

WPI

Teaching Practicum: Reaching Proficiency in the Massachusetts Professional Standards

Daniela Santos
Professor John Goulet, Advisor
March 13, 2017

Contents

Dedication	1
Abstract	2
Chapter 1: Background	3
Massachusetts Department of Elementary and Secondary Education	3
Doherty Memorial High School	5
Chapter 2: Well-Structured Lessons	8
Chapter 3: Adjustment to Practice	9
Chapter 4: Meeting Diverse Needs	11
Chapter 5: Safe Learning Environment	13
Chapter 6: High Expectations	15
Chapter 7: Reflective Practice	17
Chapter 8: My WPI Education	18
Chapter 9: My Classes	19
Period 1: Honors Level Statistics & Probability	19
Period 2 : Advanced Topics	21
Period 4 : Advanced Topics	24
Period 6 : Advanced Topics	25
Conclusion	27
Appendix	28

Dedication

This paper is dedicated to the man who inspired me to become an educator, Geoffrey P.

Higginbotham: my life changing 10th grade literature teacher. A man who lived a short lived life but a full life. With only eight years as an educator he made a bigger impact on students lives than some will do in a lifetime. Mr. Higginbotham taught me that I would not be perfect at everything in life, however if I put my mind to it, I could achieve the impossible. He taught me the power of imperfection and the power of words. He showed me being a teacher was more than just textbooks, it was about the relationships you form. - "take it easy" Higg .

Abstract

This paper demonstrates the experience of a student completing their Teaching Practicum in Mathematics at Doherty Memorial High School during the fall of 2016. The purpose of this paper is to exhibit proficiency of the five professional standards from the Massachusetts Department of Elementary and Secondary Education which include : well-structured lessons, adjustment to practice, meeting diverse needs, safe learning environment, high expectations, and reflective practice.

Chapter 1: Background

Massachusetts Department of Elementary and Secondary Education

Many would credit the overwhelming national success of the Massachusetts education system over the past two decades to the Massachusetts Education Reform Act of 1993. Around the year 1990 the Massachusetts Business Alliance for Education (MBAE) created the Every Child a Winner report which was considered to be very influential in creating the reform act of 1993. Although the reform act was a big change in the Massachusetts education system that originally had some expected pushback; it was a change that was supported across the board from not only both political parties but also the educators that would be distributing the material.

The purpose of the reform act was to create a state-wide expectations for students and their educators to ensure that students would be provided with equal opportunity for success. The act included that students would have high standard requirements they would need to meet as well as state-wide assessments. The act also included a system that held educators, schools, and their districts accountable to any new changes created to the system. Monetary constrictions of some institutions would not be a problem due to the fact that the act designed a finance system that allowed school districts with lower incomes to have the resources necessary to meet the requirements of the act successfully.

The reform act did not stop there. The Massachusetts Reform Act of 1993 created a greater impact than just its basic framework it also initiated education licensure, professional development days, and evaluations for educators. Vocational and charter schools also emerged allowing success for a variety of students in the Massachusetts K-12 education program.

The efforts made by those in 1993 bring us over two decades later where Massachusetts is known for their lead in the educational system today. By taking a glance at Table 1 it is clear to see on a international scale Massachusetts still has a little work to do however they are not far from competing with major countries such as Japan and Hong Kong. Also looking at the average scaled score, Massachusetts scored 52 points higher than the nation as a whole. In Figure 1 performance of the students was broken down into three categories: knowledge, application, and reasoning. The nation as a whole especially struggles in application and reasoning, there is also not a substantial amount of improvement made from the year 2007 to 2011. Massachusetts on the other hand has a performance nearly doubled the nations as well as a steady increase in improvement between the years of 2007 and 2011. This evidence does not even touch the surface on Massachusetts incomparable education system and it is all due to the changes that were made in the reform act of 1993 that many states have begun to adapt parts of.

Country/ Benchmarking Entity	Average Scaled Score (Std. Error)	Standard Deviation	Rank*	Significance of Mean Difference
Korea, Republic of	613 (2.9)	90	1	$p < 0.05$
Singapore	611 (3.8)	84	2	$p < 0.05$
Chinese Taipei	609 (3.2)	106	3	$p < 0.05$
Hong Kong SAR	586 (3.8)	84	4	$p < 0.05$
Japan	570 (2.6)	85	5	Not Significant
Massachusetts	561 (5.3)	73	5	-----
United States	509 (2.6)	77	9	$p < 0.05$
TIMSS Centerpoint	500	100	-----	$p < 0.05$

