happy because I want to make mistakes.”

	Mindset and engagement	The more engaging and ‘fun’ a concept was seen, the more likely an individual is to use a growth mindset	“...it’s easier to use a growth mindset in things outside of school because we are playing and having fun with them.”
	Mindset and the grading system	The tendency a student has to elicit a fixed mindset when a grade is tied to the task at hand	“...you don’t get grades for like riding your bike so it’s a little bit easier to try again.”
	Mindset and the social learning process	A growth mindset is evoked more easily when able to socialize and communicate throughout learning	“...when you can talk to people and work together, you can tell other people ‘You can do it’ and they can tell you that too.”
	Mindset and newness	The intimidation that comes with unfamiliarity can lead to a use of a fixed mindset	“We are more familiar with it, so it is easier to use a growth mindset when something isn’t brand new.”
	Articulation that mistakes are okay	Students clearly explaining the reason why mistakes are positive learning experiences	“...it helps you realize ‘I shouldn’t do this again...’”
	Ease in identifying others’ use of growth/fixed mindset	Students’ ability to quickly recognize mindsets in others	“About halfway through the story, Emma raises her hand and said, ‘This girl is using a fixed mindset.’”
	Understanding the importance of not giving up	References to students defending the importance of perseverance	“I want to do track in the Olympics. I run outside in my backyard every single day.”
	Self-talk	References to and examples of student self-talk	“Like I used to say like, ‘I can never do this’ or ‘I’m never going to be good at this.’”
	Ease of applying growth mindset outside the classroom	Students naturally gravitating towards using growth mindset outside a school setting	“It feels hard when I try to do a headstand. I cannot do it, but I do not give up even though it seems hard.”
	Difficulty in applying growth mindset to academics	Students struggling to use a growth mindset within a school setting	One day when we were doing a question that I did not know the answer...and I felt really worried of what my grade was going to be.
	Application of growth mindset	Examples of students applying and using a growth mindset	“...his self-talk is better and improved. It’s a lot more positive.”
	Articulation of enjoyment of challenge	Students voicing that they enjoy learning when it’s more challenging than when it’s easy	“More challenging...Because like you learn more new things.”
	Mismatch in articulation and observations	What students say they believe about growth mindset does not match their actions and use of it	“This is where I began to notice a mismatch in what students were articulating in responses and what I was

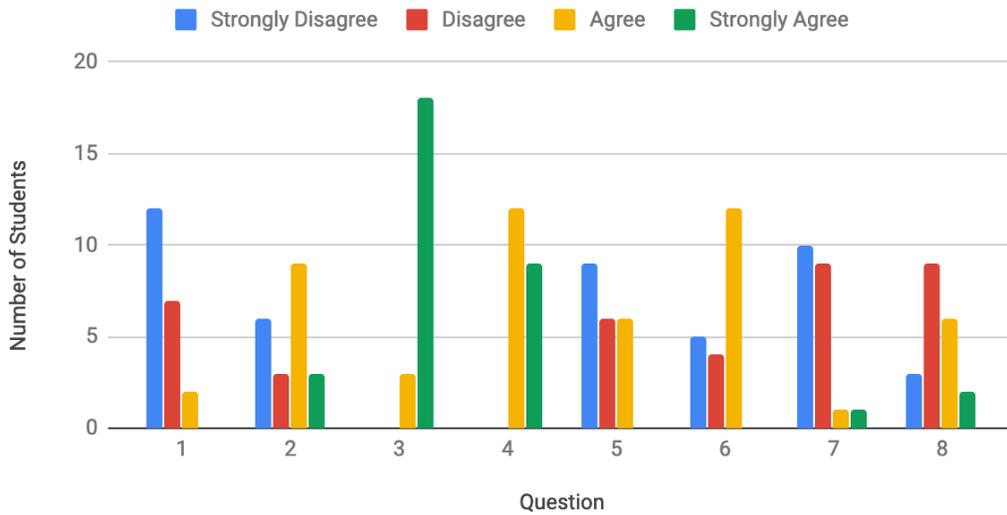
			actually still observing in the classroom.”
	Articulation of what growth mindset is and its importance	Students’ ability to explain growth mindset and the importance of having one in life	“Because like it helps your brain grow, and if you always used a fixed mindset, you wouldn’t learn anything.”
<b>Gifted</b>		The responses of gifted students towards the growth mindset lessons	“These two students demonstrated the highest understanding of growth mindset...”
	Mindset and engagement	The importance of relevance and meaning to a gifted student within teaching affects their mindset	“I think I have a fixed mindset towards social studies. I find history to be very boring. I am still trying to pay attention, but I have a hard time wanting to learn new things in social studies.”
	Mindset and choice	The idea that a student’s choice in participation of an activity can dictate their mindset	“When you get to choose what to do, it’s easier to have a growth mindset because we chose to do it and are going to work hard to do that thing.”
	Negative feelings with failure and challenge	The intense negative emotions gifted students brought when reflecting on times of failure	“I felt horrible.”
	Perfectionism	The desire to not fail in any area	“I want to be perfect at everything.”
	Student reflection	The process of students taking time to think about their mindset and thought processes amongst various situations and the emotional burden this developed amongst many of the gifted students	“The problem with this is that I have to spend I have to spend like 5 seconds thinking about it.”
	More relaxed/free	A change in students’ responses, easing the nerves of many of the perfectionists	“Specifically, she is not as nervous anymore, as she used to feel so much pressure in order to be perfect at everything she did.”

