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A SELF-STUDY INTO AUTHENTIC LEARNING AND TEACHING IN THE MIDDLE  
SCHOOL CLASSROOM

LAURA FENERTY  
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Reviewed and approved\* by the following:

Mark Kissling  
Assistant Professor of Social Studies Education  
Thesis Supervisor

Edith F. Arbaugh  
Associate Professor of Math Education  
Honors Adviser

\* Signatures are on file in the Schreyer Honors College.

## **ABSTRACT**

To achieve the ideal classroom experience in which teachers facilitate dynamic and engaging experiences and learners are highly motivated, highly knowledgeable, and high-performing, many educators are implementing the practice of authentic learning. To date, much of the research surrounding authentic learning agrees that the pedagogical strategy centers around providing meaningful learning experiences and includes opportunities for real-life connections and inquiry-based learning, leading students to become more motivated and engaged learners. This student teaching-based self-study completed in a fourth grade classroom investigates what it means to teach authentically and have students learn authentically. While acknowledging the research components and benefits of teaching authentically, the study considers four main beliefs about authentic learning through analysis of various lesson plans and experiences within the classroom.

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## Chapter 1

### Introduction

As a college student, I have been fortunate to spend two summers working in my nation's capital. As a future social studies teacher, this was especially enriching because I was always a Metro stop away from the next museum, the next monument, or the next historical site. After finishing my day working with elementary school students, I would strap on my backpack and trek to a Smithsonian, through the National Mall, or around Arlington National Cemetery. This inclination to explore became almost a routine in my life, complete with a file on my computer listing all the places I had been to and all the places I had yet to go. It was not until the end of my second summer that I decided to stop going to these places as a tourist and start going as a learner. On July 27, 2017, I wrote down an account that has largely impacted the way I see my teaching:

Tonight, I took a leisurely walk around Washington D.C.'s monuments. I made sure to stop at each and really look, really take in the memorial, and register how I would broadcast this to a classroom of my own. The Lincoln Memorial was particularly stunning tonight, as I wove around picture-snapping tourists and bikes to pause and read the Gettysburg address. I then stopped at the bookstore where I was practically handed a quote that read "A man who denies others freedoms deserves it not himself." I made my final stop at the engraving of where Martin Luther King, Jr. delivered his famous "I Have a Dream" speech. I played "We Shall Overcome" in my headphones to really set the scene.

In that moment, I saw Washington D.C., in a very different light. I really processed that this was where his speech was, that my line of sight- the reflecting pool, the trees and grass, the Washington Monument lawn, was at one time a *sea* of 250,000 people who believed in something. I looked beyond to the horizon where I saw the Capitol building in all its architectural glory. And that glance was short lived as I drew so much more emotion from looking over

where the people once stood. I found it so compelling that a nation was changed by ordinary people- like me, like my peers, like my students- who had a shared belief. Because if I had to describe America, the freedom-fighting, get-us-to-the-moon population, it had very little to do with the Capitol building and everything to do with the people who stood before it. Democracy is, at its core, the people. I hope I never forget that.

A flood of thoughts came to mind as I experienced this: How often do we *tell* students instead of *teach* them? How often do we breeze over a historical event rather than allowing our students to engage with it and walk in the shoes of those individuals? How often do we tell our students what to know, read, or think without providing a “why.”

I am confident that I could teach a student the basic facts of the March on Washington in



**Figure 1: Edith Lee Payne at the March on Washington for Jobs and Freedom, August 1963**

10 minutes or less. It is likely that after those ten minutes, they could remember that it took place in the 1960s, that it had noteworthy leaders such as Martin Luther King, Jr. and perhaps its goal to pressure the Kennedy administration to take action in crafting a civil rights bill. I

am not confident, however, that after those ten minutes, my student would understand that the protest was called (in full) the March on Washington for Jobs and Freedom and that it was a result of a century of Jim Crow Laws systematically oppressing a race. I am not confident that the student would be able to share the experience of someone like Edith Lee-Payne, a young attendee from Detroit whose famous photograph has emblemized the day for decades. They would not know these things because I did not take the time to truly teach.

Facts and figures can be spewed out at the speed of light, but student retention of this information is short-lived. They resolve to view learning as the quickest way to memorize and ask the question “Will this be on the test?”



Figure 2. Martin Luther King, Jr. delivers his "I Have a Dream" speech on August 28, 1963.



Figure 3. View from Martin Luther King, Jr.'s speech delivery site, July 2016.

I proceeded to write:

I continued around the park to the Vietnam Veterans' Memorial, perhaps my favorite and most challenging to walk through. Panel after panel of microscopic names line the cobblestone walkway. I imagine that a lot of people pass by each day to check it off of some “visiting D.C. bucket list.” To really take in the monument, however, it's important to read some names. You won't know their individual stories, that's true, but you'll know that they have one. Each and every name on that wall had a life and a family and a story. Perhaps the only commonality they had with their name neighbors is that they served and died for their country.

I stopped and knelt at the name of Fr. Vincent Capodanno, a marine chaplain, as I so often do. Fr. Capodanno died amidst a raid on his troop. As his area was being attacked and he was being redirected towards safety, he received word that men were dying in a nearby troop. He ran, despite the bullets whizzing by him to administer Last Rites to the men because he knew they deserved them. He was injured and wounded and kept going in his pursuit until he was finally mortally wounded. This made me think of how many other people probably have a story of courage. The memorial means much more than

a four inch slab of gabbro when you start personifying the little etched names instead of glazing over them (Stefanick, 2014).

My time in Washington D.C. is what I would consider an anecdote of authentic learning. In an interest to gain a deeper understanding of my nation's history, I went beyond just reading or watching a documentary and sought out opportunities to experience it. When visiting monuments and historical sites, I challenged myself to look beyond the architectural marvel or beauty and put myself in the shoes of those who came before me. I stood where they stood, I listened to the anthems they once sang in a hopeful cry for action, I touched *thousands* of names who lost their lives in the coastal lowlands of Vietnam. I walked away from the National Mall with a heightened understanding of history- not because I just heard it, but because I felt like I experienced it. This is our jobs as educators: to give stories to names and make each and every day of school an opportunity for *authentic learning*.

### **Thinking about Authentic Learning as an Early Teacher**

In Penn State University's middle level education program, undergraduate students are given a period of three years to learn and observe various teaching methods and theories that they might seek to implement in their future classroom. As a senior, your final year is divided in half with the fall semester belonging to a "pre-student teaching experience" where the new teacher works part-time with a local teacher before embarking on their semester-long, full-time student teaching endeavor.

Before entering my pre-student teaching placement for the first time, I opened my field notes journal and defined authentic learning as the process of genuinely experiencing information to enrich a student's knowledge and understanding of the world around them. All

too often, students are in a classroom environment where the learning is segmented: “Teach, learn, test. Teach, learn, test.” The problem with this cycle is that the students are so focused on scoring well on the test that they are looking only at what will earn them points towards this socially constructed idea of success.

In ancient Roman times, when young boys would attend school, the *magister* would teach them a lesson and quiz them, either orally or using the wax tablet, in the same process that we do now. However, if students did generally well, they might receive candy or another form of a treat. In today’s classroom, a grade essentially does the same thing. This almost meaningless number is written in big red letters to signify that you did well or not so well, and should hold as much value as receiving a piece of candy at the end. Yet, our culture has let grades consume the education system, so much so that it divides off kids for advanced classes or ropes in kids for a “slower” track and less opportunities in the future.

This “learning” that we see is anything but. I am a product of this system, both as a teacher and student. How easily could I recite Bloom’s Taxonomy from my sophomore education theory class? Not at all. But I remember doing well on the test which allowed me to pass the class which allowed me to proceed to the next step in the major. Authentic learning counteracts all of this insincerity. Authentic learning encourages student curiosity to take the place of concern for success and allows students to be inquisitive. Students then seek out knowledge for the sake of improving their own education, a noble task made difficult without the assistance (or mentorship) of the teacher.

If a teacher is not seeking to instill knowledge in such a way that students really understand it and are able to draw connections, how can we expect our students to do just that? Authentic teaching challenges the teacher to craft opportunities that students can embrace to

learn more abundantly. It requests a deep commitment to engage genuinely with students, act in the best interest of the learners, and, somewhat secondarily, hold a passion for a subject's content. As a bulletin board display in my placement reminds me each morning, "[The students] won't care how much you know until they know how much you care."

An environment with authentic teaching and learning is my optimal classroom experience in creating an atmosphere of genuine understanding, and of course, it's unrealistic to see this every day. I believe that students innately have a passion and desire for learning. Looking forward to my own classroom, I hope that I can marry their yearning to learn with my hope of instilling deep understanding. Instead of haphazardly presenting what I might deem fun (i.e. video clips or music), can I be intentional in what I choose to include? Am I rambling off facts and figures and only giving answers, or am I, the teacher, asking questions of my students to spark their critical thinking? An underlying voice in my teaching philosophy is that when asked what I teach, my answer is first "students" followed by my content area.

