

Question: What happens when I introduce a large, independent research project as a final performance?

Sub questions

- What happens to student motivation and self efficacy?
- Do students improve their nonfiction comprehension and summarizing skills?
- What happens to students' growth mindset?

Rationale

I am a middle school reading (language arts) teacher and loop with my students from 6th grade until 8th grade. I want to take advantage of the opportunity to teach the same students for several years and build on the skills they already have (and encourage them in the earlier grades to master these skills for application this year and in future years). In the past when students had opportunities for independent research their comprehension and paraphrasing abilities were a limiting factor for success. Student organization and motivation were, at times, also issues. As such, I have largely shied away from projects involving open-ended questions and true student choice. Students have had opportunities to choose their own topics, but I have generally steered them toward a few for which I have chosen resources. My most responsible and often high-achieving students have gotten more choice, but I have offered more limiting opportunities for my lowest performing and least motivated students, who sometimes would benefit the most from such choices.

I have been hesitant to engage in project based learning because I feel my students are not equipped with the skills needed to comprehend these texts independently. Organizational skills are also a concern. Because I have watched them miss big, important ideas in texts we have studied together, I have been reluctant to give them projects with texts with which I am even less familiar. I have seen this as something that takes too much time for too little reward. Another very real concern is logistical; as a teacher to 90+ students, it is difficult to become familiar with their varied interests and topics. A short project, I worried, would keep me up late every night checking in on student progress and research.

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Yet if students were motivated throughout the year by a project, its value would be felt for a longer amount of time. My action research project seeks to determine the benefits of a large project based learning assignment toward the end of the school year. My hope is that this project will act as a motivator for students to refine their nonfiction skills. I am also using the project as an opportunity to get to know my students and their interests on a deeper level.

This year I am implementing a program called ThinkCERCA in my class to focus more on nonfiction reading, discussion, and writing. CERCA is an acronym for claim, evidence, reasoning, counterargument, and audience-specific language. This resource builds on work I have been doing in my classroom for several years, but it gives me tools to do it more effectively. Students have individual accounts with which I can assign grade-level specific articles that share a common topic. It is easier for me to have students working on nonfiction articles at their instructional level without scrambling to find these resources myself; it also allows students to discuss related topics and challenge themselves with related but perhaps more difficult texts. The program also has small comprehension quizzes attached to articles to help students and I determine their depth of understanding in an efficient way. The CERCA framework for writing and discussion is consistent with my teaching style and has, so far, been well received by students. CERCA is going in its initial implementation in my class, but the vast majority of my students could greatly improve their note-taking, paraphrasing, and comprehension skills. These skills are important but not always fully appreciated by students. It can be hard to see the immediate reward from such difficult and often tedious tasks. Brainstorming and exploring a topic for a large research project, I hope, will help students see a more immediate use for these skills, motivating them to improve upon them throughout the year.

If the project is successful, I anticipate seeing students more motivated to improve their nonfiction comprehension and note taking skills. I also hope to see how students connect what we have been practicing with ThinkCERCA to what they are asked to do with a more open-ended research project. Finally, my 6th, 7th, and 8th graders have been studying Carol Dweck's studies about growth mindset and intelligence, the belief that students should be praised for hard work over intelligence and encouraged to work hard and take risks rather than be praised

for “innate” intelligence. This project seems well-suited for the growth mindset oriented student. In continuing to discuss this large project throughout the year, I hope it will provide ample opportunity with which to continue our discussion of growth mindset. For some students, I hope the project and growth mindset will reinforce each other, encouraging students to be more perseverant and open to learning from mistakes, something I anticipate will be useful for the research project. As a teacher, I frequently try to speak to my students in ways that encourage a growth mindset, but I know I can be more effective. This project may offer a more concrete example to discuss with my students. This action research will allow me to lead by example; I anticipate I will be having some success that comes from learning from “failure” and working around difficulties. When working on this project, I hope to be somewhat transparent with my students that this is a new opportunity for me to work hard and learn as well.

School Context

My school serves students from Kindergarten through grade eight, with one classroom per grade level. Its enrollment is almost 280 students with a classroom capacity of 32 students. My campus was founded in 2011 and is one of the campuses of a large charter school network. It is located in a neighborhood that is predominately Puerto Rican with a significant Mexican-American population as well. The student body is 94.2% Hispanic, 4% African-American, 0.7% White, and 1.1% other. 98% of students qualify for free and reduced lunch and 38.8% are categorized as having limited English.

In grades K-5, students are in a self-contained classroom. In grades 6-8 (where I work) there is a middle school model with each of the three teachers responsible for small-group Guided Reading instruction for the first hour of the day; after that, students rotate between three teachers. Students loop with these teachers, so they have the same teacher for Math, Reading, and Science/Social Studies. Both the Math and Reading teacher (me) have been teaching at the school since its founding; the Science/Social Studies teacher joined our staff the following year.

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Reading instruction is focused on the Common Core standards. Guided Reading is conducted by the homeroom teacher for one hour each day and involves groups of 4-6 students reading books at their instructional level; the structure is a blend of Guided Reading and Literature Circles. Whole group instruction includes a common text per quarter (a read aloud novel at or above grade level) and a variety of assessments, including discussions, essays, multiple choice exams, and some projects.

Students have recently started using the ThinkCERCA program which helps students comprehend nonfiction texts through online highlighting, discussion, and argument building for writing. CERCA is an acronym for claim, evidence, reasoning, counterargument, and audience appropriate language. This instructional tool is just being rolled out this year, but prior instruction has had a heavy focus on Accountable Talk (supporting claims with evidence, adding on to the ideas of others, and describing reasoning and conclusions clearly when discussing). Writing was officially taught by the Science and Social Studies teacher previously, but Reading instruction previously included a strong emphasis on building a thesis, finding evidence from the text to support the thesis, and explaining the connection between the thesis and evidence. The implementation of ThinkCERCA and the bundling of Reading and Writing with the same teacher should allow a higher focus on writing and its connection to Reading skills.

Special Education services are provided with both push-in (special education teacher is in the regular education classroom) and pull out (separate instruction in the resource room) services. For Reading instruction, an instructional aide provides push-in minutes on a daily basis to each grade in middle school (grades 6-8) and some time is spend pulling students out to provide additional time on class assignments and to focus on goals identified in the IEP (individualized education program). Weekly collaboration time for general education and special education teachers is built into teachers' schedules to provide 20 minutes one morning each week.

Prior to our school leasing the building it was used by another charter school and before that was a Catholic school. The building is directly next to the church that used to run the school, and the building is still used by the church some nights and every weekend.

Literature Review

Motivation

Improving student motivation is an important factor to improving their engagement and achievement in reading. If students spend less time avoiding reading tasks, they are more likely to achieve academically (Guthrie et al. 2013). The way students view themselves is an important factor in their motivation. Students who have previously failed and view the reasons as outside of their control are unlikely to be motivated to work harder, but students who think they can gain the skills necessary to be successful can be more easily motivated (Anderman & Midgley 1998). Keeping students motivated while promoting rigor and the analysis of complex texts is a challenge I face in my classroom.

Giving students more choice in what and how they learn has been linked to improved student motivation (Anderman & Midgley 1998). The challenge for me as a teacher is to give students choices that will not negatively affect their learning. Some types of choice are easier, such as choosing to work alone or with a partner or choosing from several topics or articles I have found. Other choices, such as open-ended topics or independent research, can be more difficult to manage; students may choose topics or articles with which I am less familiar (and thus have trouble rigorously teaching). In an effort to keep student engaged I have tried to choose articles and topics that are high interest to students and to allow choice of a small number of topics and articles that I can be more expert in.

These approaches alone, however, come with their own drawbacks. If I am not preparing my students to conduct independent research, they will be unprepared for high school and college. I have used their limited note taking and analysis skills as excuses to restrict their texts to ones I can deeply discuss with them, but in doing so I have also limited their agency to take control of their topics and research, possibly decreasing their motivation. I also realized that my anxiety over my students' preparedness has held me back from trying project based learning. Instead of using my students' lack of skills as an excuse, I am making an independent research project a reality this spring and speaking openly to my students about the skills we will be practicing to prepare for it. I am hoping this will promote greater

motivation for them to learn skills that are not always exciting to practice (paraphrasing, note-taking, and writing) while also fostering a growth mindset view in our classroom.

Growth Mindset and Self-Efficacy

One of the few articles I can honestly say changed my life was Po Bronson's "How Not to Talk to Your Kids: the Inverse Power of Praise." He describes the research of psychologist Carol Dweck, who asserts that students who have a growth mindset are significantly more open to challenges and learning from difficult situations instead of avoiding them (2007). Students with a growth mindset can be described as having grit or perseverance; students with an opposing mindset (fixed mindset) would possess these traits in limited quantity. Fixed mindset is the belief that your intelligence cannot be significantly changed. These people believe that intelligence in an area is something they "naturally" have or do not, and it can create pressure to constantly prove oneself and maintain the image as someone who is smart. Growth mindset, on the other hand, sees natural aptitude as a starting point that can be improved through practice and hard work. Growth mindset assumes that effort can make you better and smarter; successful students are not born but are instead made through perseverance and education. Because growth mindset recognizes that hard work and learning from mistakes can make someone better, failure on individual challenging tasks can be better tolerated (Dweck 2006).

People with a fixed mindsets and growth mindsets see themselves and the world around them in fundamentally different ways that are crucial to education. Dweck (2006) presents a situation where a student went to an important class and received a C+ on the midterm (a disappointment), then received a parking ticket, then called a friend to commiserate only to have the friend be dismissive. This situation is geared toward college students, but the obstacles are similar to those faced by my students on a regular basis. She found that students with a growth mindset tended to react in a way that highlighted their agency in the situation. These students focused on asking the professor for guidance, studying harder for the next test, and reaching out to their friend to say their feelings were hurt or to ask if their friend was distracted with their own problem. Students with a fixed mindset, on the other hand, used language that spoke to a larger, overall failure as a person. Students described

themselves as losers, unlucky, and pitiful. Students generalized these situations to describe their life as unlucky or cursed. In these responses, they saw themselves as victims of circumstance rather than active participants in their life able to change the outcome (2006). A growth mindset appears immensely valuable in helping students learn from feedback and work through setbacks, things that are incredibly important during research and project-based learning.