Table 1 : Grade 8 Performance on TIMSS 2011 Mathematics Assessment

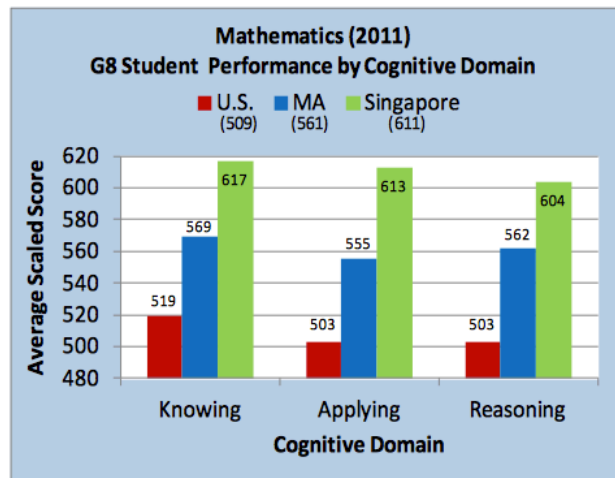
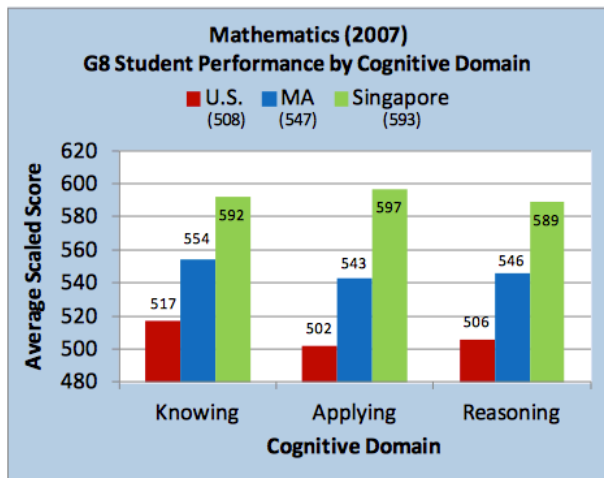


Figure 1 : Comparison of Mathematics Student Performance by Cognitive Domain

Doherty Memorial High School

Doherty Memorial High School is within the Worcester Public School District. Worcester has a high population of low-income households as well as a large refugee population. Many students from this district come from first generation households where they are the first to be given the opportunity to go to school. There is also a large population of students who come from non-english speaking households. Nearly half of the students enrolled in the Worcester district are Hispanic which is double the state's enrollment (see Table 2). Doherty Memorial is not short off of the districts as a wholes statistics. Doherty Memorial has a larger population of African American and Hispanic students than White. These are all contributing factors to the schools within the districts dynamics and continue to be obstacles that many educators in this district face.

Enrollment by Race/Ethnicity (2016-17)			
Race	% of School	% of District	% of State
African American	16.1	15.4	8.9
Asian	7.8	7.4	6.7
Hispanic	31.7	41.8	19.4
Native American	0.3	0.2	0.2
White	40.6	31.1	61.3
Native Hawaiian, Pacific Islander	0.0	0.0	0.1
Multi-Race, Non-Hispanic	3.5	4.1	3.4

Table 2 : Enrollment by Race/Ethnicity (2016-2017)

Doherty Memorial High School falls short on their MCAS results compared to the state. Doherty Memorial performed lower in all three subjects: English and Language Arts, Mathematics, Science and Tech/Eng compared to the state of Massachusetts as a whole (see Figure 2). This shows that Doherty Memorial as a school is not keeping up with the states standards. This could be due to Doherty Memorial's diverse socio economic backgrounds. In the year 2016, Doherty Memorial High School was a Level 3 in accountability and assistance which is one of lowest performing 20% of schools. All of the student groups within the student body also did not meet the target in narrowing proficiency gaps (see Figure 3). Deeming Doherty one of the lower performing schools in Massachusetts which leads to many drop outs. Doherty has an above average amount of drop outs throughout the years of high school especially during the 10th grade year with an alarming percentages especially within the English Language Learner students and Hispanic/Latino Students with 11.0% and 7.6% drop out rates respectively (see Table 3).

Grade and Subject	Proficient or Higher		Advanced		Proficient		Needs Improvement		Warning/ Failing		Included	CPI	SGP	Included in SGP
	SCHOOL	STATE	SCHOOL	STATE	SCHOOL	STATE	SCHOOL	STATE	SCHOOL	STATE				
GRADE 10 - ENGLISH LANGUAGE ARTS	83	91	41	47	43	45	11	6	5	3	349	92.8	50.5	300
GRADE 10 - MATHEMATICS	71	78	52	54	19	24	17	15	13	8	350	84.9	55.0	301
GRADE 10 - SCIENCE AND TECH/ENG	62	73	21	29	41	44	30	21	8	5	330	82.6	N/A	N/A
ALL HIGH SCHOOL GRADES - ENGLISH LANGUAGE ARTS	83	92	41	47	43	45	11	6	5	2	349	92.8	50.5	300
ALL HIGH SCHOOL GRADES - MATHEMATICS	71	78	52	55	19	24	17	15	13	7	350	84.9	55.0	301
ALL HIGH SCHOOL GRADES - SCIENCE AND TECH/ENG	62	74	21	30	41	44	30	21	8	5	330	82.6	N/A	N/A

Figure 2 : MCAS Test for Spring 2016 for Doherty Memorial High School

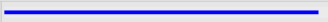











This school's progress toward narrowing proficiency gaps (Cumulative Progress and Performance Index: 1-100)				
Student Group (Click group to view subgroup data)	On Target = 75 or higher ■			View Detailed 2016 Data
	Less progress		More progress	
All students				63 Did Not Meet Target
High needs				61 Did Not Meet Target
Econ. Disadvantaged				-
ELL and Former ELL				62 Did Not Meet Target
Students w/disabilities				62 Did Not Meet Target
Amer. Ind. or Alaska Nat.				-
Asian				-
Afr. Amer./Black				71 Did Not Meet Target
Hispanic/Latino				56 Did Not Meet Target
Multi-race, Non-Hisp./Lat.				-
Nat. Haw. or Pacif. Isl.				-
White				60 Did Not Meet Target