Appendix C

Quantitative Data from Survey Results (Frequency Counts)

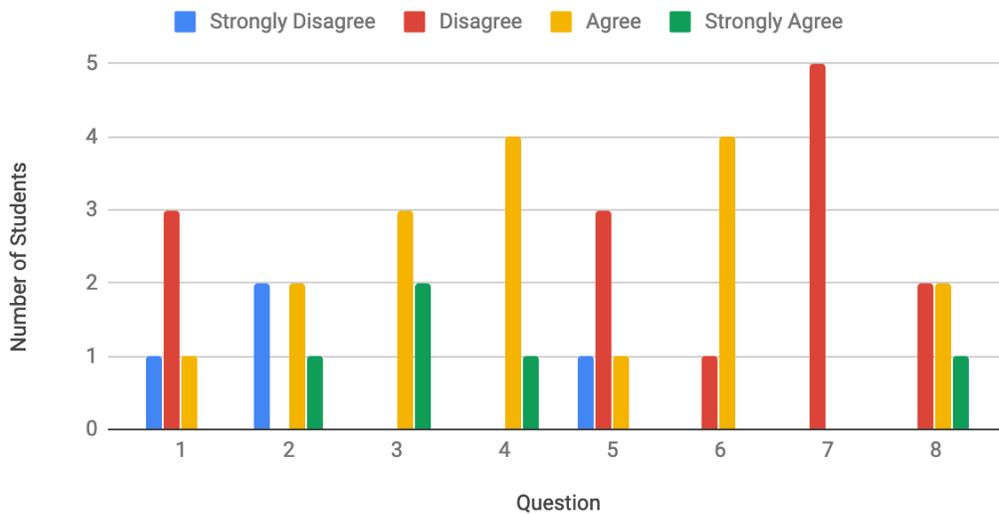
Responses to survey (all students)  
 Total Number of Students: 21

Mindset Survey Responses- All



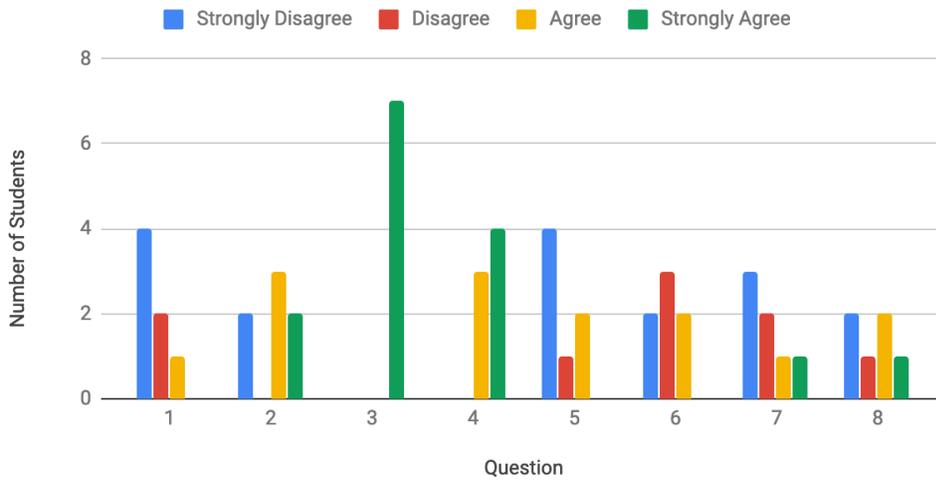
Responses to survey (typical students)  
 Total Number of Students: 5

Mindset Survey Responses- Typical



Responses to survey (high-achieving students)  
 Total Number of Students: 7

Mindset Survey Responses- High Achieving



Responses to survey (gifted students)  
 Total Number of Students: 9

Mindset Survey Responses- Gifted