I will begin by introducing those who have written extensively on this subject. "Authenticity" is not a new idea in the educational world, but rather, it has its roots in well-accepted tenets of teaching such as growth mindset. The Literature Review will further help define and contextualize my understanding of authentic learning and teaching and how it builds off of the foundations set by other educators.

The Methods section of this paper will detail the steps I took to complete my research. It highlights the ways I arrived at this topic and deemed it worthy to pursue and investigate. Descriptions of my educational program, placements, and people of significance will be enumerated to set the scene for my presentation of data and analysis.

My presentation of data includes a deep analysis of the journals, reflections, and resources laid out in the Methods. From my evaluation of experiences, I have devised four areas of inquiry that I consider to be essential to fostering an authentic classroom. Each sub-category investigates a different wondering I had about authentic learning: how important is it to preemptively share “why reasoning” with students, how does experiential or sensory learning enhance the learning process, how student participation affects their ability to learn authentically, and what is the value of celebrating student mistakes and short-comings.

This thesis will address my inquiry into how authentic learning and teaching can be embedded into today’s classroom. It acknowledges the uncertainty (or messiness) of a new teacher and my attempt to identify ways of achieving true student understanding. In my short time as a middle level teacher, I have found that this authentic approach to facilitating a classroom is beneficial for everyone from the apathetic student to the eager teacher. It continues to be a daily struggle to see how authenticity lends itself to various subjects and diverse student body, but this struggle- the wrestling with authentic teaching and learning- has largely informed my philosophy as a teacher of middle school students.

## Chapter 2

### Literature Review

“A person who won’t read has no advantage over one who can’t.”  
-Anonymous

How many times *can* we do things but *choose not to* during a school day? How often do we settle in our learning? How often do we settle in our teaching? As both a student and a teacher, I acknowledge that I fall guilty of this. With such an emphasis on correctness and not on true acquisition of knowledge that is relevant to my life beyond the classroom, there are times when I am hardly motivated to even attempt learning authentically. Looking ahead to my teaching career, I want to cultivate an environment that leads students to *want* to learn and seek out opportunities to learn, rather than waiting to tolerate what is given to them.

#### **What is Authentic Learning?**

Authentic pedagogy, as Dr. Fred Newmann names it, denotes “instructional activities rooted in a primary concern for high standards of intellectual quality” (Newmann, Marks, & Gamoran, 1996, p. 283). He sees a necessity for meaningful and significant goals and justifications for student work that extend beyond the classroom. In this way, his philosophy of authentic pedagogy is actually representative of what many teachers strive for: a classroom environment that is centered around building educated citizens. What Newmann calls authentic

pedagogy, I refer to as authentic teaching and learning, and I believe that this distinction helps differentiate classroom strategies.

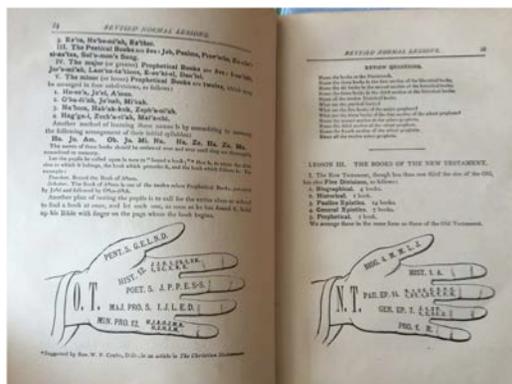


Figure 4: Revised Normal Lessons by Jesse Lyman Hurlbut

A brief look into our nation’s educational history and we see a pattern of ineffectual learning practices. *Revised Normal Lessons*, an 1893 bible study instructional guide by Jesse Lyman Hurlbut, perfectly illustrates a major shortcoming of education (materials, instructions, and goals). As seen in Figure 4, the lesson provided includes glaring non-examples

of authentic teaching. First, the guide dictates that “the names of these books [of the bible] should be reviewed over and over until they are thoroughly committed to memory” (Hurlbut, 1893, pp. 14-15). It then provides a dozen review questions, all beginning in “name” or “what” that ask merely for student recitation (p. 15). This guide neglects to address what can actually be found within the books of the bible, and instead seeks to form students into robotic list-makers. It is important to note that a resource deemed “inauthentic” (such as the pages shown in Figure 4) can still be utilized in authentic teaching with the proper framing and inclusion. Teachers must be aware when they see inauthentic materials, however, so as not to fall into a habit of relying too heavily on them.

For years, our education system was built around the teacher and the “bucket-filling” method of instruction. When I ask my grandparents about their experience in elementary or middle school, they often describe sitting three to a desk in an overfilled Philadelphia classroom with a teacher pacing at the chalkboard. They speak of the constant recitation of grammar skills or spelling and would share how their inkwells ran dry as they wrote and repeated as the teacher

instructed. Even in my own educational experiences in the early 2000s, I can cite teachers who used recitation or “drill and practice” pedagogy. As the years went on, this kind of instruction disguised itself in other ways to trap classrooms in a rhythm of “teachers teach, students learn,” most notably in ways such as PowerPoint (a well-developed presentation tool that often serves as the demise of an apathetic teacher). When used incorrectly, the learning process is stifled and the classroom atmosphere is crippled by “Wait! Can you go back a slide?” rather than temporarily delayed because of a thought-provoking question.

The problem with teacher-centered instruction is that, if used too frequently, it proliferates the “teach, learn, test” cycle and does not foster authentic learning. The alternative, student-centered instruction, is largely dependent on active learning, a term that represents anytime students engage with material or content, collaborate with their peers in academic pursuit, or participate in class instruction. This comes in many forms. It could manifest itself in greater collaboration periods, more hands on activities, and fewer lectures. In short, it is “anything that involves students in doing things and thinking about the things they are doing” (Bonwell & Eison, 1991, p. 2). If we are going to teach generations of children, we must ask ourselves what is important for them to know and instruct accordingly.

Authentic pedagogy is a method of instruction and assessment that champions authentic student achievement. This measure of student success goes beyond grading and standardized test scores and reflects a student’s intellectual accomplishments that are significant and meaningful. Based on the research and work of Newmann, it has been accepted that “authentic pedagogy (learning and teaching) has been found to support the learning of students at risk and to foster high levels of engagement and interaction” (Peterson, 1997, p. 1). Authentic pedagogy, as Newmann defines it, boasts three major tenets that helps us more clearly identify it when we see

it: construction of knowledge, disciplined inquiry, and value beyond school. In other words, teaching authentically calls students to higher order thinking activities in which they make use of this robust knowledge to investigate further or bridge experiences

Teachers face tremendous amounts of positive and negative portrayals in popular culture. When I think of exceptional teachers in television or film, the mind almost immediately lands on Robin Williams' iconic portrayal of Mr. Keating in *Dead Poets Society*. He tactfully dismantles the student indoctrination procedure of the academy and introduces the students to an unconventional form of authentic learning. To show students a new perspective, he has them stand atop the teacher's desk and jump off. To show fluency and enthusiasm, he has them march rhythmically around the courtyard and kick soccer balls while reciting poetry.

Perhaps the most blatant challenge to the "bucket-filling" method of instruction was seen when Mr. Keating had his class tear out an entire chapter of their poetry textbook. After having a student read the introductory chapter of the poetry book, Keating exclaims:

Keep ripping, gentlemen! This is a battle. A war. And the casualties could be your hearts and souls. Thank you, Mr. Dalton. Armies of academics going forward, measuring poetry. No! We'll not have that here. No more Mr. J. Evans Pritchard. Now, my class, you will learn to think for yourselves again. You will learn to savor words and language. No matter what anybody tells you, words and ideas can change the world. (*Weir, 1989*)

In this moment, this unfathomable classroom portrayal, we see a teacher who believes so strongly in his students' minds' pliability, that he seeks to guard them from being negatively influenced by inauthentic materials. An abstract subject like poetry, he argues, can not and *should not* be distilled to a quantifiable measure. Poetry is not meant to be graphed by "perfection" and "importance," but experienced. The students are very hesitant to comply with this radical dismissal of traditional learning. A full minute goes by before any of the boys even consider that this is a serious request. Who could blame them? For years, they had been

indoctrinated to learn a specific way, so much so that this counter-cultural instruction leaves them in utter bewilderment.

It would be inappropriate to ask teachers to tear up materials in an effort to be more authentic. It is, however, reasonable to ask teachers to be this wary of the traps inauthentic resources and strategies pose. In other words, whenever possible, teachers should plan in favor of student-centered engagement, because student participation is a true catalyst for growth in understanding. Those who can convey the same quantity and quality of information through enrichment and experience are truly successful as an educator.