Figure 3 : 2016 Doherty Memorial Accountability Data

Student Group	# Enrolled Grades 09 through 12	# Dropout All Grades	% Dropout All Grades	% Dropout Grade 09	% Dropout Grade 10	% Dropout Grade 11	% Dropout Grade 12
All Students	1,486	27	1.8	0.8	2.8	1.8	1.9
High Needs	837	24	2.9	1.3	4.9	2.6	2.6
Economically Disadvantaged	588	17	2.9	1.9	4.5	2.9	2.3
LEP English language learner	323	14	4.3	0.9	11.0	2.6	3.5
Students with disabilities	236	5	2.1	0.0	3.0	0.0	5.2
African American/Black	225	3	1.3	1.9	1.7	1.9	0.0
American Indian or Alaskan Native	3						
Asian	129	1	0.8	0.0	0.0	4.2	0.0
Hispanic or Latino	450	17	3.8	0.0	7.6	4.1	3.5
Multi-race, non-Hispanic or Latino	44	1	2.3	5.3	0.0	0.0	0.0
White	635	5	0.8	0.6	0.6	0.0	1.9
Female	692	8	1.2	0.5	1.7	0.7	1.6
Male	794	19	2.4	1.0	3.6	2.8	2.2

Table 3 : 2016 Doherty Memorial Drop Out Rate

Doherty Memorial High School provides a variety of classes that are broken into three different levels: college level, honors level, and advanced placement. The majority of the classes

that I worked with were college level classes. These classes were filled with many students of color or hispanic backgrounds. A high percentage of english language learners as well as students with disabilities were also seen within these classes. The classes offered by Doherty Memorial all follow the common core structure, however classes such as Advanced Topics do not have curriculums therefore it is up to the responsibility of the educator of those classes to form a curriculum they find fit.

Chapter 2: Well-Structured Lessons

To create a successful classroom an educator must have well-structured lesson plans each and every day. This includes having an organized plan that is not only engaging to the students but also challenges them each and everyday. There should always be a measurable objective that the students know they should be striving to achieve by the end of each and every class. This only is possible with appropriate materials, resources, activities, technology, and more to optimize class time.

This is one of the most important practices of a successful educator. When you walk in to a classroom you never know what you are walking in to because the matter of the fact is that you are walking into a classroom of 20 to 30 teenage high school students. If you walk into that room with no plan, your intended lesson will never reach its full potential. A successful educator is always prepared with all the bells and whistles that go along with their intended lessons. Class time is already limited, there is no time to spare to be shuffling through pages. An educator's biggest priority is to use time effectively in a manner that ensures the students have enough time to truly understand the material.

During my teaching practicum I demonstrated competency in this area in multiple fashions, specifically through the Advanced Topics classes I taught. Teaching the three Advanced Topics classes the school offered was a unique opportunity. This was a class that did not have a curriculum for me to follow as it is a class meant for students who have taken Algebra I and Geometry in the past, but have not shown proficiency in those subjects and are in need of a refresher. I prepared for this class by creating detailed lesson plans for a unit at a time. What unit I deemed to cover at what time was based off anonymous feedback I would have the students submit at the end of every two weeks that included topics they believe they could use practice in. On top of the feedback I also took a look at the MCAS results for Doherty Memorial High School and brought up topics that the school as a whole needed improvement on. These detailed lesson plans included a break down of what the measurable objective of each day would be, planned 'Do Now's, notes on the material that would be covered, planned out engaging activities that the students would be required to complete. Although the detailed formal lesson plans were nice when creating the unit on a larger scale, for my convenience I created day by day lesson plans that I would have on my desk at all times for a quick refresher on what I planned to cover that particular period and ensured that I stayed on task throughout the day.

Chapter 3: Adjustment to Practice

Although a planned lesson is very necessary to an organized classroom, many times things do not go as originally planned. Lessons that were meant to cover material in a way that would reach all students might not be as effective as originally planned out. Therefore it is important for an exceptional educator to adjust their practice throughout their career due to individual needs and or

the time. An educator shows their exemplary adjustment to practice by organizing and analyzing results from a system of assessments to determine where the progress of the class lies. This allows the educator to realize if those classes are going in the right direction towards their intended goal. However, what makes the educator exemplary is what they do with these analytics. The educator takes the results and adjusts their practice based on the results, implementing changes on a class and individual student setting.

I believe this is an important practice for many of the straight forward reasons such as each individual student learns in a different manner but the most important reason to me is that I have found that many educators have not kept up with the current time. Through my personal experience as a student in the Rhode Island K-12 experience , and my experience as a student teacher in the Massachusetts I have come across some educators who are still using the same lesson plans they created 10 years ago. Times are changing. Technology is being integrated in many classrooms. New methods and approaches to learning are constantly being added to the classroom. If an educator does not take the time to assess their methods and correct their lessons to the current time than in my opinion they are constricting the education of the students that sit in their classroom each and every day.

Through my time in the teaching practicum I showed competency in this area in a few capacities. Although there were many times I would give ask for informal feedback every few weeks, I knew I had to do more than that so that I would be able to adjust me lessons on a day by day scale. I did this by having the students complete their 'Do Now' on a small piece of paper. I was then able to quickly shuffle through them and within a few seconds I would have a quick understanding on where the students were with the material. If the students hit the nail on the head

I would most likely go faster than I actually attended, or if no-one in the room could answer the 'Do Now' maybe I should back track and try to figure out where the gaps are. I was always on my feet and ready to adjust my lesson in a seconds notice. The adjustment to my lesson could simply be that I may have assumed that the students knew how to add numbers with negative values, but that was not the case so I would have to do a mini sub-lesson to ensure that the students understood each and every step. I never knew what the background knowledge of my classroom would be as it varied, so I became very good at this skill and I believe by the end of the practicum it became one of the areas I was most confident in.