Dweck's research shows that teaching students about growth mindset can lead to higher achievement than traditional test preparation (Bronson 2007). As a class, we have read articles about Dweck's research and had connected her findings to our classroom. I have told students that I will not praise them with lines such as "you are smart" but will instead praise effort and specific accomplishments based on her experiments. While incredibly important to enforce on a daily basis, my action research will investigate whether a larger independent project will encourage perseverance and growth mindset in students. In discussing the project ahead of time, I hope students will anticipate the skills and mindset needed to complete the project and will value their perseverance and effort toward these goals for the months leading up to the project. The project will become a talking point that will encourage students to see themselves as successful based on their perseverance (and will give me an opportunity to identify students who are in a fixed mindset and hopefully encourage them to see themselves differently). Students need to feel challenged without being overwhelmed emotionally or cognitively to perform their best (Mctigue & Liew 2011). Fostering a more perseverant attitude in students (a growth mindset) could go a long way toward emotionally preparing them for challenges.

Another approach used to prepare students for success in demanding projects is an assets-based approach in which students identify their knowledge, strengths, resources, and abilities to problem solve. In one project conducted in an after school setting, students were given the opportunity to work on issues affecting their communities and were empowered to come up with solutions that were presented to the community. Having a real world application of his project to the community was motivating to an adolescent involved in the project and improved the reading and communication abilities of the student profiled (Wright & Mahiri

2012). One important difference to note is that this study detailed a focused intervention involving just a few students (one in particular) with adults that viewed their relationship as more of a sponsor or mentor than a teacher. This research highlights potential benefits of student choice and meaningful projects to improve literacy, but the conditions would not be replicated in my classroom.

The environment in which a project takes place is important to its success, and team building activities were used to identify assets and develop a collaborative, positive environment. Their activity focused on identifying the kind of group member each person was, in this case, represented by different animals (Wright & Mahiri 2012). I like the idea of having specific activities that encourage students to reflect on their personality within a group project setting—having some self-awareness on their roles in a group (and giving students an opportunity to hear feedback from their peers) could be beneficial to developing social-emotional skills needed to be successful. Even if students are primarily working independently on their projects, it can be useful to know what kinds of strengths and targets people have and what complementary strengths are possessed by their peers. This would also complement some of the social-emotional objectives currently being addressed in my classroom.

Project-Based Learning

The largest change to my classroom this year will be a larger implementation of project-based learning. I am hoping this project will motivate students to persevere when learning the management skills needed to be successful on the project; I also hope that the project itself will be a learning opportunity to deepen reading skills and student knowledge on a topic of their choice.

My 8th grade students presented their projects to the students in grades 5, 6, and 7 to give them a larger audience. Creating something for the purpose of presenting it to others can deepen student understanding of a topic. Instead of being passive learners as they can be with other activities, students are more actively involved in synthesizing and evaluating information. Students also described feeling some performance anxiety that motivated them to do their best work because they know others outside of their classroom would see it. In a multimedia project

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described by Hernandez-Ramos and De La Pas, student surveys revealed that most students agreed that the project helped their learning (average score of 4.19 on a scale of 1-5 with 5 being strongly agree) and most students enjoyed the project (4.06). Additionally, most students agreed that the skills learned through the project could transfer to work they will do in the future (3.97). The students involved in project-based learning also demonstrated larger gains in content knowledge when compared to peers exposed to a more traditional learning curriculum that did not involve a culminating project (Hernandez-Ramos & De La Paz 2009).

Project-based learning (PBL) engages students in extended inquiry centered on authentic, complex questions. Some of the major goals of PBL are to: recognize student's motivation to learn as innate and believe in their ability to perform complex tasks and be taken seriously, make student projects central to their learning and the curriculum, highlight important issues that promote in-depth exploration of the topic, require self-management and use of technology, promote investigation, require meaningful feedback throughout the process, allowing students the opportunity to learn from their mistakes and experiences, communicate high expectations on rigorous activities, encourage collaboration, promote presentation and evaluation skills. One of the difficulties in implementing PBL, however, is the learning curve for students acquiring the necessary skills to succeed. Although these projects can teach valuable skills such as time management, self reflection, a certain level of competency is needed to embark on the project that many students do not possess (or many teachers fear they do not have) (Vega & Brown 2013). The deepened content knowledge from PBL is important, but I am especially interested in the other skills—by challenging my students and myself to be ready for this project, I am hoping to use this as an opportunity to more intentionally teach these skills.

Many students lack the skills needed for success on PBL, such as time management, organization, collaboration, and speaking skills. Maturity is a concern among some middle school teachers. Modeling or learning through the process can help. Other teachers expressed the need to explicitly teach the skills needed to complete these projects, such as taking notes from internet sources. Templates for note-taking can also be valuable to assist students in including important information. Some teachers involved in a district-wide rollout of PBL expressed frustration in learning how to teach in a PBL model, commenting that 5 days of

training was insufficient and more modeling was needed. Some teachers reported anxiety with the new way of teaching and students were at times also resistant, which some teachers believed was due to the amount of work needed to complete the projects. A lack of clear expectations also seemed to be a source of anxiety for some students (Vega & Brown 2013). As someone who is embarking on PBL without the benefit of a week of training and district support, this study made me a bit apprehensive, but the use of guided practice on skills necessary for the project should help scaffold the work for my students. I am very good at providing rubrics to establish expectations to my students, so I hope that this will help minimize this problem in my classroom.

Although I am anxious about the success of this new project in my classroom, I am hopeful that the conversations surrounding it will positively impact my students and their mindsets. I am asking that my students value effort and learning from their mistakes, and so regardless of the end result I view this project as an opportunity for growth and learning.

Implementation

November and December:

Projected Timeline	What Really Happened
<ul style="list-style-type: none"> • Parent permission forms • Student survey (all students) • Introduce concept of project and gauge possible topics and student skills to develop • Review student work and identify areas of focus/need • Student interviews (select students) 	<ul style="list-style-type: none"> • Parent permission forms were signed during parent-teacher conferences in late November, so if parents had any questions I was in the building to answer them and a teacher could explain the nature of the project • Student survey (all students) • Introduced concept of the project and brainstormed a few topics as a class • Discussed skills needed for a project of this type in class, especially before assessments requiring these skills (paraphrasing and main idea, for example) • Student interviews were incredibly informal and mostly to gauge consent from case study students to be “under the microscope”

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	and willing to speak with me in more depth about their projects.
<p><i>Reflection:</i> I stayed true to most of the items on my projected timeline. We have a three week Winter break, and I decided I didn't want to have students working on notes or the project during break, so we did very little work on the actual project during this time.</p>	

January and February:

Projected Timeline	What Really Happened
<ul style="list-style-type: none"> Summarizing and paraphrasing practice with ThinkCERCA Discussions and essays requiring paraphrasing and note taking skills with some student topic choice Student reflection on areas of strength and target areas for growth Student exploration of possible topics and small study groups/work group formation based on topic and/or final project idea Additional activities for project-based learning 	<ul style="list-style-type: none"> We practiced summarizing and paraphrasing with several different types of texts—ThinkCERCA, a few songs (such as “Masters of War” by Bob Dylan), several poems during a poetry unit in late February, and in small group instruction during guided reading with novels. We wrote 2 essays requiring some note taking skills but which included limited student choice on topic and articles. Students reflected on their paraphrasing and essay writing abilities but were not given specific worksheets or assignments for target areas. I presented a week-by-week overview of skills to be addressed for the rest of the year in late February, especially to prepare for the project. Student feedback (through a mini survey and interviews) showed a positive response. At the end of February, students started to brainstorm their topic with several activities (free write list, mind mapping a topic, discussing the topic with a peer, discussing ways to make their topic larger and more focused with peers and as a class, etc.)
<p><i>Reflection:</i> I really wish I had spent more time working with students' topics and having them work on the first few sets of notes with more time to conference (even if this means the project rollout was more</p>	

gradual). Students who later switched their topics were usually at a significant disadvantage time wise, and several students took a while to find their focus and thus were not as efficient as they could have been. Topic selection is an essential component of this project, and while I allowed students to change their minds the timeline did not make this option as friendly as it could have been.

In all honesty, there were also significant stressors at both work and home that contributed to this time crunch/slower rollout of the project. Staff changes at our school involving this class required an enormous amount of time and energy to adjust to, and there were times I was unsure if moving forward with the project was in the best interest of students needed a more structured environment. I also had a death of a close family member which made planning more difficult. At the end of February, we discussed the project as a class and decided to go forward.

March and April:

Projected Timeline	What Really happened
<ul style="list-style-type: none"> • Projects dominate time in class as testing allows • Final exhibition of projects in April • Student surveys • Final student interviews and reflections 	<ul style="list-style-type: none"> • Project brainstorming, topic selection (round 1), and discussion of performance and rubric happened in late March • Spring break was March 30th-April 10th and notes on three sources were due upon return • Many students did incomplete/insufficient notes over spring break. Grades for the notes were overall low and may have contributed to poor morale by some students. • In late April, students complained that they were completing a science fair project at the same time and these projects felt too similar. We reviewed the expectations and logistics of the science fair project and determined that there was little overlap and little time commitment outside of class necessary for the science fair project. Almost all students (23 out of 28) rated themselves as “ready to get started!” at the end of our conversation, a sizable shift from the previous day (13 out of 28). • We reviewed expectations, map out deadlines, and created a

	<p>final draft of our rubric.</p> <ul style="list-style-type: none">• Many students asked to change their topics, which I expected would be part of the process. Others joined with a partner who had a better topic.• Students completed a schedule for the final three and a half weeks of the project using a Backwards Design method. Students were guided in a whole group discussion to think of appropriate deadlines for different components. A class “to do” list was created with these deadlines and handed out to students and shown to parents at parent-teacher conferences. A larger version was created on chart paper and references almost daily during the final weeks of the project.• Feedback, conferences and independent work time in class (almost 3 weeks) improved the quality of many students’ notes.• May 15th Project Presentations in the Cafeteria with surveys and interviews with case study students conducted the following week
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Reflection: PARCC testing (which was announced only weeks before we took it in March and had a second testing window in late April during our “crunch time” for projects) took a toll on our schedule. Distractions in February and March (cited above) pushed a lot of the initial research and brainstorming close to and into spring break, which I feared would compromise morale and work quality. This fear was not unfounded, and I think several less motivated students who didn’t do the work over spring break felt they were starting from behind and would have difficulty ever catching up. I felt very torn about timing—I wanted the project to take place late enough in the year so that it felt somewhat summative and could be used as a motivator for the majority of the year, but testing schedules and spring break made timing especially difficult (the timing of my paper and presentation for my fellowship also meant this could not be a true end of year project, which may not have been ideal for several other reasons as well).