Keating's approach to authentic pedagogy, albeit radical, would actually align with the teachings of Newmann. It is likely that the pedagogical expert would argue the fictional instructor's challenge for students to learn for the sake of becoming well-learned citizens is a strong example of his "value beyond school" tenet which serves as the foundation of his whole theory. This is how we arrive at the concept of "authenticity" beckoning educators to prioritize our goals for students. Rather than seeking short-term regurgitation of facts and figures, we are looking for big picture retention. The reasoning behind instructional choices should be genuine and intentional efforts to promote student understanding and not to run out the clock or furnish a false sense of success (high scores on formative, summative, or standardized assessments).

Dr. Richard Felder, Professor Emeritus of Chemical Engineering at North Carolina State University, has written extensively on this notion of active learning and practices it in his large lecture halls. Felder acknowledges all of the statistical benefits of this pedagogy, but influentially shares the intangible effects and benefits of running a classroom with student-centered instruction: "In the long run, [the students] learn more. They learn at a deeper level. They acquire higher-level thinking skills- critical thinking, creative thinking-and they develop better attitudes

about the subject and more confidence in themselves” (*Active Learning with Dr. Richard Felder*, 2009). However, Newmann, a major champion of authentic pedagogy, acknowledges active learning as a supportive measure, but warns that any approaches that fail to reach for high intellectual standards, regardless of how active, will “remain shallow and intellectually weak (Newmann, Marks, Gamoran, 1996, p. 3).

The title of authentic learning might not rest in every teacher’s vocabulary, but the practice of promoting real-world connections and student-centered learning has been seen in the classroom for years. Fred Newmann and his associates at the University of Wisconsin recognized that authentic learning and teaching result from very defined steps within instruction and assessment. Audrey Rule of State University of New York at Oswego acknowledged these steps and was able to draw out true pedagogical practices that strive for authentic knowledge acquisition and understanding. She notes that there is a necessity to dissect authentic learning, a rather abstract and comprehensive term, to be more concrete and applicable to a real teacher’s classroom.

In Rule’s writing, she states that authentic learning, this broad phenomenon researchers have been circling around for decades, can be refined into four primary elements. These elements are comprised of some recurring themes that are based in the research and writing of others. The most compelling cases made regarding the dismantling of authentic learning revolved around providing students with intentional opportunities for learning that relate to their lives, consider and rely deeply upon their participation, and champion real-world applications. Maina (2004) sought to describe authentic learning mainly through learner-centered instruction and lessons that have those real-world connections and problem solving opportunities that serve as a tangent to the students’ lives. Similarly, Renzulli, Gentry, and Reis (2004) elaborate on these ideas with

more refined and practical ideas for implementation. They suggest an inquiry-based instructional style that has students, motivated by a yearning to impact ideas or others, use their own knowledge skill set and interest to conduct an investigation to learn. The common thread running through each study and suggestion is that authentic learning must be a *meaningful* experience with the student as the “inquirer” and the teacher as a “mentor.”

Rule manages to weave these ideas together into her four elements to support authentic learning as a viable and accepted pedagogical strategy. Although authentic learning does not reflect a specific instructional model, Rule has devised these ways to inform one’s instructional choices. The first element discussed is that authentic learning must consist of real-world roots. As alluded to above, when students can identify that their coursework is either explicitly or implicitly related to their greater community (i.e. the world), they are motivated to engage with it. They feel a sense of responsibility as they work to make an impact that exceeds the four walls of their classroom. This can take many forms across the many disciplines, but generally involve wrapping a current event up in the content being discussed. For instance, students can visit and collect data from their community’s water source in considering the greater environmental problems faced by mankind. Connecting back to the content is then made easier as students feel a sense of motivation and urgency to engage with the work.

This push for real-world (genuine) activities take shape in Rule’s second belief regarding authentic learning. In addition to providing authentic instructional opportunities (namely inquiry) for students to learn through, the teacher must encourage critical thinking within their classes. In science, it can be said that discovery-based inquiry is a tried-and-true experience that calls upon students to pose questions, investigate unfamiliar content through hands-on means, and draw conclusions based on their findings. The “science” is then introduced to them post-inquiry to

reinforce that the discipline of science is not something that is learned, but discovered. This strategy can be replicated in other subjects, particularly mathematics but also other less obvious realms such as literacy and art.

In order for these true inquiry-based connections to take place, students need to develop the skill of working in a community of learners. Student-centered learning is rarely independent work and instead feeds off of the necessity of collaboration. When fostering a sense of authentic learning, this could look like students working in a team to dissect a real-world based problem, swapping and building off of one another's ideas and hypotheses, or bolstering learning for one another through a group discussion. Keeping students' learning contained and not allowing them to branch out and interact does a major disservice to their ability to grow. There is something rich to be learned and shared in a team-building community.

The fourth and final element that Rule seeks to convey is that authentic learning must generate learners' empowerment. This student-centered approach to teaching, which boasts a shift in instruction from teacher to student, must incorporate student choice to some degree, meaning that the "problems" they seek to investigate must be open-ended and have some inherent meaning to them. If students recognize that they have a voice in determining the avenue with which a solution is devised, they will be far more motivated to participate. This element circles back to the original purpose of authentic learning which is to motivate students through dynamic, challenging, and meaningful learning experiences. This complex *appeals* to students and enriches their education significantly.

These four elements, particularly that of producing real-world connections in the classroom, are extraordinarily beneficial for students' learning because true authentic teaching (including both instruction and assessment) is a strong and consistent predictor of student

achievement. These instructional and assessment tasks must be authentic as well; these tools should ask students to organize knowledge, engage with contrasting perspectives, delve into challenging content, make worldly connections and demonstrate knowledge to a greater audience.

The higher the level of authentic learning that focuses on higher levels of thinking, disciplined in-depth inquiry, substantive discourse, and connections to the real world, the higher the level of all students; performance, regardless of achievement level or demographic characteristics. (Newmann and Associates, 1996)

In this text, Newmann seeks to convey the culmination of his work in authenticity: authentic instruction, spelled out by several of the elements but forth by Rule, tends to result in more authentic (and higher) student engagement which, in turn, spurs more authentic student performance. This is what good teachers strive for: student excellence that bridges meaningful instruction and rich understanding.

### **Authentic Learning and Students**

Students can be an authentic lesson's most respected critics. Students are less concerned with the assessment and more concerned with the task itself, meaning that their measure of authentic learning rests in the most substantial part of a lesson (Gulikers, Bastiaens, Kirschner, 2004). If educators are seeking for them to learn authentically, then it is significant to consider their thoughts and reactions to such instruction.

In a study of 59 high school students across three engineering courses, students were questioned and interviewed on their thoughts and reactions to various authentic learning tasks (namely building a mock space shuttle mission simulation) in their respective courses. In terms of the project itself, students volunteered mixed reviews of their experiences. A majority acknowledged their appreciation for the class lesson being self-selected, self-directed, and independent. One particular student even noted the high degree of freedom and student input welcomed in the day to day instruction. They were not opposed to and actually recognized value in some peers learning different skills and developing different knowledge bases, and a wide majority deemed that this use of authentic activities truly mirrored real-world experiences of an aerospace engineer (Nicase, Gibney, Crane, 2000, p. 86). Some students saw this as a negative, however, and stated that there was too much variety in learning between peers, making the experience inconsistent and inauthentic. The students who expressed criticism of their experiences also claimed that the authentic activities were more activity-centered than learner-centered.

In general, the educators and researchers noticed a shift in their attitudes and work-ethic. Most students were visibly excited to work in partners or groups towards a common goal. They were proud of their workmanship as well as their project's progress and results. They cited a "fun and free-spirited" quality to the classes and offered solid reasoning for their self-determined success such as that they were self-motivated, had mentorship from community members beyond their teacher, worked hard and collaboratively, enjoyed their teamwork, and were challenged by their authentic tasks. Some students were so inspired by the hands-on nature of various tasks that it informed their thinking about future career aspirations.

This vignette reflects the intended two-fold benefits of authentic learning; students are meant to succeed academically and are more enthusiastic about a lesson, content, or class. Students are likely to be more motivated to invest themselves in their education, and go above and beyond in the time and effort spent on authentic tasks. Elliot (2007, p. 39) highlights one teacher's reflection on how focusing on authentic learning (in this case, interactive writing) made a noticeable impact on her students: "My students are reaching letter identification and sound symbol association mastery much earlier this school year than in the past. I believe that the interactive writing is responsible for the early improvement in my test scores. I am eager to find what the end of the school year results will show." This illustrates that authentic learning can have long-lasting effects on learners, and even the harshest critics remained mostly indifferent and do not actively dispel this is a poor pedagogical practice.