Chapter 4: Meeting Diverse Needs

Classrooms throughout the nation, especially those at Doherty Memorial High School have many students with diverse needs. One of the number one priorities of an educator is to quite literally educate their students no matter the obstacles they may cross. The ideal classroom in which each and every student learns in the same exact way does not exist. Education is not uniformed. Thus, it is important that a successful educator meets diverse needs during every class they teach.

An educator who meets diverse needs is an individual who uses multiple methods/practices throughout the period of the classes they teach to ensure that each individual student is reached. This optimizes students educational value and their behavior. Students who are not being taught in a manner that engages them quite often leads to misbehavior.

The practice of meeting diverse needs is something I strongly believe is dire for an exemplary teacher. It is often thought diverse needs are something that is only seen in lower-level

classes or in classes with students of disabilities but that is not the case. Diverse needs exceeds disabilities. As a student in Advanced Placement classes when I was in high school, it could be thought that if I could do work at that caliber, there were nothing I need from my educator, but the truth of the matter was I am a hands on learner. I learn through practice. If my educators had not implemented hands on learning through out their lessons there is no possibility I would have learned as much as I have. Having a diverse repertoire of teaching strategies is one the most powerful tools that an educator can have.

During the teaching practicum I showed competency in this area by covering my bases during each and every one of my classes. Due to the abundance of ELL students I had in the classroom I knew it was important to make sure everything was written out in front of them. This meant having the daily objectives written on the board. Instructions on what to do as soon as they walk in to the classroom that day. Fill in the blank notes that they can follow throughout the lecture. Homework assignments for the night written on the far left-hand side of the classroom. This allowed these students who were not strong in english able to visually see everything and gave them the opportunity to connect the vocabulary to the functions in the classroom. Many of these ELL students also were students who needed to retake the MCAS and needed a little extra help. The school provided help for students who were retaking the state assessment, but the session was not of much help to many of my students due to the language barrier. I was lucky enough to have a strong Portuguese and Spanish speaking background that allowed me to have after school help sessions for these students in their native languages. I found this to help the students tremendously, and was something that they were beyond thankful to have had.

The classes I taught also had many students who had a wide range of accommodations that were very feasible to work with. Whether it be giving extended time on quizzes or preferred seating, things that in my experience occurred without thought because as an educator I would do anything to ensure they could excel. Something I implemented in my classroom that helped those individual students with accommodations and even those who did not have accommodations that took some practice was color coordinating notes on the board in accordance to the function that occurred between each step. Many students in my classroom struggled to understand when things should be multiplied or subtracted etc. With the color coordinated notes they were able to see things in a different way. Many of my students actually began to purchase colored pens so they could color coordinate their own notes, and the results of improvement within those students were noticeable.

Chapter 5: Safe Learning Environment

A safe learning environment is essential to a classroom. If a student does not feel as though they are safe within the walls of the classroom, how are they expected to perform to the best of their ability? A safe learning environment includes having a routine with your classes. Responding to students in a positive manner encouraging them to be able to take academic risk. Creating relationships with the students, to understand their behavioral actions to ensure these behaviors do not interfere with the learning of that individual student and/or their peers.

I believe this is very important to create a safe learning environment to ensure a great classroom dynamic. An educator wants their students to feel like they can raise their hand and answer a question, and whether they answer that question correctly or not they feel as though they

learned something. They want their student to have the confidence to walk up to the front of the class and show their work for a problem that might not be the easiest. They want their students to understand that the mistakes they make are common and an essential part of learning. Most importantly they want their students to feel safe, and that the behaviors of others around them will no effect them in anyway shape or form.

Throughout the teaching practicum I demonstrated competency in this area. I had many students in my classrooms who were not initially confident in their mathematical skills. They struggled with simple mathematics such as addition and subtraction. Due to past experience many of the students did not immediately feel as though they could get up to the board and make a mistake. As time went by and I began to develop relationships with each of the students and got a better understanding where there fears lied and was able to work with them past it. Within the first few weeks majority of the students would feel confident enough to give any question at least a try. This is because I never used negativity within the walls in my classroom. Simple phrases such as “not quite, however I like the way you are thinking” are much more encouraging to a student than completely shutting them down.

The classes I was given also had many behavioral problems. The students had gotten into the habit over the past few years that their behavior was acceptable, which was far from the truth. I had students who would throw objects throughout the lecture, move desks, scream, call one another names, a window literally fell out of my classroom at one point. I could not turn my back for a single second. These behaviors created an unsafe classroom environment for many in the classroom. Knowing what to do with each of these students became something I struggled with. Many of the educators in Doherty Memorial believe the solution is to always kick that student out of

the classroom for the period, but in my opinion my job is to ensure they are learning and how is that possible if they are not physically in the classroom. That brought me to this crossroad where my students safety was in jeopardy as well as their opportunity to learn. This is something that I believe I still have not perfected as I believe it is not something you can learn in a textbook but can only be taught through experience. My method was to get to know each individual student and hope that I could find some sort of root to their actions. I also tried to stress that their behavior did not effect only them, it effected everyone sitting in the classroom. By the end of my practicum I earned a lot of trust and respect from many of my students which shifted their behavior. At the end of the practicum I believe this is the area I could still improve on and will work to improve on constantly throughout my career as an educator.