Data Collection Methods

1. Student Research Notes and Conferences

Students were asked to give a full web address for their articles (all found online, but this was not a requirement) and to copy and paste the text in the left hand column; in the next column, they were to paraphrase or write the main idea of this section. The final two columns allowed students to comment or respond and for me to comment as well. The purpose of this format was for me to be able to see the original source to determine if things were paraphrased (which made assessing and giving feedback much easier, let alone understanding many different topics) and to create a document that could easily be used by students to write their final projects that did not require them to (always) go back to the original sources. Before attempting these notes students received instruction on paraphrasing using the “MOSS” technique (an acronym for the components of paraphrasing: the meaning of the text and paraphrasing is consistent; the order of ideas is changed; synonyms are used for a significant number of words or phrases; the writing is done in the student’s style; and direct quotes longer than three words—with some exceptions—are in quotation marks). This data was collected to inform conferences, many of which were transcribed for student quotes. See Appendix A for a student example and rubric.

2. Teacher Journal

I have used journal entries to reflect on my project, specifically on its goals, its schedule, how students have reacted to parts of the instruction and implementation, and what steps I can take next to further improve my instruction. At times, feedback from specific students is added when it helped me better reflect on how students were feeling about the project. As I worked through several difficulties, both logistical and personal, the journal helped me refocus and reflect on my work.

3. Student Surveys

Surveys were conducted in late November and again at the conclusion of the project in mid-May. Students were asked questions related to growth mindset, particularly whether they believed they could improve their reading and writing skills through effort. The survey also asked how important it was to be able to summarize, paraphrase, find the main idea, and take notes. Students were asked to rate the importance of these skills both in reading class and in their lives outside of reading class. My action research focused on my 8th grade class. Additional smaller surveys were conducted to check in with students' reactions to different steps in the project.

4. Student Conferences

I conducted conferences with students (alone and/or with their partners, as applicable); during the last 2-3 weeks of the project these conferences took up the majority of our class time. I typed notes on these conferences to help me track student progress and transcribed student quotes when possible. I used this time to follow up on comments I had given on their notes, note progress on various aspects of the project, give praise or pep talks, and make suggestions for improvement. Students talked with me between 2 and 5 times a week, depending on their needs. Originally I expected there to be a typed dialogue between me and the students on the front pages of student notes; however, few students completed these with the depth I had hoped and while that component was valuable (and its importance could be stressed) I found our face-to-face interactions essential for gauging student understanding and setting an appropriate tone in our dialogue.

5. Student Projects

The final projects themselves will demonstrate whether students were able to grasp the concepts and meet the challenges presented with this kind of project. Student motivation appeared evidence from the quality of most final products. I have included a brief description of the project and the grades each of my case study students earned.

6. NWEA/MAP Percentiles

I have decided to introduce the case study students using Northwest Evaluation Association (or Measures of Academic Progress) test scores (commonly called NWEA or MAP) because I believe this metric is widely understood and because it gives a more objective view of where these students have performed in reading. NWEA/MAP is a test taken by my students three times a year (fall, winter, and spring). It is taken on the computer and the questions are adaptive, getting more or less challenging depending on student performance. Many other districts use this test, so I thought it would be a recognizable data set for many teachers. In my experience, the scores are a good starting point for discussing student progress, and although there are several outlier scores during each testing cycle (students who score much higher or lower than previous scores and current class performance suggest they should), I believe it is useful to look at student performance, especially when looking at trends over several years. Many students in this class performed poorly on the 8th grade winter test (worse than any other test cycle they have had the past two years), and many of them expressed a lack of motivation in completing this difficult test—we are working on this middle school version of “senioritis.” Data from the spring of 2015 (after the project was completed) was not yet available at the time of this paper being written, and so it is not included.

Data and Interpretation

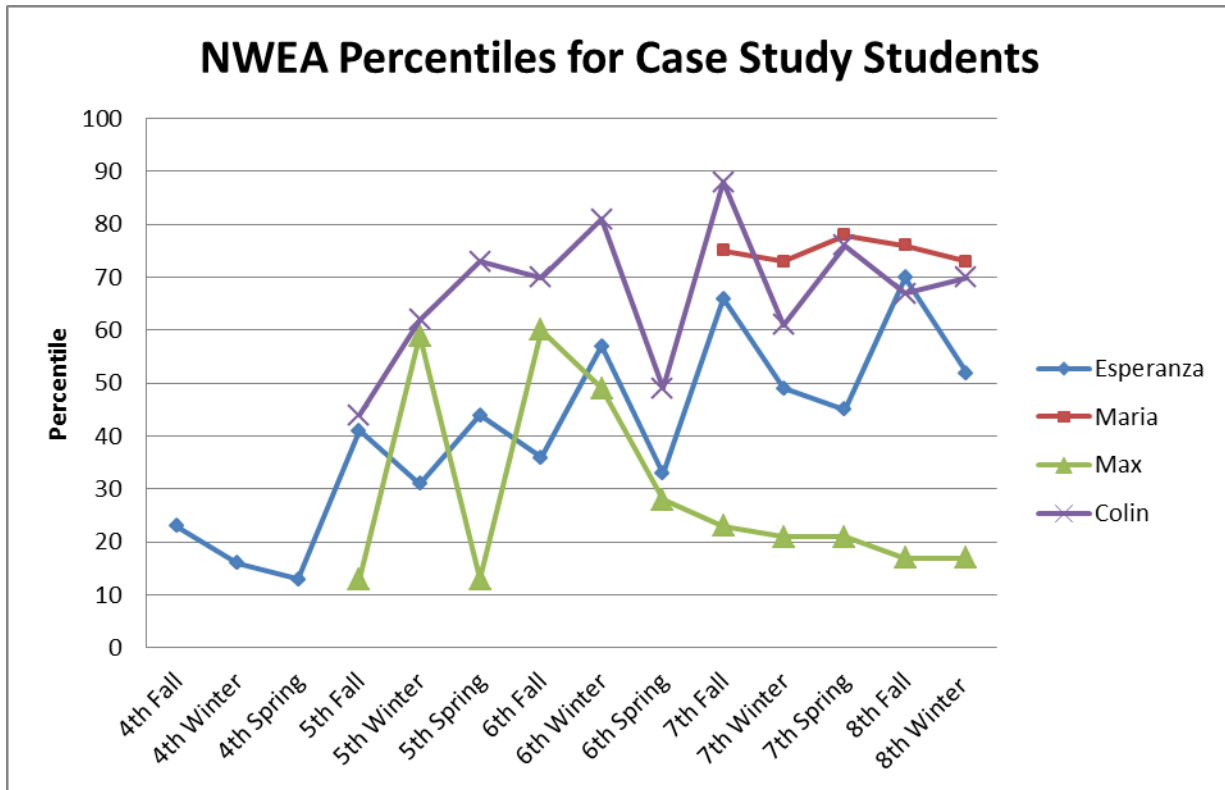
Case Study Students

I chose four students as case studies for this project. I have chosen students who have varying abilities in reading and writing and who responded to the project in ways that are representative of most students in my class. Following the discussion of these four students is a brief class analysis.

I find NWEA/MAP percentiles as an efficient way to get a first glance at a student, and so I have chosen to introduce the case study students in this way. I have included all the NWEA/MAP testing data I have; students who transferred into our school at different times will

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have varying amounts of data. Maria transferred to our school in fall of 7th grade. Esperanza transferred at this same time but from another school in our network, so her old scores were given to us. Colin and Max both started at our school when it was founded (their 5th grade year). I find that a historical look at a student can offer more insight than that of a one or two year testing cycle, so all available data has been included.