### **Authentic Learning and Teachers**

Teachers generally react positively to the adoption of authentic instruction and assessments. They recognize all parts of the knowledge acquisition- the task or activity, the assessment, and the criteria for success as all equally important in considering an authentic classroom (Gulikers, Bastiaens, Kirschner, 2004). In a study investigating authentic learning by SUNY College at Oneonta teacher candidates, pre-student teachers were asked to devise short table-top science demonstrations to be presented at their cooperating science discovery museum to elementary-aged children. The college students were provided mentorship sessions in which they discussed their plans and were encouraged to integrate many authentic methods, including enhancing resources that could be found in a classroom, into their activity.

The pre-student teachers greatly enjoyed this experience and cited several ways they developed into better educators. As the program persisted, they recognized that good instruction is less about disseminating knowledge and information, and instead is more focused on “listening, observing and being capable of diagnostically deciphering the depth and breadth of a learner’s knowledge,” and, consistent with the teachings of authentic learning, “[good teaching is about] knowing how to respond to the data in a way that will help the learner discover more fully the ideas and concepts supporting their observations” (Bischoff, 2005, p. 46). This particular subset of the teacher population was able to recognize the value of student inquiry (as outlined above) and its benefits on both the student and the instruction itself.

Aside from the greater student performance and boost in teacher development, the pre-student teachers also exhibited high levels of motivation and enjoyment about the process of teaching children. They were enamored with what they called the “intangible rewards” of watching children’s inquisitive faces sharply shift from confusion to understanding (Bischoff, 2005, p. 46). Elliot (2007) notes that this exemplifies the teacher outcomes of authentic instruction. Teachers experience a greater sense of empowerment as they become more knowledgeable about their content area, investigate their own questions, and anticipate their students’ questions. It is then that much more fulfilling to witness the influence of their decisions to teach authentically on student learning.

## Chapter 3

### Methods

In pursuit of defining and refining research of authentic learning, I conducted a self-study throughout my fall placement in my pre-student teaching experience. This is a formative time with a teaching-learning hybrid presented to budding teachers as they seek out their teaching self. As a Penn State University education student, your pre-service teaching experience is coupled with a series of methods courses affectionately called the “II Block.” This semester-long integrated coursework includes 4 primary methods classes in addition to the pre-student teaching experience and a seminar. After attending two full days in a student teaching placement and a short seminar period to debrief on those two days, students would attend *Classroom Learning Environments*, *Teaching Elementary School Science*, *Teaching Elementary School Math*, and *Teaching Elementary School Social Studies*. The II Block, although an academically demanding period in an undergraduate student’s college career, contained some of the most powerful learning opportunities as a future educator.

Self-study, an avenue of research that is centered around examining the role of an educator within the context of their classroom based on experiences, beautifully marries age-old teaching practices. Although it serves as mainly an umbrella for various other research strategies, self-study incorporates many of the principles of teacher inquiry, reflective practice, and action research (Lassonde, Galman Kosnik, 2009, p. 3-4). The advantage of this methodology is that it models the personal frame of reference recommended for the strategy of authentic learning,

drawing upon the experiences that I find significant in my growth as a middle level teacher (Rensulli, Gentry, and Reis, 2004).

In the Fall of 2017, I completed this experience at Little Flower Catholic School in State College, Pennsylvania. I was placed in a fourth grade classroom under the guidance of mentor Rose Stephens, a veteran teacher in Catholic schools for two decades. I had eighteen students: ten boys and eight girls. All students names have been changed for the purpose of anonymity.

My eighteen pupils were shuttled to this school from up to thirty miles away, and in turn, qualified for different educational assistance as prescribed by their home public school districts. Three of my students were pulled out of class weekly for speech therapy and seven different students were pulled out bi-weekly for “enrichment track,” an opportunity for qualifying students to engage in more challenging and thought-provoking activities in the arts, sciences, and humanities.

The curricula were in accordance with Pennsylvania state standards and the Common Core, and they were outlined by resources that were relatively new and updated (received within last five years). Students experienced engaging lessons in earth science and early American and Pennsylvanian history. English Language Arts was characterized by weekly spelling lists, weekly short stories and accompanying vocabulary, and overarching independent reading goals. Mathematics instruction was based on the state-wide expectations and followed the prescriptions of the math book, covering topics such as fractions, multiplication, and properties of addition.

Room 208 was plastered with bright and motivating posters and quotations, as well informative wall-hangings that elaborated on certain science or reading topics. The theme for the school year was “superheroes,” which manifested itself in superhero decorations and discussions about character qualities of a “super student.” Desks were arranged in tables of three or four to

facilitate great levels of collaboration and team-building, but left space in the room for a large carpet featuring the map of the world. The carpet, in addition to the rolling dry erase cart, allowed for instruction to be mobile.

The first step in this research was completed on the front lines of teaching in a black composition book. Each day that I set foot in my school, I recorded diligent notes (student quotes, teacher quotes, records of lessons, etc.) in this field journal. This journal contains entries from every Monday and Tuesday between August 28, 2017 and December 13, 2017 (as well as two one-week long timelines in October and November) and includes accounts as short as a two-sentence brainstorm about a future lesson and as long as one-page review of an educational principle. This skill, which was adapted from my observation course in the Philadelphia Urban Seminar program under the direction of Dr. Jeanine Staples, proved to be significant in its ability to capture what stood out on a particular day.

Taking a step back, I looked at my handwritten field notes and wrote journal entries regularly. These typed journals were most frequently written in my home on Tuesdays and Wednesdays, providing me ample time to reflect upon the field notes. These daily or weekly accounts were used greatly in the construction of this paper, as they contained my beliefs and understandings about my teaching and about teaching as a whole.

From an “aerial” view, then, I was able to comb through the copious notes and reflections to summarize what I found true in regards to authentic teaching and learning across weeks and months of experience. At the end of a month, I would revisit the previous four weeks’ field notes and journals to pull out common themes and trends in my classroom experience. This information was organized into four primary ideas of mine that demonstrate how and why authentic learning takes place. These personal “truths” about teaching are each detailed in the

presentation section of this paper and supported by research conducted by fellow educators in the Literature Review.

I have also elected to look back on other interactions with education in my life including but not limited to my own K-12 schooling, my Penn State undergraduate coursework, my summer enrichment experiences, and my “Maymester” experience in the Philadelphia Urban Seminar (detailed above).

In my time and preparation for student teaching, I identified this issue of authenticity as paramount. I want to be the most effective motivator and charismatic teacher that I can be, and I believe interrogating my own teaching methods is going to improve my strategies and refine my approach to instruction.

## Chapter 4

### Authentic Learning in My Classroom

#### Analysis and Presentation of Data

As I progressed through my teaching, field note-taking, comprehensive journaling, and analysis of writings, I identified some consistent themes across many of my experiences. These four themes or beliefs I devised were extracted from my own observations and experiences, but reflect several of the tenets of authentic learning presented in the Literature Review section of this paper. Although I can not preach these four beliefs as absolute truths, they emerged consistently in my findings and became stepping stones for implementing authentic learning and teaching in my classroom. The following section dives deeply into the experiences that constructed these ideologies and toy with the notion of authentic learning along the way.

#### **1. Answering the “Why” in Learning**

Authentic learning, although a noble goal, can be a bit idealistic at times. I would not expect to open any teacher’s lesson plans to find 35 hours worth of new and innovative content that is completely unlike what they did in the weeks before. If it were the case, elementary school teachers would be in droves exiting the profession because there simply isn’t enough time in a day to do so. In my mind, this spurs the question of when routine is okay.

On October 9, 2017, I detailed my thoughts on routine after seeing students moan about reviewing vocabulary one Monday morning:

It seems helpful to the kids that every week, they encounter some of the same routines. They know every Monday, we will introduce the new story, review the vocabulary, and read our spelling list aloud. In math, we go over a lesson sequentially through the book.

The negative side of this is that it leaves little room for interpretation and creativity. In math, if you deviate from the book's exercises, students may not be prepared to complete their homework or test (given by book).

I like that this class has struck some kind of balance between learning routines and creative assignments. I wonder if there is any kind of impact on students when routines and repetitions exist only in English and Math, and Science holds all of the creative activities.

It is when we as teachers can get stuck in this routine-this cycle- that we ignore the "why" and focus only on maintaining consistency.

### **What is the "why" and why should we care?**

Much of my elementary and middle school content was delivered without relation; meaning I was instructed to regroup while subtracting or that the southern states seceded from the Union causing the U.S. Civil War, but never taught *why* I should regroup or *why* the states seceded. These are important concepts to learn, and I would argue that providing that "why," the context for the bulk of information, can be just as important in fostering understanding. If my goal is to teach authentically and have my students learn authentically, I believe that presenting students with deeper explanations is essential.