Chapter 6: High Expectations

It is easy for a teacher to not set high expectations in the classroom and expect the bare minimum for their students. Expecting the bare minimum is not challenging the students on an intellectual level. Exemplary teachers are expected to challenge their students through high expectations. Holding high expectations include effectively reinforcing students to have a consistent mastery of all the material presented to them. It is also important to not hold reputations of certain types of students create a misconception of what an individual student is able to achieve.

I believe holding high expectations is important because of what I saw throughout my time in the teaching practicum. Throughout the building of Doherty Memorial there were educators who did not set high expectations for their students, and then there were educators who truly exemplified setting high expectations for their students. This allowed me to view the full spectrum

and their outcomes. The students in the classes who did not have high expectations did not seem to be motivated. They were very understanding of the fact that they could do the bare minimum and do just fine, but they did not learn because they were never being challenged. On the other hand the students who were in classes where high expectations were set in place the students were clearly challenged in a manageable way. They exemplified the meaning of learning. They were constantly working towards getting better and not just staying stagnant in their educational careers.

I achieved competency in this area during my teaching practicum. I was told that there would be times that I would just have to accept the work they put forth. I would have to expect that some students were meant to fail and that other times the “best” thing we could do for a student is to pass them along. I would like to think these individuals want the best for the students and just showed it in the wrong way. At first I tried to be okay with that mentality, but I just could not be. I knew these students who were sitting in front of me all had a true potential and I wanted to let it shine through. I set high expectations for each and everyone of the classes I taught. Most of the classes I taught were not used to being assigned homework or being penalized for not doing their work. My standard were a rude awakening. Many students began to fail, which is when I was able to see a turning point. The students knew that I would not budge and unless they began to show me that they were putting in their all, they would just continue to fail. After a few weeks into the school year, the students began to regularly take notes in class, stay after or come during my lunch break for extra help, and come in to class with their homework completed. I began to see some students actually develop a thirst for knowledge : they wanted to learn. Pushing students to realize

their full potential through setting high standards was probably one of the most rewarding experience I had throughout the practicum.

Chapter 7: Reflective Practice

A strong educator plans out lessons in advanced, and while planning out those lessons an image of perfection is created in their mind. Perfection is not reality and many times lessons may not go as planned, students might not grasp the material as fast as you expected them to or might have even grasped it faster than planned. Therefore it is important practice for the educator to use reflective practice. Reflective practice includes regularly reflecting how effective the lessons, homework and the activities within the classroom are with the students. This can be accomplished through student feedback formally and informally. Another method that could be used to receive methods on how to approach certain content in a manner that will benefit the students is through asking for feedback from a colleague that might have past experience with it. Many times colleagues could have some of the most useful advice and should be utilized by many more educators in todays age.

Throughout the teaching practicum I showed competency in this area through bi-weekly informal feedback from the students. At the end of some of the classes I would have students complete an 'exit card'. The questions the students were asked to answer would be written on the board and would be based of whatever feedback I felt was necessary. For the classes such as my Topics classes where I was given the freedom to create my own curriculum I would ask in what areas they felt they needed more practice in and in what areas they felt like they had a good grasp on. I would also asked for constant feedback on what I could improve within my classroom

structure, should I add more group work, did they enjoy the fill in the blank guided note sheets, did they feel like the practice quizzes were a good representation of the quiz they were ask to complete, etc. This information combined with the formal feedback forms that I was required to have the students fill out truly directed my approaches to teaching in the classroom. I put into account everything the students were looking for. These feedback forms were how I discovered that the student would like me to color coordinate my notes, that they wanted me to review completing the square just one more time, and that they would like to have assign seats because sometimes their friends actually hindered their education.

Chapter 8: My WPI Education

I am very grateful for the education I have received from WPI over these past three years and I truly believe it gave me a different approach to education than many other education majors. As someone who went into a classroom with the background from a STEM project-based university I came in with this expectation that the best method towards education is theory and practice which after a semester of teaching I still believe holds true. I was taught through the WPI plan that being given the theory only hits the surface of knowledge, to truly understand anything in life one must practice. This is something I brought into each of my classrooms. It also allowed me to show the relevance of the material. Many of my students unfortunately may never have the opportunity to continue their education after high schools so creating a connection of where they would use this in the real word was really important to keep them interested in the material. This is something that the WPI plan prides themselves on. Every WPI student does not leave WPI without some sort of

real world experience. I wanted to ensure the same for my students so I connected many lessons to things such as paying bill, getting car insurance, and tipping at a restaurant.

A challenge I came across due to my education was breaking up mathematics into very small fragments. As a student who attends a STEM school it is almost inevitable to have a strong background in mathematics. So it is very difficult to have just left a class such as Differential Equations and then step into a classroom where I would be reteaching factoring to a senior in high school.

Chapter 9: My Classrooms

Period 1: Honors Level Statistics & Probability

The Honors Level Statistics & Probability class was a class made up of 17 seniors. The stereotype of this class was known to be the math class you took when you did not intend to put much work forward however still wanted to get an A in an honors level class. Thus, the motivation with the students in this class was lacking. The mentor teacher I was assigned to was very lenient with these students before I had taken over, allowing them to stroll into class up to 20 minutes late and have technology out during the class period. This created a negative classroom dynamic that was difficult to break once it was my opportunity to take over the classroom. When the bell rang at 7:20 am I would have at most two students in counting. Once the students did manage to stroll through they would not have a late pass. Throughout the class period they would constantly try to spend the period talking to their peers about the latest football game and mindlessly type their lives away on their cellphones. This was not a classroom dynamic I found acceptable.