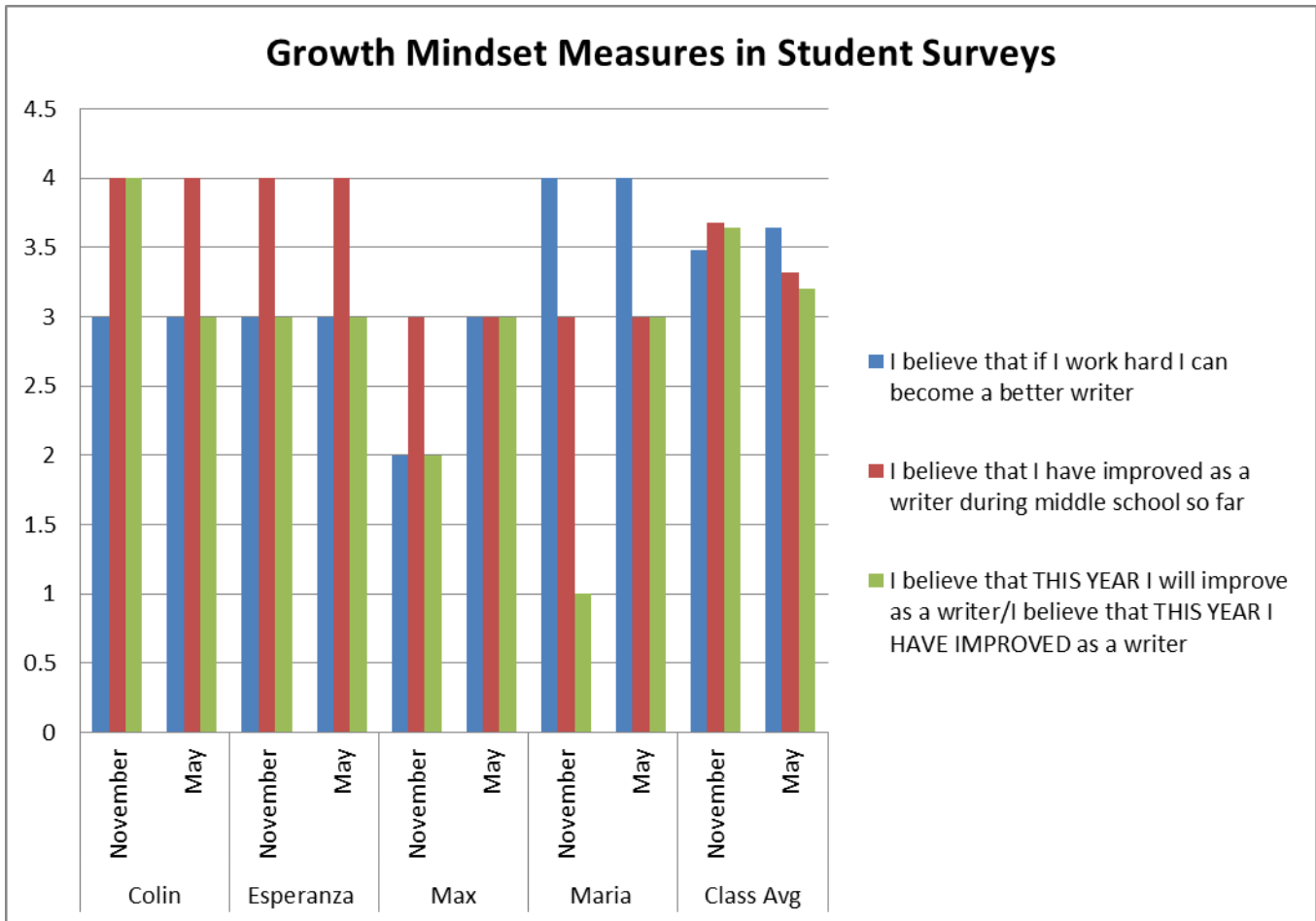


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Survey Results for Skill Importance Ratings (November and May) for Case Study Students

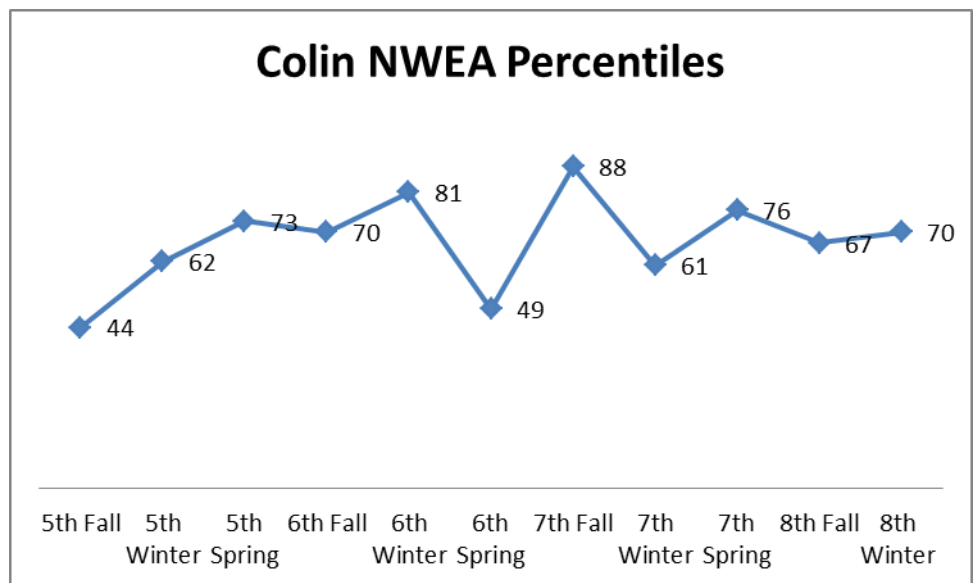
(most notable data is highlighted for ease of reference)

Student names	Summarizing in Class	Summarizing in Life	Difference in class-life	Paraphrasing in class	Paraphrasing in life	Diff class-life	Main idea in class	Main idea in life	Diff class-life	Notes in class	Notes in life	Diff class-life
Colin Nov	3	3	0	4	4	0	4	3	1	3	3	0
Colin May	2	3	-1	4	2	2	4	2	2	3	1	2
Change	-1	0		0	-2		0	-1		0	-2	
Esperanza Nov	3	4	-1	4	4	0	3	3	0	4	3	1
Esperanza May	3	4	-1	4	3	1	4	4	0	4	4	0
Change	0	0		0	-1		1	1		0	1	
Max Nov	4	3	1	4	3	1	4	3	1	3	3	0
Max May	3	4	-1	4	4	0	3	3	0	4	2	2
Change	-1	1		0	1		-1	0		1	-1	
Maria Nov	2	2	0	4	3	1	4	2	2	3	2	1
Maria May	3	2	1	4	3	1	4	4	0	4	4	0
Change	1	0		0	0		0	2		1	2	
Focus avg Nov	3	3	0	4	3.5	0.5	3.75	2.75	1	3.25	2.75	0.5
Class avg Nov	3.12	3.12	0	3.48	3.28	0.2	3.72	3.08	0.64	3.48	3.2	0.28
Focus avg May	2.75	3.25	-0.5	4	3	1	3.75	3.25	0.5	3.75	2.75	1
Class avg May	3.39	3.17	0.22	3.96	3.21	0.75	3.57	3.17	0.4	3.73	3.26	0.47



Colin

I have really enjoyed having Colin in my class. He is good-natured and reserved, but he is willing to put forth consistent effort, especially in small group discussions. He is a solid B (or high B) student in my class. I chose to focus on Colin because I think he is a student who has wanted more



autonomy and choice and for whom this choice might be motivating. He is good-natured enough that he will not refuse to do other work, but I can tell that he was really ready to assume more responsibility and create a project with less structure from me.

As shown in the graph above, Colin entered our school in 5th grade at the 44th percentile as measured on the NWEA/MAP assessment. He grew significantly in 5th grade and has averaged a score around the 70th percentile in middle school with some variance in his test performance (in my experience, many students appear to underperform the first time they take the test for a variety of reasons, so his rapid growth in 5th grade is good news but may be a bit exaggerated). In our small group reading instruction he has fluctuated between the highest and second highest reading group, able to analyze texts well but not quite at the level of our highest performing students. In the fall he is planning on attending a selective enrollment high school.

In the initial survey THIS YEAR, Colin rated his excitement as 5 on a six-point scale. He wrote “I am excited for the project about the topic of our choice and I predict that a lot of people will have interesting topics to share with the rest of the class.” When asked “What do you think about growth mindset and the research we read by Carol Dweck?” Colin chose “It was interesting and a little important to me. I think it might change how I think and feel about myself, but I'm not sure.” I was curious that Colin said he wasn't sure if growth mindset would change how he felt because I believe Colin (in my opinion) does have a growth mindset. On the question “I believe that THIS YEAR I will improve as a writer” on the initial survey, Colin commented *“I agreed because, I know that if I just work efficiently, use my time wisely and put the effort into it than there will be a success because without failure there will be no success I failed by starting off in the wrong foot and now that I'm pushing myself to try and get there eventually, there will be a success to where I land back on my feet.”* I believe this demonstrates a growth mindset, and it also shows a willingness to learn from mistakes.

Colin's scores were consistent in the November and May survey except for his belief that he had improved as a writer (down one point). This could be because Colin felt he had made dramatic improvement over the course of middle school and felt his changes this year were less dramatic. He wrote, *“If I compare my writing today with my writing 3 years ago, I infer that I won't even think that I ever wrote that in 5th grade.”* He also commented that *“In*

middle school I have learned so much more in writing and in 8th grade, I feel like I learned some, but not enough to write a 5 page essay.”Perhaps Colin had very high expectations of growth through this project that he did not reach, or he was aware that his performance was good but could have been better and therefore he could not be as enthusiastic about his growth.

He rated most skills (paraphrasing, finding the main idea, and summarizing) on the November survey as either a 3 or 4 (important or very important) for in class and life outside of class. I generally do not have a problem convincing Colin to do his work (though there are times he could push himself a little more), so these answers were not surprising.

Colin did well on his first set of research notes, working over spring break to hand in his three sources; his paraphrasing was excellent. He investigated ways that the world could end (nuclear war, global warming, virus, etc.). I thought this was a great topic since it allowed him to think big and then narrow his focus based on what interested him the most, and he has been a great student to use as an example when discussing how to narrow one’s topic. He found several infographics, and this allowed me to have a discussion on the purpose of these and how to read them, a skill we have previously discussed in class but haven’t focused on in awhile. Another student who is very bright but often less motivated (he describes himself as “often lazy” but I prefer not to use that term) has asked to work with Colin on his project, which I hoped would be a good pairing (it’s clear he is joining Colin, not the other way around).

When I checked in with him on April 27th, Colin said that he thought a source he was reading was “*too sketchy*” because it seemed too religious. I asked him what he thought he should do and he was quick to assert that there were other sources he could use instead. I asked him how confident he was feeling about his research and he said he was feeling “*pretty confident because it’s a big topic and there are a lot of sources.*” His partner then chimed in that there are also a lot of reliable sources and Colin agreed, but he was just having a little trouble finding them. He didn’t seem especially concerned, just a little disappointed his source hadn’t turned out to be as reliable as he had hoped. “*I was just trying to stay away from Wikipedia*” he said, referencing advice the technology teacher and I have given him about reliable sources. While these may not be new concepts he was applying, he was initiating a conversation on the

credibility of a source when asked a very open-ended question about how his research was going. The project was meant to initiate exactly these conversations.