I liked to incorporate the "why" in my math lessons and would use that "why" language when we repeatedly did guided and independent practice. When I taught my fourth graders about two digit by two digit multiplication, I had to devote the whole introduction of the lesson to addressing the "why." They had seen the standard algorithm for multiplication and could complete it systematically, but when I added a second digit, they were understandably baffled. Putting that additional number in the equation deviated from the algorithm they had known. "It can't be done," they chirped.

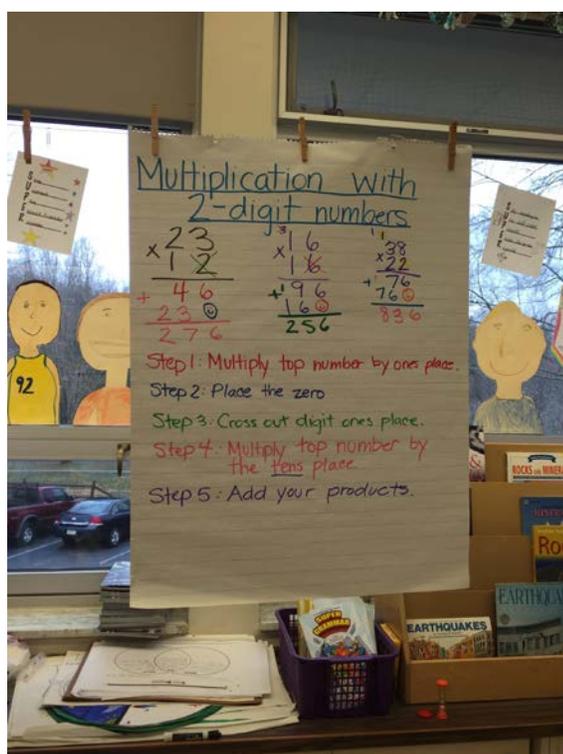


Figure 5: My Two-Digit Multiplication Anchor Chart

I thought back to my own math education and realized that I had never been taught why you solve the algorithm in the sequence that you do, just that it works every time you do it. As a student, I was often the one asking the “why” questions; not because I sought to stump my teacher or distract from progressing through the plans for the day, but instead I genuinely wanted an understanding beyond “just because” or “it’s just the way it is.” In my malleable brain, I needed to know why Step B followed Step A; it was insufficient to memorize the process. My middle school math teacher even once told me to stop

asking questions because *she* was the type of student who did not ask questions and was a successful student. As a teacher myself, I realize how quickly a well-intentioned comment can stifle a student’s eagerness to learn. My math education professor, Andrea McCloskey, altered my thinking on math instruction as she emphasized the importance of asking questions, and better yet, anticipating those “why” questions.

After discussing this issue in my math methods course, I was taught the intricacies of the algorithm and sample responses and justification to share with students so that they could have a deeper understanding of arithmetic before entering upper level math. Rather than waiting for the “why” questions, we learned to anticipate the needs and devise instruction that preemptively quells any need for “why” questions.

In the interest of authentic teaching, I believed it was important to try this in a lesson on multiplication. I began by having my students gather around me and the dry erase cart on the carpet. I began by writing “ $23 \times 12$ ” in large print. After walking my students through the aspect they were already familiar with (multiplying 23 by the ones place and writing the product beneath the line), I posed the question that brought back nothing but confused looks: “What does this ‘1’ in the tens place actually represent?” Some students expectedly replied, “a one!” Others, particularly the students in the enrichment track, squinted their eyes and studied the paper intently. I restated the question. “What does this ‘1’ in the *tens* place actually represent?”

Anne, a student seated right at my feet, shot her hand up. She exclaimed the correct answer of ten. I then set out to address the confused looks of the other seventeen. I asked them to draw on their knowledge of place value, a skill we had been working on for weeks. I explained that if we are multiplying 23 by 12 and our first step was to cover up the “1” and multiply 23 by 2, we still had 10 remaining to multiply. This explains why our second step is adding a zero to the product; it reminds us that we are multiplying our top number by the tens place, giving us the correct answer each time we perform the algorithm.

The class erupted in “oohs” and “aahs” as the hieroglyphics written on the paper suddenly became clear. I repeated the same explanation as we worked through the next two examples, each time adding more and more student input. I then had students return to their desks and continued examples on the SMARTBoard while they physically wrote the problems out on individual dry erase boards. This repetition reinforced the “why” explanation I gave on the carpet, which will hopefully help them with their conceptual understanding of multiplication as they grow up and begin algebra, geometry, and beyond.

I could have easily told the class to write the zero into the product just in the interest of getting the correct answer. Doing so would have likely saved a substantial amount of time and students would have committed the procedure to memory quicker, but they would lack the deeper understanding of what they were doing. As teachers, we should be more concerned with instilling long-lasting skills in our students. We are past the age where memorization or the “easy way out” is a viable mode of instruction.

## **2. Sensory Learning is Often Authentic**

In order to push our students to learn in an authentic way (or, conversely, to teach in an authentic way), teachers can provide concrete opportunities for inquiry. Sensory learning is a reliable gateway to introduce students to content and understanding, because they do not just receive information, but *experience* it through sight, sound, taste, smell, or touch. This is a challenging undertaking for teachers, who are often indoctrinated with the idea that they must remain the impetus for learning in the classroom, that every academic concept must be clearly laid out for students to digest. Although saying information outright might provide a simple and clear enumeration of facts that students could retain, it is much more beneficial to gift students with the mystery and struggle of learning.

In many ways, I would categorize my Washington D.C. experience as sensory. Being able to touch the names of the Vietnam Veterans Memorial, hear the anthems of the Civil Rights movement, and see the grandiose marble monuments was a truly compelling experience. This caused me to feel as though I experienced the history as opposed to just reading about it. Through my science methods course, I furthered my understanding of the power of experience.

On the very first day of class, the instructor and long-time researcher and teacher of English and Science, Michelle Brown set out petri dishes of milk in the center of each table. She instructed us where in the petri dish to put drops of red, yellow, blue, and green food coloring and then allowed us to insert a toothpick with trace amounts of dish soap. We, as college seniors, were enamored with the experiment when the colors dispelled away from the dish soap in a darting motion.

We immediately started peppering the instructor with questions about what happened. She turned the question around on us and asked us. We sat dumbfounded. She then provided us with enough materials to continue experimenting with different liquids and processes until we each had a semblance of explanation of the chemical reaction that was occurring.

At the conclusion of the lesson, Michelle explained that this is what real teachers do. They pass the power of learning over to the students and allow them to experience the science before you share the content knowledge. Before telling us that the polarity of milk and soap are different (causing the reaction) and that this experiment is replicated every time we wash our hands, Michelle urged us to interact with the science, draw our own conclusions, and in some cases, make mistakes. She did not redirect us when we wanted to fill petri dishes with dish soap and drop water in. She did not redirect us when we wanted to fill the petri dish with soap first before adding milk. In fact, she gave us a second and third petri dish because she knew that letting our minds explore and experience this small bit of science was so much more impactful than telling us what to do.

The most efficient way to adopt this practice is by consciously creating opportunities for students to engage their senses in the classroom. Doing this sometimes means taking several days for something that you could explain in five sentences-a challenge to teachers who seek to

savor every minute of instruction time. When I planned my lessons and was consciously trying to achieve authentic teaching, I attempted to have students utilize their five senses as much as possible. I was vigilant in my observation of my mentor teacher, who was very determined to make her classroom as hands-on as possible.

The beginning of fourth grade science revolves around weather, and in particular, hurricanes. Rose Stephens, my mentor, used the textbook pages as a general skeleton for how to progress through a unit. Although the class did not read through most pages or tackle every subject presented, the textbook was a consistent pacemaker when deciding on the direction of a lesson. On one of the first days of the school year, I perused the students' science textbook and estimated how long I anticipated this unit taking. After looking at the number of pages and the content presented, I believed it would be no more than a week. After all, that was the science I was accustomed to learning: read 2-3 pages per day, complete the "investigation" questions listed at the bottom of each, and then perhaps complete a simple experiment at the end of each chapter that called upon the information we had "learned." I was shocked to learn that the information on these six pages on hurricanes would take us upwards of three weeks to cover.

The students were overwhelmingly interested in learning about hurricanes. Hurricane Harvey, Hurricane Irma, and Hurricane Maria all reaped their devastation during this time and garnered significant media attention. Our prayer intentions each morning were riddled with the news stories of the hurricanes that had plastered every news outlet hours earlier: families trying to evade the rising water levels by hiding in their attic, family dogs leading the charge to evacuation, or a pregnant mother making the difficult decision to leave her home before the storm hit. Every student had a story, had heard a story, or was interested in hearing a story about the most destructive month of hurricanes on record (Belles, 2017). As devastating as the situation

was, they were enamored with the stories being iterated to them and sought every opportunity to share it with others.