Once I had taken over the class I no longer allowed students to stroll in late without a late pass in hand. I also began to assign simple homework assignments to ensure the students would be prepared to tackle the unit of the next class period and make up for the class time that is lost due to the little attendance. I no longer began to wait until I had a reasonable amount of students to begin my class, I began promptly at 7:25 am and those who were not there were responsible of getting their notes off their classmates. Originally there was a lot of pushback from the students as they believed they have rights as the seniors in the building to be given an easy A. Eventually they caught on that I was not going to budge on these matters after they had to collect multiple late passes each week and ended each class with their cellphones on my desk. The behavior in the class slowly but steadily improved. The enthusiasm and motivation on the other hand was still lacking. The students might have been physically in their seats but whether or not they were there on a mental level was another question. At this point I realized it was time to get their feedback on what they would like to do with Statistics & Probability. I decided one morning that I was not going to do the routine 'Do Now' that I start each mornings with, instead I grabbed a seat and sat at eye level with the students and just talked with them. I explained that I understood they are seniors, therefore I want everything that we do together in class to be applicable to their lives. At this point the students came to the realizations that I did not want to make their lives miserable. One of the more spoken out students in the class made the comment that they wanted the class to be about sports, the class chuckled. After some thought that night, I came into class the next morning with a proposition. I introduced fantasy football to the classroom. The deal was if the students spend Monday through Thursday coming into class on time and spend the entire time working efficiently, Friday would be used to work within their teams to draft up fantasy football teams using statistics of

each player to reason the decisions they have made. This was an example of reflective practice that was a success. Giving the students something that they were interested in and yet still applicable to the material in my opinion is the most effective teaching model.

When it came to behavior in this classroom besides the initial lack of motivation in the classroom, this was a very well behaved class. Students raised their hands regularly, were very respectful to not only myself but also their peers. This class was honestly one of the biggest delights to work with, they started off my day on such a great note and I am very thankful to have work with each and every one of the students in this class room.

Period 2: Advanced Topics

The period 2 Advanced Topics class was made up of approximately 30 junior and senior year students. The number of students in the class fluctuated at many times due to the fact that this is a lower level math class and many of the students who are in this class will rather drop out or enroll late into school. This class in particular had an abundance of english language learners (ELL). Many students in the classroom did not come from household in which English was spoken, their native languages ranged from Spanish, Arabic, French and Albanian. The language barrier in this classroom created a challenge for me. This class is meant for students who have taken Algebra I and Geometry however have not reached proficiency on the MCAS, hence the amount of ELL students within the class room.

I taught all three of my Advanced Topics classes in a similar fashion. The students entered the classroom grabbed a piece of paper and completed the 'Do Now' that was written on the board in the front of the classroom. I then collected those individual sheets of paper to get a quick grasp

on how the students are feeling with the material so far. I would then write on the board a commonly made mistake made by the class, and work with them to correct the mistake so they could get a greater understanding on how they went wrong. The class followed with a brief 20 minute lecture with pre-made fill in the blank note sheets for the students to follow with as this class is not provided with a textbook. After a brief lecture the class is asked to work with their peers to complete a problem set. During this time I walked around the classroom being able to give the students one on one attention. The class would wrap up with students putting their answers with work for a variety of the problems that would then be reviewed before the class ends. Due to the amount of students in the class who were not comfortable with their english this class structure seemed to be the most effective practice. This allowed students to always have every instruction written write in front them, it allowed them the chance to participate in the class without having to literally speak out in front of the class. It also allowed me to give the one on one interaction time that the students needed but could not stay after school to get because many had to rush home to help support their families.

Out of all of the classes that I taught this class gave me a wide range of experiences. Within this classroom there was a student seated in the back right hand corner who went by the name of Salah. This student did not come to class often, he did not speak up, and his work did not show improvement. I originally believed that his work was a reflection of his attendance, but that was not the case. One day while I walked around the classroom I saw Salah pul out his phone and copy something off the screen onto the sheet of paper in front of him, before immediately reacting I took a moment to observe what he was trying to do. It quickly became clear that Salah was copying down his own name to ensure he spelt it correctly. This is something I never thought I

would come across in a high school classroom. I kept Salah after class and talked to him, he explained to me that he was a refugee in his homeland and had never gone to school because he had been in hiding. He did not know how to read and write in Arabic. He had only moved to the United States merely three years ago and has yet to be able to read and write in English. This was a heartbreaking thing to hear from a student, and I originally had no clue how I was going to work with this individual. After talking to other teachers in the building for advice they explained to me that this student as well as his younger brother both have struggled in classes due to their language barrier. Their best advice to me was to utilize another Arabic student in the class who had a strong English background and to just have patience. I did exactly that. Salah had a friend in the class by the name of Ali, Ali helped explain to Salah what was occurring in the class in a more familiar language. I also spent a lot of extra one-on-one time with him to ensure that he not only became a stronger student but also worked on his English skills.