Colin then had a third student join his group, a student who is lower academically than Colin or his partner and struggles to stay focused on tasks. This student had lost interest in his project. In hindsight, this addition of a third person may have dragged down the quality of the final project; this student's work was much more vague, poorly organized, and poorly connected to the other two students' sections (Zander chose to focus on nuclear war, Colin chose to focus on global warming, and the third student chose to focus on what the world would be like without humans. In the final draft, there was no specific cause for humans' absence). The infographics were interesting to Colin and Zander but in the end they chose to focus their class time on finding sources that gave more specific information and examples rather than on creating an infographic. While I agreed that this work needed to be done, I wonder if they could have done both if they had been able to stay more focused with a group of two.

In the end, the students divided the tri-fold poster into three sections, one for each of their topics. It was clear that each student worked relatively independently and the poster lacked cohesion. Colin and Zander clearly made an effort to become better prepared for the presentation itself, collecting additional data and context for their information that their partner did not. The "risk" component of their project was a Monopoly game that had participants answer questions about the information on their poster while collecting large sums of money. Once enough money was collected, the boys would tell the students that it did not matter how much money they had, at the end of the world their money could not save them. While this did help them communicate a unifying theme to their project, the risk felt rushed and the idea was largely suggested by me with little added.

Colin rated all of the skills (finding the main idea, paraphrasing, summarizing, and note taking) as either equally or less important in May compared to November. Unlike the other case study students, there was no measure that was rated more important in May. In school, the ratings for paraphrasing and main idea stayed consistent at 4 and notes in class was consistent at 3; Colin was the only case study student not to rate notes a 4 in May. For paraphrasing and

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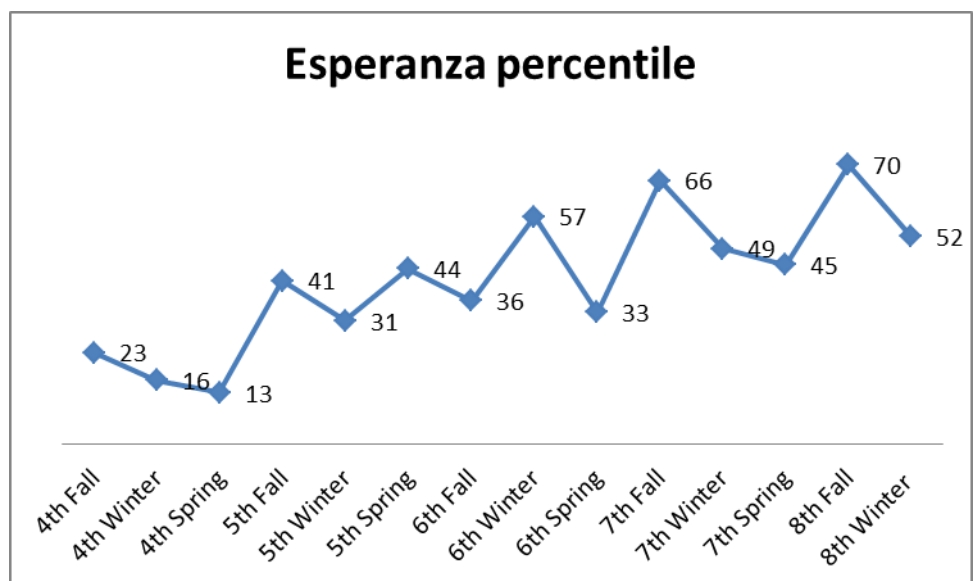
main idea, there was a noticeable decrease in these skills in life (paraphrasing had 4s in class and life in November, but dropped to a 2 in life in May. Main idea in life also dropped from a 3 to 2 in life while maintaining a 4 in class for both surveys). Notes were given the lowest rating available for life outside of school while retaining their 3 rating for class from the fall. Colin rated the notes as helpful (3) on a separate survey and was able to effectively paraphrase his notes for the project; in fact, I praised him several times in whole group instruction for his paraphrasing abilities. Perhaps Colin's concept of taking notes was more limited after the project (decreasing their value outside of class), or perhaps he rated these skills as less important because he did not feel they had been more important (or improved upon) during the project; it is difficult to say.

Colin reflected that the project was not something new but was instead an opportunity to practice what we had already learned with the benefit of student choice in topic. He viewed the notes as a clear means to an end (rated 3-helpful on a four point scale). In a post-project interview, he said he wished we had done more small projects like this so *"when you do it in 8th grade you're professionals."* Colin, like many other case study students, discussed the difficulty of finding sources that were credible and gave him the depth of information he needed, which he said was *"difficult now, but it will be less difficult [in high school] since we have experience."*

In the end, Colin completed a B project that showed growth in some areas and missed opportunities in others. Colin was largely satisfied with his work but admitted he could have done better, saying he felt *"satisfied...it wasn't a failing grade, but it wasn't the best project that's ever been done."*

Esperanza

Esperanza is a student who transferred from another school in our network at the beginning of seventh grade (last year). Her previous teacher told me that she is



sweet but can be unfocused and is reading below grade level. She will be attending a charter school in the fall.

Because Esperanza was at another school that shared her NWEA data, it is added here even though she only came to our school recently. Her scores show significant variance (such as a 25 percentile jump from spring of 7th to the fall of 8th grade). In my experience, students with such inconsistent data are hard to correctly place in groups and can perform at much higher (and lower) levels depending on their motivation. Thus Esperanza is a student I wanted to focus on for this project. She can be incredibly nice and engaged in class, or she can appear uninterested or lack motivation depending on her mood and her feelings about school at the time.

On the initial survey, Esperanza said that the research by Carol Dweck on growth mindset was “really interesting and important to me. It has made me think a lot about how I think about school and myself.” She was also very convinced that she had become a better writer during middle school, rating herself at a 4 (strongly agree) and commenting, “*Yes! At the first I had really low spelling and I always had trouble explain myself also I didn’t know what a thesis was or anything like that I start my paper very weakly.*” She slightly agreed (3) that she could become a better writer through hard work and that this year she would improve as a writer, suggesting a slight inconsistency between what she thought she would do this year and what she had done previously. She rated all of the foundation skills (summarizing, paraphrasing, and finding the main idea) as a 3 or 4 both in reading class and in life outside of reading class, but she rated paraphrasing highest as “very important and needed most days” (4) for both. I had not realized how highly students would rate paraphrasing as a skill, but the class averages for paraphrasing in class (3.48) and out of class (3.28) were high (the only skill that had a higher average was finding the main idea in reading class, with a 3.72 average).

On the initial survey, she selected the lowest level of excitement on a range of 1-6 (1--I am not excited at all about this project. I am dreading it (I don't want to do it). She initially said she wanted to research stress but later decided to focus on anorexia and bulimia. Her initial research notes were disappointing as well, with only 1 source instead of the required 3. She stated that the articles felt “*too overwhelming.*” As she started to research further, however,

she became much more engaged in the process and was noticeably more excited to discuss it with me. She was paired with another student working on post-traumatic stress disorder (PTSD) during a class activity in late April where they were asked to discuss their topics and project ideas. I made a comment that both of their topics were a bit heavy and depressing and she replied, *“Ms. Kruger, I know you said that my topic was kind of a downer, but I don’t think that’s true. I’m really excited about my project because I think it doesn’t have to be so depressing. I picked this topic because if you learn about this stuff early enough, you can fix it before it get too bad. That’s why I care so much about this project. I want people to learn about it.”* I was very excited to see this level of investment in her project and topic. The next day, we discussed a TED talk she watched as a source that was trying to show how a “normal” vs. anorexic person thinks about food. We talked about how she could show this in her project. I asked if she thought she could demonstrate this to her audience, possibly by including audio to show the inner monologue of the people she was trying to help her audience understand. She rightly said that she didn’t want to do something like that around food because she didn’t want people to experience her project and then start developing complexities or anxieties similar to anorexics—that’d be just the opposite of what she wanted the project to do. I was impressed by her level of consideration and reflection.

Later that day, Esperanza, Lucia, and Jessica came to me during my prep period and were very, very nice to me (clearly they wanted something from me). They proceeded to pitch to me that Esperanza had a really great project and they wanted in. Esperanza was incredibly confident and proud; she talked about how much more she could do with her project if she had more people. I said the other girls would need to work very hard over the long weekend to get their sources caught up. I required a minimum of 6 sources for a topic, and students were allowed to switch their topics but still needed to produce 6 notes (3 had already been turned in by this point). The girls were unconcerned with this issue. Jessica said that she wasn’t very invested in her topic and she knew if she switched that she would do a better job. Esperanza added that they could “touch” on more of the topic with more people, saying *“my topic is very good now—if I can say so myself—but it would be better if they could join and make it bigger.”* I had never seen Esperanza so dedicated to a project and so confident in her abilities.

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Esperanza took ownership of the project and became frustrated when she couldn't find information she wanted to find, such as more detailed descriptions of the disorder. Her new group members did help broaden the scope of the project, but they also made her a little *"unmotivated...kind of lazy"* at first since she thought they would do more of the work. Still, the dominant feeling during the project was that Esperanza was happier, more motivated, and more focused than usual. When I discussed this with other teachers, they commented that she was smiling and more focused with them as well.