I watched as my mentor teacher led discussions day in and day out about hurricanes and the ways in which they formed and wreaked havoc on land. The highlight of this unit was when she invited Aaron Tyburski, a meteorologist from the National Weather Service, to be a guest speaker in the classroom.

In my educational experience, bringing in a guest speaker often feels like a means of counteracting bucket-filling instruction. They often come in with some semblance of a lecture, but also plan to engage the students. This particular guest was exceptional in his understanding of fourth grade and provided several unique ways of presenting hurricanes to the class. First and foremost, he brought in physical weather maps of hurricanes for the students to look at. This visual resource was not only informative but lent itself well to student interaction.

The most impactful part, however, came when the speaker asked if the students wanted to experience a hurricane. The class erupted in cheers and excitement at the prospect of what this meant. After dividing the class into two sections, he delegated responsibilities and then elected one student to make his way to the light switch. As the student flickered the overhead lights on and off, half of my students struck their palms on the desk while the other half tapped their fingers. This simulation represented the thunder, lightning, and rain. He then asked a series of questions about what they felt in the “hurricane” and how it was similar to that of a real storm.

This immersive experience was small scale and easily replicable; it required no materials and just 60 seconds of instruction but allowed students to have a hand in seeing, hearing, and “feeling” what it was like to be in a severe weather phenomenon. Providing a simulation took learning one step further than what a video or film could provide. I was very impressed by this

non-educator's ability to shape my ideas about teaching. His commitment to sensory learning compelled me to seek out ways to make my teaching more authentic. One such example of this is when I was tasked with teaching a week-long unit on sedimentary rock.

“Not all the types of rock? Just sedimentary?” I asked Rose. Because my knowledge of geology was rather limited, I felt like I had been handed an impossible task. I really wrestled with the idea of authentic teaching in preparation for this lesson. I was very unsure if students were truly learning more *authentically* as a result of these conscious choices I made or if it was constructed in my mind.

I speculated for days how I would transfer a single type of rock formation into a week of dynamic and informative lessons for 36 fourth graders. With the help of my veteran mentor and an intentional eye towards authentic learning and sensory integration, I devised a plan that would teach the material almost exclusively by sensory discovery.

On the first day, I brought in grated crayons in four different colors. The class was grouped around tables and given a tray of the crayon shavings and an empty plastic condiment cup. Using a sedimentary rock diagram on the SMARTboard, I enumerated the steps through which sediment- rock, soil, sand, silt, or animal bones-compact together on the ocean floor to form layers of sedimentary rock. As I narrated the steps, I snuck in directions for students to assemble their “crayon rock.” Beginning with the red “sediment,” one student poured a thin layer of crayon shavings into the cup and then the group took turns using their fingers to push down on the layer to mirror the act of compression in rock formation. They then repeated this process with yellow, green, and blue crayons. With a little help from aerosol glue, we were able to solidify the layers so that, after capped, the students could pass their cup around and observe the layers they made. I asked them for their observations of the process, and, using the analogy of the crayons in

the cup, they were able to identify and name parts of the process of sedimentary rock formation (erosion, deposition, compaction, and cementation).

Questions and observations arose that inadvertently led them to greater knowledge acquisition with little doing on my part: “Miss Fenerty, look at the yellow layer. It has little bits of green and blue in it. Do layers always mix together?” This presented the opportunity to explain how, although our layers were primarily a single color, a real layer of sedimentary rock would have many different types of sediment in it.

I remain adamant that a question like that would not have arisen if I had my students solely look at the diagram. In an attempt to be authentic, my lesson was student-centered and afforded them the opportunity to touch and see the process of sedimentary rock formation. Giving them the ability to touch and hold the science instead of merely showing them enabled a much richer period of instruction. Even after going through this entire lesson, I remain unsure if every single class and lesson needs to be (or can be) authentic, but I do see the value in setting it as a goal. At the very least, they might remember the simulation and the geological knowledge more than if we had not done it at all.

### **3. Authentic Learning Epitomizes Student Participation**

As a matter of practice, I try and keep my class as learner-centered as possible. Usually, my lessons have various teacher-centered components, but then transition into an inquiry or discussion-based learning time. I have found this to be a reliable recipe for what I deem authentic teaching to be because it provides students with enough content while also ensuring they have the freedom to discover for themselves. Drawing on the work of Dr. Richard Felder and his vast

promotion of this pedagogical style, I champion student participation because I believe that active learning can be a vital key to authentic learning.

In October of my pre-student teaching semester, I was tasked with teaching students about wind anemometers and how they measure the speed of wind. After familiarizing myself with what an anemometer actually *was* and how I was going to get my cohort of ten year olds to understand it, I composed a brainstorming list in my field notes journal with idea after idea as my mentor teacher thumbed through a book she had used during her student teaching placement over a decade and a half earlier. Together, we examined the thought of having students build their own weather instrument and tacking on a statement about its purpose at the end, but my mind would not quit circling about its mission of authentic learning and student-centered instruction. I negotiated with myself over what is easy and what is authentic, what will my students enjoy and what will they remember, what is a temporary solution and what will ultimately generate student understanding and information retention. With the guidance of Rose, I decided that groups of three or four students would receive a previously made anemometer (made of paper plates, small plastic cups, and a pencil) and then would rely on the other tenets of authentic learning I laid out (sensory, answering “why”). I believed it would be more authentic to have the students hold an anemometer and inquire about how it operated and how that function facilitated “science.”

We began the class outside on the school’s hill to establish the “what” and “why” of this instrument. Although teacher-centered, this conversation lent itself to student inquiry and ideas. “What is this?” I began, “Why do we use it.” Then the question that stumped them all, “How does it work?” About one third of my students raised their hands to give me some variation of the same postulation: the wind spins the cups and the tool tells us the speed. “You’re right. We

are going to measure the wind speed, but *how* does it do that?” I was persistent in my questioning and relentless that I would not give them the answer outright. After rephrasing the question three times and reacting to student responses until it finally clicked in the mind of one student, Robert. (I will admit that as a new teacher, I was concerned that my students would not arrive at the answer. It is challenging to commit to “wait time,” but in light of my conscious effort to invoke student-centered instruction, I knew that the critical thinking-the struggle- was helping my class become better learners.) His correct answer lit a spark that spread about the circle of students. Soon, all eighteen of their brains had connected the scientific purpose and methodology with the structure they were holding.

Now that we had established what this contraption was and how it worked (a system of counting spins and time), I moved the students back into the classroom to test it in a controlled environment (the goal was for them to experiment outside, but the lack of a breeze led us to our plan B- a small box fan). One at a time, I brought a group up to the fan. They delegated tasks-one counter of time, two counters of spins, and one person to hold the anemometer. With fifteen seconds on the clock, they were vigilant in their watch of the black-dotted cup to see how many times it rotated about the pencil.

This explanation of a wind anemometer could have been a one sentence definition that was never revisited, but the choice to center it around student participation was not exclusively for the purpose of learning about wind speed measurements. It was more about fostering the critical thinking skills necessary to figure it out on their own. Even as fourth graders, they could do it! As long as I was patient and persistent in my intentional question-asking, the students stayed with me and followed my train of thought until they came up with hypotheses.

This was not a perfect example of authentic learning or student-centered instruction. I spoke throughout or guided much of the conversation and did not provide opportunities for inquiry when it came time to test the instrument. It actually made me question whether my inclusion of authentic teaching only extends into the preliminary introduction of a lesson, with me taking the attention and discovery back in exchange for a direct explanation. However, considering the time and resource constraints, the students' age, and the evidence I witnessed and collected, I believe that this was a successful learning experience. Throughout the 40 minutes, there was higher engagement and less opt-out than a normal day. The retention of information was high as I checked for understanding the next day and then two weeks later on their end of chapter exam. Then, most importantly, it became a part of students daily conversation. "Remember when we made those wind things?" was heard casually and regularly. Although they couldn't recite a definition or perfectly enumerate the process by which it measures wind, I am confident that these students will carry this experience (the recreation of an instrument and getting to experiment with it both inside and outside) with them for years.

When seeking strong student participation in the planning of a lesson, it is easy to mistake "engaging" for "fun." Although the two can be synonymous at times, they are significantly different; for me, it took trial and error to come to distinguish these two. In both scenarios, student participation is highly valued. My science methods course provided an opportunity to test and, more importantly, grow in our understanding of learner-centered instruction. It is only fitting that my uncovering of learner-centered instruction was a result of my own inquiry and learning experience.