This class also included one of the most stubborn students I have ever come across by the name of Cesar. This student refused to participate in class, he never submitted homework, and would hand in quizzes essentially blank. I had tried it all when it came to him. I would go up to him individually and offer my assistance, I offered to stay after with him to catch up on work with him, I sent letters home along with his quizzes to demonstrate to his parents that he needed to put an effort into my class. After no responses out of Cesar I realized it was time to make a call home to his parents. This phone call put all the pieces together. The man on the other end of the phone call did not speak a word of English, thankfully the language in which this individual spoke was Spanish so I was still able to communicate with him. I began to explain to him that I was worried about his son Cesar. He quickly explained that he was not Cesar's father, he was just his guardian. I

continued to explain that Cesar was failing my class but that if we worked together we could get Cesar into a state in which he was passing the class. This man had absolutely no care in the world. He could have cared less whether or not his student was passing, he believed homework was not necessary, and he did not understand why I was even calling him. Cesar was merely just a reflection of his home life. I kept Cesar after class one day and explained to him that I just wanted to ensure that he passes this class. I explained that he needed this class to graduate and that I was on his side. His response was one that I was not expecting. He yelled at me. He explained to me that he does not understand why I care, that I was not suppose to care. These were words I never expected to hear out of a student's mouth. My entire life I was shown that educators care about their students and their success, but in this boy's experience that was not the case. Over time Cesar began to trust me. He began to come to me with questions and his grade quickly raised. This situation was such an eye opener and truly demonstrated that you never truly know what a student goes through until you get to know them and that is why creating relationships with your students is one of the most important things a successful educator can do.

Period 4: Advanced Topics

The period 4 Advanced Topics class was made up of approximately 25 students. Many of these students were students with disabilities. This class also incorporated a teacher's aide to assist specifically with special education students in the classroom. Although this originally seemed as if this would be of assistance it was actually quite the opposite. The special needs teacher I was assigned to work with was suppose to be in the classroom each day to assist me in giving the students that one to one help they required. Unfortunately, this was not the case. He never showed

up to class and when he did he just handed the students the answers and many times those answers were incorrect. This became a challenge I never thought I would have to face. It reached a point that even after talking to him about his attendance and his “help” with the students , nothing had changed. He still did not show up to classes and when he did he was just handing out quiz answers so I never knew whether or not those individual students had an understanding of the material or not. After nothing had changed, it resorted to me having to make multiple versions of the quizzes, making it difficult for him to just hand out answers.

Otherwise, this was an amazing group of students to work with. Although there were many students with disabilities and language barriers through working together, forming relationships with each of my students, and using the same structure as used with the period 2 Advanced Topics class everything truly worked smoothly. This was an active class. I never had to force students to go to the board, everyone always wanted to contribute. They were constantly asking questions and were very thankful of the time I put in and out of the classroom to help them and their gratitude was noticed.

Period 6: Advanced Topics

The period 6 Advanced Topics class had very similar demographics as those of in the period 2 and 4 class. The only difference with this class was the behavior of the students. This class was quite the handful, and probably my greatest challenge when it came to discipling students on their behavior. This is a class that truly tested me on my ability to always be on my toes. I could not turn my back for two seconds otherwise a war would have started between the students. There were many students who did not get along in the classroom, and even with

assigned seating I could only separate these individuals to an extent. Although this class was the group of students who challenged me the most they were also the group of students I believe I became the closest to and formed the greatest relationships with.

These students were used to always being kicked out of classrooms and being suspended frequently which is something I avoided, including a student who went by the name of Juan. Juan had a very loud presence and was always looking to be noticed. He would abruptly get up in the middle of class, crumble other students worksheets, etc. This was obviously unacceptable behavior, but on the other hand having him go to the office was not going to correct this behavior either. So, I decided to get to know Juan. I quickly learned he did not have the easiest home life, which explained much of his behavior. After talking to Juan we came up with some agreements. If he behaved and did his work in class he would be able to spend his lunch break in my classroom as that was my free period. This agreement did wonders to the classroom environment. Once Juan began to behave, I started to make similar agreements with others in the class and the challenge of teaching this class in particular decreases and became the hardest class for me to leave behind in December.

Conclusion

During my semester at Doherty Memorial High School I learned much more than just how to become an effective educator, I learned about myself as an individual. I learned where my strengths and weaknesses lied. I am thankful to have been able to teach along side so many amazing educators who have become some of my role models, and to have had the opportunity to teach an incredible group of students who without a doubt taught me much more than I could have ever taught them. These individuals made this experience something I will keep close and dear to me for many years to come. After this experience I feel equipped to enter the field of education after graduation.

Appendix

Lesson Plan 1 - Finding Parallel & Perpendicular Lines

Lesson Plan Title: Finding Parallel & Perpendicular Lines

Teacher's Name: Daniela Costa

Subject/Course: Topics in Algebra & Geometry

Unit: 2

Grade Level: 11th & 12th

Overview of and Motivation for Lesson:

This lesson introduces parallel and perpendicular lines to the students.

Stage 1-Desired Results	
Standard(s): <ul style="list-style-type: none">G.GPE.5	
Understanding(s): <i>Students will understand that . . .</i> <ul style="list-style-type: none">Parallel Lines have the same slope , while perpendicular lines have inverse slopes.	Essential Question(s): What is a perpendicular line? What is a parallel line?
Content Objectives: Knowledge: <i>Students will know . . .</i> <ul style="list-style-type: none">How to find parallel and perpendicular lines win given the original equation Skills/Performance: <i>Students will be able to . . .</i> <ul style="list-style-type: none">Be able to take an original equation and generate an equation of a line that is parallel and an equation of a line that is perpendicular to the original equation.	Language Objectives:
Key Vocabulary - Slope Intercept Form, X-Axis, Y-Axis, Slope, Y-Intercept, Parallel, Perpendicular, Reciprocal	
Stage 2-Assessment Evidence	

Performance Task(s) or Key Evidence

- Two class periods before the day of their assessment (Quiz) the students will be administered a pre-quiz to complete in class to gage what material they need to work on.
- At the end of the unit the students will be administered a quiz (more than one version of the quiz will be administrated) that will test the students fairly on the material.