Esperanza demonstrated a high level of self-awareness throughout the project but especially in our post-project interview. She described becoming frustrated by the quality of her sources, noting, *"Quality of sources was important. The date is important—I don't want to use data from 2010. MLA [formatting for sources, a new requirement] helped me realize if a source was good."* All case study students nodded and agreed with Esperanza on this point, and then several students commented about the importance of MLA formatting as a new and helpful skill. When Colin and Maria commented that this project didn't feel different from the other stuff we had done, she passionately disagreed, arguing *"it's easier to see when a passage is better than another passage—like with citations. If a passage says something without a citation, or 'according to _____' then you know it's not very good...At the end of the day, you don't want to look dumb if you don't know what's true and what isn't. You [me] gave some help but it was really hard to find credible sources."*

For Esperanza, the skills (summarizing, paraphrasing, finding the main idea, and taking notes) were rated similarly in November and May, with no change in summarizing (3 in class, 4 in life). Paraphrasing was rated slightly less important in life in May (3; all other ratings for this skill were a 4 in both surveys and categories). Main idea and notes were both given a 4 rating in class and life outside class in May (previously these scores were 3s for main idea and 4 for notes in class, 3 in life). For all skills except paraphrasing in life (from a 4 down to a 3 in May) all of her ratings either stayed the same or improved. This was not surprising to me; Esperanza valued these skills before the project, and in interviews and observations placed a heavy importance on them during the project. Because her topic was so personal and intrinsically motivating, it is not surprising to me that she would now value these skills more outside of class as well.

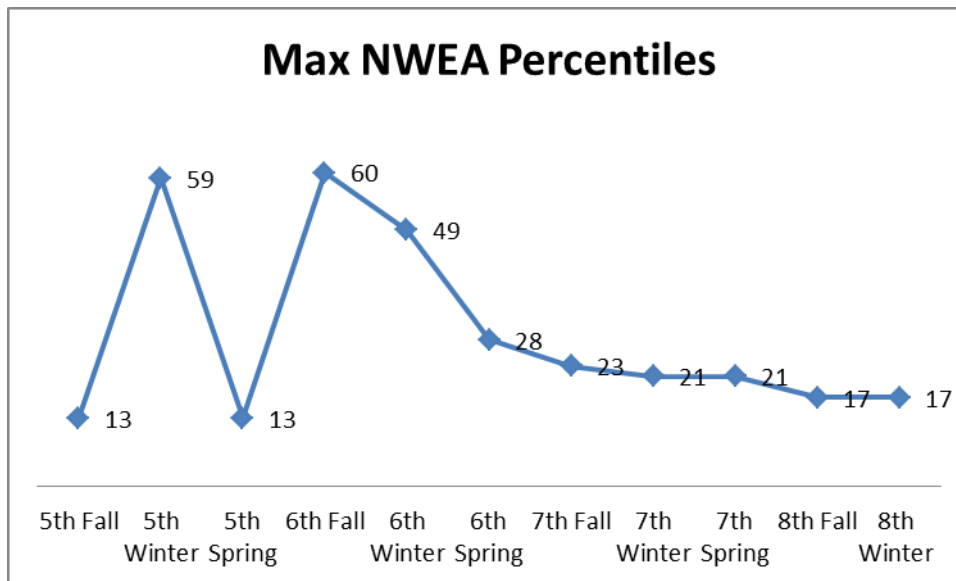
Esperanza's growth mindset measures did not change at all from the November and May surveys. She slightly agreed (3) that working hard would make her a better writer and that this year she would (or did) improve as a writer, commenting in May that *"practice makes perfect"*. She also strongly agreed (4) on both surveys that she had improved as a writer during middle school, commenting in May that *"YES I have big time. Just knowing how to start a paragraph and other things makes a HUGE change."* Esperanza exhibits a consistent growth mindset but the project did not demonstrate a change in these measures on the survey.

Esperanza's topic contributed to her success (an A/B grade); she frequently mentioned enjoying her topic in interviews, and she was so enthusiastic that she got two other students to join her. She was *"really excited and happy with how [her project] turned out"* and stated *"I think my project taught me a lot. With anorexia in the movies...it has to do with a lot of things like PTSD...and stress...it takes time [to develop]. These people have really low self-esteem and I didn't know that. That's not what I knew—that's not how the movies explain it. When I learned about treatment that was really helpful—learning about getting better, I think that's a big deal."* Esperanza consistently talked about her project in terms of teaching herself and others about anorexia, and this clear purpose motivated her when things felt difficult. Even when discussing improvement for next year, she focused on how important it was for the project to be professional and polished so that others would listen and take them seriously. When asked what she wanted next year's projects to look like, she replied, *"I want people to have all their stuff ready at least an hour before. I don't want to see anyone downstairs with a stapler like me. It doesn't look professional."* She said she knew what she wanted to present, but when faced with 5 students waiting for a presentation she panicked a bit and wished she had practiced more beforehand. I believe this focus on professionalism stems from Esperanza so badly wanting people to take her seriously and learn from her newfound knowledge. The element of student choice did exactly what it was supposed to for Esperanza—it kept her focused and motivated to teach herself and others.

Max

I am really concerned with Max as he prepares to enter high school. Max can sense that he is not quite ready for the work in high school and viewed this project as a way to practice the skills he needs. Max is good-natured but has difficulty staying focused and understanding how to revise his work. He will be attending a charter school in the fall.

He has generally earned a C grade for Reading class and is in Tier 3 of Response to Intervention (RtI), an intervention designed to give students extra instruction in a small group setting by an academic interventionist (who is also concerned by his lack of readiness). As



shown in his NWEA percentiles, Max currently performing below his age-level peers but over his middle school history has shown a wide range of scores, is suggesting either a lack of focus, good test-taking skills, some lucky test days, or some other

factors that are not immediately apparent to me.

Paraphrasing and comprehending his sources was a known challenge for Max at the beginning of the project, and the organization and deadlines of the project also appeared overwhelming. That being said, he was motivated to work on the project at the beginning even when he was not fully confident he had chosen the right topic. Max wants to succeed on a project like this, he just isn't always confident in his ability to do so. When conferencing, Max struggled to see the big picture or next step he should take. He decided to pair up with Christian to research Megalodon, a giant, extinct shark. They are interested in the topic but struggling to think of how to make it into a project besides describing some basic facts. They repeatedly discussed wanting to make a model of the shark or a poster shaped like a shark where they could put their information, but they had a difficult time grasping the "research question" aspect, or articulating what they wanted their audience to understand.

On April 21st, Max said that he was feeling “not engaged” with the project before our conversation. He said, *“I want to change my idea because I don’t really like it.”* After our conversation, he chose “Let’s Go!” and asked if he could change his topic and work with Christian. He also asked when we could start, showing an eagerness to get moving I hadn’t seen previously. Max may have felt a bit overwhelmed about completing a project alone, he may have wanted to work with his friend, or he may simply have wanted to work on the mystery of extinct sharks. In our post-project interview, he repeatedly discussed his interest in his topic and, if anything, ending the project with some frustration over working with his partner. Although his partner did help him paraphrase his notes, which Max admits was very important, he also said that *“most of the problem we had in the project was to keep my partner in the project.”* They also struggled to pull their poster together—they focused the majority of their poster on a multiple-choice quiz where the answer choices were sometimes poorly worded. They did have information about the shark for their readers, but there was little depth to the information or presentation.

In the initial survey, Max rated each of the skills (summary, main idea, paraphrasing, and taking notes) as a 4 (very important) in class and 3 (important) in life outside of the classroom. He also rated himself fairly low on measures of growth mindset (2) when class averages for these measures were close to 3.5. He said he “slightly disagreed” (2) when responding to the statement “I believe that if I work hard I can become a better writer” and wrote *“I disagree because I haven’t improve these years.”* This shows a lack of confidence and buy-in for growth mindset. It also shows he is aware that he has not been making the progress we hoped he would before graduating. However, his answers are not entirely consistent. When responding to “I believe that becoming a better reader can make me a better writer” he slightly disagreed (2) and wrote *“I have my reading grade so low but my writing I can understand what to write.”* He slightly agreed (3) that becoming a better writer could help him become a better reader. He wrote, *“Yes I can be both if I try my very best in reading class and put all my work into it.”* In conversations with me, Max has said that he has gotten better at writing a thesis and giving evidence to support it, skills used in both reading and writing. The hope was that this project

would be an opportunity to develop the skills and growth mindset that seem in need of improvement for Max.

Max's skill importance ratings were the most difficult to analyze. Values stayed within a point of where they previously were, and for all but one measure the difference in scores between class and outside of class was 1 (positive or negative, meaning some skills were rating one higher for school and others one higher for life outside of school). Paraphrasing, a skill rated 4 in class and 3 in life, was the only skill rated 4 for class and life by Max; seeing as how many of our conversations centered on this skill, this is not surprising. We spend a lot of our conference time talking about strategies to improve his paraphrasing in notes, and we identified this as a skill he needed to improve for high school readiness. This could also explain the high rating for notes in class. For summarizing, his values flipped, meaning he rating summarizing as more important (4 compared to a 3) in class in November but then more important in life (4 compared to a three). This could be because students now value the summarizing they are doing in their life more, or it could be that the summarizing they are doing when finding the main idea and taking notes is being seen as separate from these skills (instead of a component of them) and is less valued as these other skills become more valued in class.

Max showed growth on two of the three growth mindset measures in the May survey. He was consistently a 3 (slightly agree) out of four on the statement "I believe that I have improved as a writer during middle school so far," which given his work on this project and throughout the year appears accurate. He grew from a 2 (slightly disagree) to a 3 (slightly agree) on the statements "I believe if I work hard I can become a better writer" and "I believe that THIS YEAR I will/have improved as a writer." Since Max's confidence has been a major concern for both of us and he has expressed frustration over slow growth, this is a significant change.