The journal entry below highlights my journey from student participation to *meaningful* student participation. It acknowledges my grappling with "fun vs. engaging" as I worked through

the preparation of a lesson for my science methods course in the II Block. As we prepared for the *Praxis* teacher certification examinations, Michelle Brown, our science instructor, had us select various topics to be covered on the science portion and requested that we each prepare a fifteen minute lesson on it. We presented the lesson twice to our peers, once in September in the second week of class and the second time in the first week of December, giving us an opportunity to demonstrate improvement and reflect on our own strengths and weaknesses.

In my September *Praxis* lesson on heat transfer, I found myself teaching the bare bones of convection, conduction, and radiation. ‘This is all they need to know for the test,’ I heard myself saying. After I taught the material on a PowerPoint, I passed out a matching game for them to arrange by process. This was a hidden form of drill and practice, an instructional method I stand vehemently against relying on. Several of my peers even told me weeks later they remembered nothing from my presentation. I was so discouraged because I felt it would be a testament to my teaching in front of a classroom. By November, however, I was able to identify the flaws in my presentation and create a more learner-centered lesson. I scrapped the idea of “making it fun” and looked for ways to engage students that allowed them to witness heat transfer. I found an experiment that used red hot water and blue ice cubes to illustrate the movement of water and a song that made the necessary information and facts easily digestible and memorable. I want to carry the notion of learner-centered instruction into every class that I teach because this different approach to achieving scientific understanding allows each student to experience the content individually and develop their own knowledge.

- December 2017

“This reinforces what I believe about learning: it is experiential. If students are not given every opportunity to see, hear, and feel history, then they are already a disadvantage in learning.

-January 2018

In both accounts, I acknowledged that student participation needs to be intentional; otherwise, it may constitute busy work and fall into inauthentic learning territory. If we want students to learn authentically- to be curious and connected detectives who remember information days, months, or years later, then we as teachers should seek to invite students into the instruction process.

## 4. Authentic Learning Celebrates Mistakes

When considering teaching and learning authentically, I must remember that my interest in student success will likely see anything but that along the way. In other words, if we desire a destination of success, we must acknowledge that students will likely fail on the journey. If every assessment (formative or summative) a teacher delivered returned with 100% of the accuracy, it would be glaring that it was too simple. If it returns and every student has failed it, it is clear that it was too difficult. Recognizing that a grading bell curve is both unrealistic and impractical to expect, where do we place the line for success? As someone who truly believes in the art of authenticity when thinking about teaching and learning, I consider success more genuine than quantifiable and less reliant upon grades. Students are conditioned, however, to believe that grades indicate success and that any disclosure of confusion or uncertainty would jeopardize their facade of success. In order to shake this perspective from a class, a great starting place is in allowing and encouraging mistakes.

I learned of this idea of celebrating mistakes from Andrea McCloskey, the same math instructor to teach me about emphasizing the “why” in education. On the first day of the II Block in Fall of 2017, Andrea proposed a problem that would stump us for weeks (or months) to come. It was the *infamous* “Bobo and the Train” problem.

Bobo is  $\frac{1}{3}$  of the way across a bridge when he hears a train whistle behind him. A huge locomotive and tons of boxcars are coming at him at 45 mph.

Bobo knows that he can make it to the far edge of the bridge at the exact same instant as the train, but he also knows that he can run toward the train and reach the near end of the bridge

just as the train gets there. How fast does Bobo run?

Day in and day out, this problem puzzled us. We were tasked with attempting different variations of diagrams and algebraic expressions. Many of us arrived at an answer only to have it differ from our neighbor. Of the 23 students in the class, only 13 were Math education concentrations, with 5 English concentrations, and 6 Social Studies concentrations.

Our second or third time working through the problem, one classmate raised her hand and said “Andrea, I’m just....confused.” Often, this is where a teacher would either disregard the student emotions by simply asking them what they don’t understand or overcompensate and assure them that they will *someday* get it. Andrea, however, responded in a way I didn’t expect. “Yes, awesome!” she exclaimed.

She used this opportunity to share with us how valuable it can be to praise students who put forth the effort in an attempt, even when they’re unsure or wrong. Andrea made it clear that her class, her emphasis was not on the answer but the struggle. There is a lot of (authentic) learning that takes place in the solving of the problem. Additionally, if you only cheer on the right answers, the principle of positive reinforcement tells us that it encourages more right answers. Students who are not sure if they are right, however, may be discouraged from even attempting.

The II Block concludes with a Classroom Learning Environment Plan (CLEP) presentation, which summarizes all that you learn and plan to do as a result of the pre-student teaching experience. The project reviews different key teaching beliefs, classroom procedures, and various instructional strategies one has developed throughout their time in the classroom. When it came time to construct my CLEP project, I had no hesitations about what to include in

my class expectations. In large black letters, I scribbled the words: “Make Mistakes.” After further consideration, I think a more appropriate phrasing for the same goal could be “Celebrate Mistakes” or “Learn from Mistakes.” No matter the diction used, I see encouraging students to try even if they fail and grow from past mistakes as just as important as respect or responsibility. If I ask my students to give me their very best work, I cannot expect them to be correct all the time.

At first, it seems as if it goes without saying. Of course, middle school students are going to make mistakes. Some days, they will make more mistakes than not. Closer observation tells us that mistakes play a larger role in the classroom than just being wrong. When students feel like they have the chance to fail (more specifically, fail in front of classmates), they are less likely to participate. In one essay, a teacher discusses that this phenomenon of students being afraid to raise their hand in class could ironically be titled *Victims of Excellence*. “If students are afraid of mistakes,” she states, “then they’re afraid of trying something new, of being creative, of thinking in a different way. They’re scared to raise their hands when they don’t know the answer and their response to a difficult problem is to ask the teacher rather than try different solutions that might, gasp, be wrong” (Tugend, 2011).

It was a matter of weeks into the school year when I saw this “victims of excellence” complex take shape in my own classroom. For an II Block assignment, I was holding impromptu conversations with students and posing the question: “What do you think it means to be good at math?” The responses I received were generally expected and reinforced what I already believed to be true:

“Answering problems right quickly or in your head.” –Anne

“Getting the right answer. If you get the wrong answer then you’re bad at math.” –Catherine

“To be able to figure things out better. Life if you’re in the grocery store, you can add up your prices faster or think better.” –Ethan

“Know most of the answers. If you know the answers, then you get better grades.” -Jessica

Not only were these four student responses (and the others not recorded above) focused on being right and a grade-based success, they were hesitant to answer that question at all. I often had to follow up the question by reminding them that their answers would not be considered wrong in my eyes and I was simply looking for their opinions before they felt comfortable sharing their thoughts. I would categorize these students as true victims of excellence, so conditioned to “school” a certain way that they have a weakened understanding of what learning should actually look like. I certainly relate to this system of learning as I reflect back on my own educational experience. I suspect that, as a fourth grader, I would have responded to that prompt in a similar way because I was so focused on grades and correctness, that I was closed off to the prospect of authenticity. Correctness and authenticity can absolutely coexist, but too much emphasis placed on being right can inhibit one’s willingness to learn authentically.

I am fortunate that my classroom experience thus far has been a breeding ground for my mistakes. Both my fall and spring mentors have encouraged me to go full-force with planning and execution of a lesson, even if it ultimately fails. Encouraging mistakes is not only a recommendation for the pupils; it is a good practice for authentic teachers. Another teacher in the community recently told me that a tenet he promotes in his classroom and in his professional life is: “Fail. And fail at 100% and then I’ll come over and give you a high five and [teach] you how to do it right the next time.”

During my unit on sedimentary rock, I devoted a day to having the students make their own sample of Coquina rock, a type of sedimentary rock that includes large sediment (shells, bones, and stones) fusing together to make a very coarse and textured rock. Using dry pasta, water, and white glue, I tasked students with mixing together the ingredients before dumping the

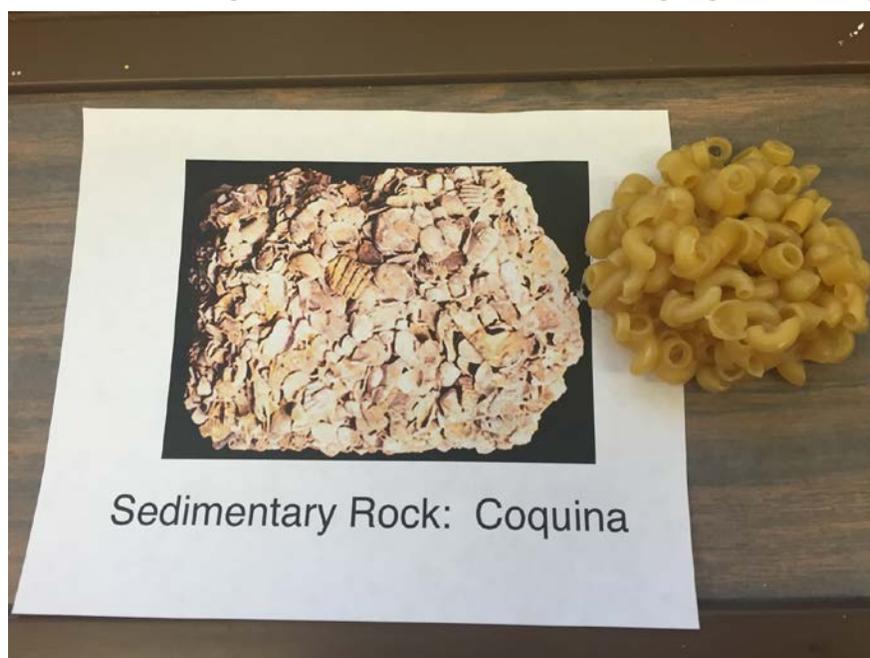


Figure 6. 4B's Coquina Rock sample made from pasta and white glue.

pile of contents onto wax paper.