Other Evidence:

- Each day the students are given a Do Now to complete and hand in within the first 5 minutes of class. I then collect them and sort through them quickly so I can get a quick gage of where they are at
- Each day the students will be given a work sheet to be completed during the period that will be submitted at the end of the period to the educator or the following day if not completed by the end of class.

Key Criteria to measure Performance Task (s) or Key Evidence

- [Click here to enter text.](#)

Stage 3- Learning Plan

Learning Activities:

Do Now/Bell Ringer/Opener: Each day the students will come in and grab a piece of scrap paper and complete the following Do Now that will be written on the board located in the front of the classroom.

1. Identify the Slope-Intercept & Slope of the following equation (you must also graph the equation)
 $y = \frac{4}{3}x - 7$
2. *insert the graph of $y = \frac{2}{3}x + 4$ on the board* Please Identify the Equation that goes along with this graph.

Learning Activity 1:

Fill in the spaces on the notes sheet that is distributed by the educator at the beginning of class as she does a mini lecture.

Learning Activity 2:

Students will then break into their assigned groups for that day and complete the practice problems that are on the work sheet.

Multiple Intelligences Addressed:

- Linguistic Logical-Mathematical Musical Bodily-kinesthetic
 Spatial Interpersonal Intrapersonal Naturalistic

Student Grouping

- Whole Class Small Group Pairs Individual

Instructional Delivery Methods

- Teacher Modeling/Demonstration Lecture Discussion
 Cooperative Learning Centers Problem Solving
 Independent Projects

<p>Accommodations</p> <p>Multiple Students:</p> <ul style="list-style-type: none"> -time required to process information before requiring a response -directions and information repeated/rephrased/clarified as needed -cues to remain on task, focused, redirection as needed -calculator -homework assignment written on board -drill and repetition 	<p>Modifications</p> <ul style="list-style-type: none"> -students are encouraged to work as hard as possible on one problem at a time (quality of understanding vs. quantity of problems completed) -notes are handed to the students with spaces for them to fill in information to keep them concentrated and allows them to have organized notes to look back on -educator walks around the classroom to ensure that students stay on track and to get a gage on how the students are understanding the material, also makes it easier for the students to ask questions to the educator. -the location of the calculators and rulers are always pointed out to in the beginning of class, if the students feel they need one. -all tasks are written on the board as a reminder -multiple practice problems are given to allow students to continuously practice the problems.
<p>Homework/Extension Activities:</p> <p>Any and all material not completed in the time allotted is expected to be completed for homework and turned in the following class period.</p>	
<p>Materials and Equipment Needed:</p> <ul style="list-style-type: none"> • Do Now Sheets • Daily Worksheet 	

Adapted from Grant Wiggins and Jay McTighe-*Understanding by Design*

Quiz 1 - Linear Equations Quiz

Topics in Algebra & Geometry

Name _____ ID: 1

Linear Equations Quiz

Date _____ Period _____

Write the slope-intercept form of the equation of the line through the given points.

1) through: $(0, -5)$ and $(-3, -4)$

2) through: $(-2, -5)$ and $(0, 3)$

Write the slope-intercept form of the equation of the line described.

3) through: $(2, 1)$, parallel to $y = \frac{5}{2}x - 1$

4) through: $(-3, 4)$, perp. to $y = -3x + 5$

Complete the Following Word Problems

1. Cellular phone companies often package their products to make them more attractive to potential users. If you average 730 minutes per month in talk time, which package is the better deal.

- Package A includes a free phone and 600 minutes. It will cost 0.10 per minute for each minute over the plan time. Package A has a **base rate** of \$39.95.

- Package B has a phone that costs \$30 and has 700 minutes of time and 0.05 per minute for each minute over the plan time. Package B has a **base rate** of \$50.95 not including the phone.

2. Andrew wants to rent a car for a trip to Florida for one week. He calls Cheap Car Rentals for prices. Cheap Car Rentals rents a Pick Up Truck for \$120 for one week plus \$0.09 per mile over 115 miles. If it is 1232 miles to Florida, how much would it cost for Andrew to drive to Florida?

3. A plumber charges \$40 to make a house call. He also charges \$25.00 per hour for labor.

A. How much would it cost for a house call that requires 3.5 hours of labor?

B. If the bill from the plumber is \$155, how many hours did the plumber work at your house?

BONUS

Your phone company is offering you 2 different rate plans. The first plan has a \$30 service charge, and then charges \$0.03 per minute. The second plan only has a \$10.00 service charge, but charges \$0.06 per minute. At what point would the first plan be the better deal?

Work Sheet 2 - How to Solve Multi-Step Equations

Name: _____ Period: _____ Date: _____

How to Solve Multi-Step Equations

WarmUp- Combine like terms.

1. $3x + 2 + 5x + x + 6 + 12$

2. $x^2 + 2x + 9 + 3x^2 + 4x - 6 - x$

What is a Multi-Step Equation ?

A Multi-Step Equation is _____

Example:

$3(x+2) + 6 = x - 4$	Original
	Step One: Distribute
	Step Two: Combine Like Terms
	Step Three: Move the x's to one side & number's to another
	Step Four: Divide both sides by the number in front of the x

Let's Try:

$6(2x-1) = -36 + 6$