For Max, the project's prime objective was to prepare for independent research and projects in high school. While several students echoed this feeling, it seems appropriate that the student who struggled the most on the project (out of the case studies) and who is fairly nervous about being prepared for high school would focus on this aspect. He said that in high

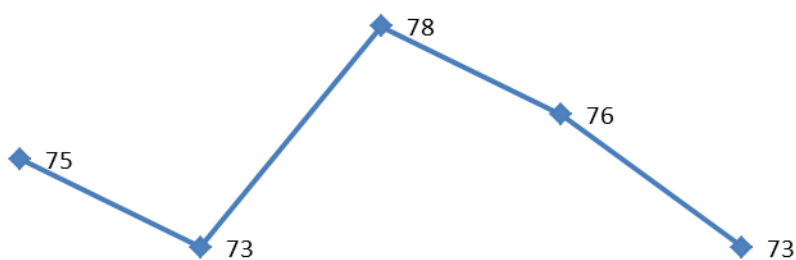
school, “when we get a project, the teacher won’t help us every step of the way and we need to follow the steps and know the expectations. I feel like I got better at that.” Unfortunately, while I do think this project was valuable for Max, I still felt as though I didn’t have enough time to spend with him to see dramatic improvements. In conferences, notes, and the post-project interview, Max’s answers were usually focused on more basic, tangible things. For example, when asked about his project he consistently discussed the poster and its shape, not its content. When asked about mistakes he made (his project received a C- grade), he focused on the wording of quiz questions on the poster and not his research methods or topic depth. Max was the only student of the four case studies who said he did not have enough time to finish the project, and for students like him having more time earlier to conference on the topic and depth of notes would have been beneficial.

Maria

Maria was one of the few students who responded saying that she had not grown as a writer this year (on her initial survey) because “This year and last year I have not changed in my writing, I still write the same way and am still writing with the same skills I learned last year and the skills I had coming into [our school].” On many assignments she is focused and, indeed, is a strong writer. On a few assignments, she can underperform due to what appears to be a lack of risk taking or enthusiasm. Her attitude can also be a barrier for success, both in my class and in other classes. She has gotten into a selective enrollment high school and has seemed less focused in class since learning about this news and following a few other more personal events.

Maria has consistently tested between the 73rd-78th percentile the past two years. Maria,

Maria NWEA Percentiles



like many of her peers, scored lower on the 8th grade winter exam than on her previous exam. In class she has fluctuated between an A and high B, and she is in the top reading group for small reading instruction.

I chose to focus on her during this research because I believed she could be very successful on a project like this if I succeeded in getting buy-in. When she is engaged in a discussion or project she is incredibly fun to teach; she is responsive to feedback, interested in hearing new ideas, and has a good sense of humor. She appeared organized enough that the independent nature of the project would not seem too overwhelming, and she has previously done a great job when given more autonomy and creative options for projects. She sees herself as a strong writer (which she is), and I hoped she would see herself being pushed to write in a different way here. Additionally, I was hoping this project could motivate her to end the year on a strong note, since several other teachers also noted a change in attitude this winter and spring. She became less outwardly defiant by April, but there was still a lack of engagement that I wanted to address. On her initial survey, Maria rated her enthusiasm for the project as a 3 on the 6-point scale, choosing *"I am a little excited about the project but also a little nervous"* and commenting, *"I am excited that I will be able to pick my own topic and work on something that I will enjoy. The part I am nervous about is how much work will have to be done and what type of project we will be doing (How will we be presenting the project)."*

Maria had a really difficult time choosing her topic. On the initial survey, she said she wanted to research *"what is your favorite celebrity and why?"* When we discussed her topic and its lack of rigor, she agreed and said she wanted to work on werewolves and their origins. Then she changed her topic to comparing Greek and Roman myths. She completed her initial notes on this topic but did not go into any detail on specific myths; her articles seemed too similar in their details. When asked about this, she said that yes, she felt the same way, and maybe she was going to go back to werewolves. She then decided that she would partner up with another student who was taking on the ambitious topic of ISIS (the so-called Islamic State). She has been noticeably more engaged with this topic and with our discussions. This topic is overwhelming in its complexity and depth (even for me), and I think there is something about researching something so current and complex (with the help of a partner) that drew Maria to this topic. I hoped that a partner would also help keep her on-track; her partner reads at a slightly lower level but was more consistent in her demeanor and work ethic this winter and spring.

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For Maria, all the skills asked about were rated as either equally or more important than in November. Summarizing was rated one point higher in class in May compared to November (from a 2 to a 3) and paraphrasing had the exact same ratings, with this skill rated a 4 in class importance and 3 for life. The noticeable changes were in main idea and notes ratings; each of these skills was rated as 4 (very important and needed most days) for class and life outside of class. This shows a noticeable change (In November, main idea was rated as 2 in class and 2 in life outside and notes were rated 3 in class and 2 in life outside class). When asked how helpful handing in the notes was, she said helpful (3 out of 4 point scale) saying she could use them to write her project without going *“back to the website to find information again”* but she *“didn’t see why we had to submit them if they are notes they should be there to help us not get graded.”* As someone who felt confident in her ability to take notes, she thought they were important but not something I needed to assess. No other student commented that these notes should not be given a grade.

Maria demonstrated a consistent growth mindset on the survey with the growth mindset measures. She was the only case study student to strongly agree (4) that she believed hard work could make her a better writer (and she answered 4 on both surveys). On the first survey, as noted above, she strongly disagreed that she would improve as a writer, and yet on the May survey she slightly agreed (3) that she had improved as a writer. This score represented the most significant change (2 points) of any growth mindset measure for a case study student.

In interviews and surveys, Maria’s first reaction is to say she didn’t learn very much or the project was not very helpful, but when pressed on specific topics such as MLA formatting, narrowing a topic to make it presentable, or diplomatically redirecting a partner she will describe how she has grown. Maria and students like her may benefit from reflection that asks about specific skills rather than open-ended reflections, since I believe it is important to recognize growth. A portfolio reflection may also be more helpful to show how her work has improved over time. Even if she does not consistently credit my class or the project with becoming a better reader or writer, she is valuing these skills more now and can discuss their importance when applied in a project.

Whole Class Data Analysis

The questions for the survey are listed in the Appendix B, with the exception of prompts asking students to explain their answers in a short answer form, which were quoted as needed. Minor grammatical errors, such as capitalization and spelling, were sometimes edited in these quotes to make them easier to read (and because, as a reading teacher, I am slightly embarrassed at some of the errors students would likely have corrected in their own essays but did not correct in the survey, which they may not have realized would be quoted verbatim in publication).

Student Surveys

24 students (all students in class present on the day of the survey) were asked several questions related to growth mindset and their belief that hard work could help them improve in reading and writing. The table on page 18 shows the class averages of these ratings compared to the case study students. The following scale was used for this first set of questions:

- 1—strongly disagree
- 2—slightly disagree
- 3—slightly agree
- 4—strongly agree

To the statement “I believe that if I work hard I can become a better writer” the average rating was a 3.48 in November with no students choosing a 1, 2 students choosing a 2, and the remainder choosing a 3 or 4. In May, the average was 3.64 with all students choosing a 3 or 4. One student commented, *“I picked strongly agree because I’ve seen it in my friends they started working harder and they’ve become better writers.”* Another student wrote, *“Because writing is like basketball. You know how to play it but still need to practice to perfect your skills.”* A third student simply wrote, *“Because it just works.”* Student ratings and comments suggest a strong agreement with growth mindset as a general concept.

When asked to respond to the statement “I believe that I have improved as a writer during middle school so far” all students chose a 3 or 4 rating with an average response of 3.68 in November. In May this rating was slightly lower at 3.32, with one student giving a 2 rating

and the rest giving a 3 or 4. This slight drop in scores stems from a few students shifting from a 4 to 3. The increase in ratings for the general concept of growth mindset and a decrease in the application/personal level of growth mindset is interesting. I am not completely sure why this is, but one possible explanation could be a growing anxiety about high school that is causing students to question their preparedness. Another possibility is the instability caused by a staff member's departure for the last five months of school; a long-term substitute was found, but many students felt that the lack of a homeroom teacher (and consistent, full-time teacher) hurt them academically, which is likely true. Even if they made gains in my class (which many did and articulated with their ratings) it is possible they may have felt less confident they had grown as a writer or academic overall during the year. One student commented, *"Oh totally. I remember coming in and [doing] not so well at writing. I still have stuff from 6th grade and I'm like woah I'm way better now"* while another student expressed some doubt, saying, *"I slightly agree that during middle school I have improved my writing skills because I'm still not good in some things for writing."*

When asked to respond to the statement "I believe that THIS YEAR I will improve as a writer" students had an average response of 3.64 in November, with only one student (Maria) choosing a 1 because *"This year and last year I have not changed in my writing, I still write the same way and am still writing with the same skills i learned last year and the skills i had coming into [our school]."* This student had a 4 and 3 on the previous two questions and stated that *"I slightly agree because of the fact that even when I came into middle school even in my old school I already was a good writer. I have learned a few more things to help me since I came but I have not sensed a drastic improvement within my writing skills."* These responses indicate that students have internalized the growth mindset to a certain degree and believe that their effort can influence their abilities; even students who already see themselves as good writers view this as an area upon which there can be improvement. Unfortunately, this rating went down to a 3.2 average in May. Again, all student ratings were a 3 or 4; there were just several students who shifted from a 4 down to a 3. I suspect the reason is similar to the previous score; students may be more critical of their effort and opportunities this year after losing a teacher and preparing for high school. It would be interesting to replicate this survey another year to see if

there was a similar slump with 8th graders. One student commented, *“I somewhat agree that I’ve become a better writer but to be honest I’ve been slacking off on my writing I’ve noticed myself giving up”* while another commented *“I agree because, last year I felt like I’m just not smart enough to learn the things being taught to me in class every day. This year I’m on my A game, like...This is it!!! No more Ms. Kruger having to hold my hand. I need to hold myself accountable, I thought that the harder I work, the better I’ll get.”* It is worth noting that this student still struggles to work at grade level but has shown growth this year; she is someone who needed to develop a stronger growth mindset and her survey results suggest that she has.

I then asked a series of questions asking students how important certain reading skills were to them in class and in their life outside of reading class. I focused the questions on skills we had focused on during the year and ones that would be essential for success on the final project (paraphrasing, finding the main idea, and summarizing). I used the survey to try to determine how much value students saw in these skills and whether or not these values changed at the conclusion of a project based learning unit. For these questions the following scale was used:

- 1—not important at all
- 2—a little important or important some of the time
- 3—important and used regularly (about once a week)
- 4—very important and needed most days

In November, students rated being able to paraphrase with an average score of 3.48 in class and 3.28 in life (0.2 difference). In May, these ratings rose to a 3.96 in class and a 3.48 average in life. This score is where the most significant increase occurred and suggests students have internalized the importance of paraphrasing; many students also commented in interviews that paraphrasing their notes made the final project much easier to write because they had already “done the hard work” by paraphrasing their sources in their notes. Student ratings of the importance of notes in class (3.74 average in May, up from 3.48 in November) also show an increased value in these skills.