I envisioned the fourth graders tackling this assignment with ease. After all, the “recipe” directions indicated that the whole activity should take no longer than 10 minutes, preparation time

included. I subsequently planned a flowchart activity that I would model and students would copy that elaborated on their understanding of the coquina rock activity. To my consternation, however, the making of the coquina rock ran well past the 40-minute allotment that I had to teach. Left and right, I had 10 year olds spilling their glue and pasta, overmixing, undermixing, trying to eat the concoction, whining about being hungry, asking for more materials, and wandering around the classroom. I spent the *whole* class period chasing after my own ill preparation and trying to maintain order in Room 208. As the lunch bell dismissed the students, I shared how poorly I thought the lesson went with my mentor. I cited the lack of classroom management, the mess, and the lack of instruction as the reasons for my feeling of defeat. She

reassured me that, although my perception was worse than the actual product, I had the opportunity to revisit the lesson the following day and had the power to make changes before the next fourth grade class came in.

Students can be very adept at learning to accept mistakes, whether they are their own or those of their teacher. Because they are conditioned to be correct, it takes a bit of coaxing and reassuring to have them see how mistakes help. One high school student from the Midwest recognized failure as a great tenet of authentic learning: “We fail sometimes because we are still kids. But failing and learning makes us do better each time, and better the next time” (Nicaise, Gibney, Crane, 2000, p. 87).

## Chapter 5

### Discussion, Implications, and Conclusion

Authentic learning and teaching have grown in depth and meaning throughout the last two decades, and as a newcomer to and inquirer of the strategy, I have determined this to be a worthy pursuit because of its empirical success, both in my experience and in the research surrounding it. As Newmann seeks to reiterate, authentic instruction followed by authentic assessment ultimately leads to authentic student performance and achievement. This equation must be spurred by a teacher's desire to instill meaningful and significant experiences in their class by way of real-world connections, engaging and discovery-based inquiry, fostering of strong, supportive learning communities, and student-centered motivation (Rule, 2006, p. 2).

What I found most compelling about this experience was how proud and motivated teachers can be when engaging in authentic learning. In my pre-student teaching experience, I found that the lessons I planned in accordance with authentic learning intentions generated the most enthusiasm within me, and although I was sometimes nervous of the results, these were the lessons that reaped the biggest rewards. Students reacted with "oohs" and "aahs," or asked questions about it days later, or performed better on formative assessments. As someone new to the profession, I was elated and giddy to see this degree of a reaction from my students. This is echoed by Elliot (2007) when she elaborates upon the consistent feedback of efficacy and empowerment from teachers who practice authentic learning. Thinking back to my own teachers, I can remember their faces lighting up as they explained what they implicitly named the "fun" and engaging (and what I would call authentic) projects such as dissecting a fetal pig in AP

Biology or sending my entire sixth grade on a “Grand Tour de Europe” in our gymnasium, featuring nine unique countries’ cuisine, crafts, and history. I was not anticipating seeing a noticeable change in teacher demeanor, but it is now clear that teachers who are excited about learning have students who are excited about learning.

Another thing that I found to be interesting was the push for teachers to take on a mentorship role in the classroom and bestow students with the power to inquire and learn material. Because this self-study was conducted in a fourth grade classroom, I did not find this to be a strategy I could fully introduce. Instead, I opted for a modified version of “full-inquiry” in which I provided my students authentic opportunities to follow the trail of their curiosity and discover, but reined them back in to help them connect their discoveries to the content. Even if I had a more cognitively developed set of students, I am doubtful that the best way to learn is by giving students complete choice in how a day of instruction goes. In the space shuttle simulation study, many students appreciated the independence they received for authentic tasks, but several students also cited it as a disorderly and *inauthentic* way of teaching because they felt like they left with little or no new knowledge (Nicaise, Gibney, Crane, 2000, pp.86-87).

These beliefs about authentic learning run parallel to my own developments based on my pre-student teaching experience. As I thought critically about my time teaching fourth grade, I found that the most compelling cases of student achievement and success emerged from my attempts to implement authentic teaching. As I identified the four trends of authentic learning, I found how valuable reflective practice can really be for a teacher and his or her class. The reflection and analysis brought upon by identifying these strategies informed my thinking about planning, instructing, and assessing my students. I no longer sought to help my students earn good grades, but instill a love of learning and curiosity within them. As I continue to learn from

and define authentic learning as a tenet of my classroom, I am confident that I will consistently form into a better teacher.

Looking ahead to my future teaching, therefore, I anticipate many steps to be taken in the development of this strategy. I plan to continue refining my authentic learning and teaching practice beginning with my data collection. Throughout this study, my evaluation of outcomes was purely qualitative and represented a wide array of assessments, leading to inconsistencies. Moving forward, it would be helpful to establish a baseline of students' ability and performance before introducing authentic learning, so that I could truly gauge how the success rate for the strategy.

The four beliefs I gleaned from my investigation (answering the “why,” engaging the senses, championing student participation, and seeking to develop students from their mistakes) are a great place to pick up in my first year of teaching and serve as an extension to the educational research. Although they do not fully or completely represent authentic learning, they branch off of the research nicely and reflect personal experience rather than simply research. I recommend trying this educational strategy to any new or veteran teachers, and encourage any such educator (including myself as I continue this journey) to be deliberate about their instructional choices, challenge themselves to try risky lessons, and be diligent in record-keeping to show growth and improvement.

The practice of authentic learning and teaching lends itself to more engaged students and the formation of lifelong learners. Authentic learning champions student curiosity and, by nature, promotes student inquiry. In the process, insincere methods of instruction and assessment are swept aside in place of dynamic opportunities for student-centered, active learning. Students are

given more responsibility and voice in their education and are able to facilitate a greater amount of their learning.

When designing a classroom with authentic learning in mind, it can be expected that the role of the teacher shifts to that of a mentor and the role of the student shifts to that of a teacher. Although there is not a defined recipe to make instruction authentic, the general beliefs outlined in this self-study (as well as that of researchers before) can serve as a stepping off point for future teachers. After establishing intentionality to embed authentic learning into a classroom, one can expect an experimental period as students adjust to the new climate. In a way, implementing authentic learning in a classroom provides its own opportunity for authentic learning.

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## ACADEMIC VITA

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### Academic Vita of Laura Fenerty

lfenerty10@gmail.com

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#### Education Experience

The Pennsylvania State University 2014-2018  
Middle Level Education, Social Studies 4-8 Option  
Special Education Minor  
Schreyer Honors College Scholar

*A Self-Study into Authentic Learning and Teaching in the Middle School Classroom*

Thesis Supervisor: Mark Kissling

#### Relevant Experience

Mount Nittany Middle School January-May 2018  
*Student Teacher*  
7<sup>th</sup> Grade Social Studies

Our Lady of Victory Catholic School August-December 2017  
*Student Teacher*  
4<sup>th</sup> Grade ELA, Mathematics, Science, Religion

#### Work Experience

**Sidwell Friends School** (Washington D.C.) June 2016-August 2017  
*Counselor*

- Aided classroom teacher in creating and executing independently-developed schedule in academics, athletics, and enrichment areas
- Assisted in classroom management and course development

**Alliance for Catholic Education** (University of Notre Dame, South Bend, IN) 2017-2018  
*ACE Ambassador*

- Led recruitment efforts for the ACE 25 cohort by sharing the program's mission both on the individual and organization level

**Penn State Residence Life** (State College, PA) August 2016-present  
*Resident Assistant*

- Supervised a residence hall of first-year students and advised them as they navigated academics and involvement on the university level
- Served as a mentor, counselor, community builder, and policy enforcer