In November, main idea was rated as incredibly important to class (3.72 average) and slightly less important to life (3.08) which does not surprise me since many students probably

view the main idea and a skill focused on reading and less on synthesizing and summarizing information concisely, a skill I think many people do without labeling it as such. These ratings decreased slightly in May (3.56 in class and 3.18 in life) for reasons that are likely similar to the slight decreases on other measures. Overall these results suggest that students already view these skills as fairly important to their work in reading class and see a slightly less strong but still significant connection between these skills and their work outside of class.

Conclusions

As discussed in my implementation section already, the timing of this project was not ideal. School vacations, standardized assessments, and other scheduling factors can impede a project like this easily, and next year I would like to introduce the project gradually over the course of the year with an earlier deadline. I thought that having the project toward the end of the year would be a motivating factor for students to complete work on the skills needed to be successful on this project, and I think many students did feel motivated to improve these skills for this purpose. However, I think the process of the project was more important than the anticipation of the project for achieving this goal. Student feedback suggested that having a good topic was incredibly important and that many of them appreciated having the freedom to change topics as their notes made this change obvious to them. If students started brainstorming their topics earlier and gradually completed their notes, this would allow more time for conferences on this issue and more time for students to correct with fewer penalties (mainly time to redo notes with a new topic). This would also allow me more opportunities to reteach students having similar issues with these skills before the project was in full swing.

For students who didn't "get" the importance of these skills until they were actually in the project, diving into the project was a rude awakening and there were not enough opportunities to fix it. I am not convinced that discussing the project was motivating enough to get students to change their work habits and skill aptitude. Working on the project and coming face to face with one's weaknesses, however, seemed more motivating for students to reach out for assistance (or at least be more open to reteaching). For students who were not meeting deadlines or completing work, a more gradual start to the project would have allowed earlier

intervention from me or another teacher with more time to analyze the issue preventing project completion.

To revisit my question “What happens when I introduce a large, independent research project as a final performance?” I would argue that the project with its performance component, higher level of independence, and student-led topics did improve the culture of my classroom and performance of my students. Many students internalized the belief that this project made them more prepared for high school, both academically and social/emotionally (though a more thorough investigation of this next year could be useful). Many students felt remorse that they did not focus on the project sooner and commented to me that they could have done so much more if their notes had been better to start (or their topic more focused earlier). While these comments are disappointing, they also show students believing that they can control the outcome of their projects, a key component of growth mindset.

When asked about next year’s project, the students I interviewed were adamant that the project should exist; their answers suggested that it should be bigger, longer (or just as long with more time to discuss topics), and with more risk taken to go beyond a poster and create an experience for the audience. Many students discussed wanted to be prepared to present, and next year I intend to spend more time focusing on the presentation/performance aspect of the project. For example, each case study student agreed that a “dress rehearsal” of projects (in class or in the gym) would have allowed students to feel more prepared and would have encouraged others to “step up their game” and fix weaknesses in their presentations.

Even when students were discussing frustrations with the project, they demonstrated skills and judgment I hoped they would develop. Students were frustrated on the depth of their articles’ information, showing an awareness of the evidence needed to support a claim or main idea. Students were frustrated by MLA formatting, but they also appreciated how professional it made them look and how it helped them determine the usefulness of a source. Students wished they had more instruction on this formatting, but then they were also appreciative that they didn’t have their “hand held” through the project and had to learn some things on their own. In effect, student frustrations appeared largely where I anticipated and thought they would learn from them.

This project, among other factors, has made me consider a more reflective classroom centered on key skills. This may take the form of standards-based assessment, or it may simply be a more conscious effort to reflect on skills needed for this project throughout the year. From this project I have been reminded that students benefit from showcasing their work and knowing their work has a larger audience. I will be looking for more opportunities for student-led initiatives with performance components like this, be they “big projects” or small.

Policy Recommendations

Classroom Teachers:

1. Teachers are strongly advised to investigate opportunities for project-based learning similar to the methods discussed in this paper.
2. Lead a discussion with parents during a Parent Engagement Night to discuss growth mindset at school and at home.

School & District Leadership:

3. School leadership must facilitate conversations on how to prepare students to be independent researchers at the lower grades.
4. Technology and resources must be made available for such work.
5. Educators must have professional development opportunities to discuss growth mindset and its connection to their classroom. Educators need to reflect on the way in which they are encouraging their students to develop this mindset. I believe these conversations would be valuable in any educational setting (pre-K through college and beyond) and use the broad term educators for that reason.

Resources:

Anderson, L., & Midgley, C. (1998, June). Motivation and Middle School Students. *ERIC Clearinghouse on Elementary and Early Childhood Education*.

Bronson, P. (2007, August 3). How Not to Talk to Your Kids: The Inverse Power of Praise. *New York Magazine*.

Dweck, C. (2006). *Mindset: The new psychology of success*. New York: Random House.

Guthrie, J., Klauda, S., & Ho, A. (2013). Modeling the Relationships Among Reading Instruction, Motivation, Engagement, and Achievement in Adolescents. *Reading Research Quarterly*, 48(1), 9-26.

Hernandez-Ramos, P., & De La Paz, S. (2009). Learning History in Middle School by Designing Multimedia in a Project-Based Learning Experience. *Journal of Research on Technology in Education*, 42(2), 151-173.

Mctigue, E., & Liew, J. (2011). Principles and Practices for Building Academic Self-Efficacy in Middle Grades Language Arts Classrooms. *The Clearing House*, 84, 114-118.

Vega, A., & Brown, C. (2013). The Implementation of Project-Based Learning. *National Forum of Educational Administration and Supervision Journal*, 30(2), 4-29.

Wright, D., & Mahiri, J. (2012). Literacy Learning Within Community Action Projects for Social Change. *Journal of Adolescent & Adult Literacy*, 56(2), 123-131.

Appendix A: Student Notes Work Sample and Rubric

Source: The Atlantic

Title: What ISIS Really Wants

Web address: www.theatlantic.com/features/archive/2015/02/what-isis-really-wants/384980

What was MOST USEFUL from this site?

QUOTE	paraphrase, main idea, etc.	response	Ms. Kruger's column
<p>"Our ignorance of the Islamic State is in some way understandable: It is a hermit kingdom; few have gone there and returned, Baghdadi has spoken on camera only once. But his address, and the Islamic State's countless other propaganda videos and encyclicals, are online, and the caliphate's supporters have toiled mightily to make their project knowable.</p>	<p>We don't know much about the Islamic State and what their intentions are because few have gone and came back.</p> <p>Baghdadi has only been seen once on camera but with propaganda he makes his project hard to miss.</p>	<p>I agree that we have a rough knowledge of Islamic State but shouldn't that push us to try and understand more?</p>	<p>I agree with you—does your article describe some of the ways they have tried to understand more? Why have these not worked as well as we would have hoped?</p>

Rubric for Big Project Notes A+ 12pts A 9-11pts B 8pts B/C 7pts C 6 pts C/D 5pts D 4pts F 3pts

	Does Not Meet 1 pt each	Below Expectations 2 pts each	Meets Expectations 3 pts each	Exceeds Expectations 4 pts
Evidence chosen	Text evidence does not clearly connect to the project OR is quoted out of context. It is not clear how this source will help with the project.	Source does not have enough important information OR too much text is quoted OR quotes do not have enough useful information.	Sections from the article include important information, details, quotes, facts, and opinions that could be useful for the project.	Sources are excellent and the quotes/sections chosen show a deep understanding of the topic.
Paraphrasing and Summarizing	Several rules for "MOSS" are not followed—this would be plagiarism. Evidence is not summarized—it would be hard to know what information is most important.	Some rules for "MOSS" are not consistently followed (in bold): -meaning is the same -order of ideas is changed -synonyms are used -written in student's style (voice) -more than 3 words in a row are in quotes Some evidence is well summarized, but sometimes there are not clear connections between pieces of information. Reflections do not show clear connections between ideas in notes.	Evidence is well-paraphrased ("MOSS" rules apply). Evidence is well summarized—not all information from the article is included in notes (may be in notes or in reflections) and there is a clear synthesis (putting together) of information from different parts of notes.	Evidence is written in the student's voice concisely and accurately. Clear judgment is shown to focus notes to the most important details and ideas.

Appendix B: Survey Questions from November and May Survey

- Respond to the following statement: I believe that if I work hard I can become a better writer
- Respond to the following statement: I believe that I have improved as a writer during middle school so far
- Respond to the following statement: I believe that THIS YEAR I will improve as a writer (for the May survey it was I believe that THIS YEAR I HAVE IMPROVED as a writer)
- Respond to the following statement: I believe that becoming a better writer can make me a better reader
- Respond to the following statement: I believe that becoming a better reader can make me a better writer
- How important is being able to SUMMARIZE to reading class?
- How important is being able to SUMMARIZE to LIFE OUTSIDE of reading class?
- How important is being able to PARAPHRASE (put things in your own words) to reading class?
- How important is being able to PARAPHRASE (put things in your own words) to LIFE OUTSIDE of reading class?
- How important is being able to FIND THE MAIN IDEA (or identify an author's claim/thesis) to reading class?
- How important is being able to FIND THE MAIN IDEA (or identify an author's claim/thesis) to LIFE OUTSIDE of reading class?
- How important is being able to TAKE GOOD NOTES to reading class?
- How important is being able to TAKE GOOD NOTES to LIFE OUTSIDE of reading class?
- What do you think about growth mindset and the research we read by Carol Dweck?

On the November survey only:

- We have discussed having a big research project in the spring on the topic of your choice. How do you feel about this project?
- What topic or topics are you interested in for this big project?

On the May survey only:

- Do you think this project helped you become better ready for high school?