Teaching Practicum at the Bancroft School

An Interdisciplinary Qualifying Project
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Submitted by: Ethan Moon

Submitted to: Prof. John Goulet

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emmoon@wpi.edu

Abstract

This paper discusses my experience as a Teacher's aide and enrichment educator at Bancroft school. Over the past year I have taught every day to fulfill the requirements of my Interactive Qualifying Project at Worcester Polytechnic Institute. This paper also discusses the background of the Massachusetts education system, as well as different teaching methods available to schools that are free from regulatory bodies, highlighting some of the proses and cons of the private education system versus the public one.

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Chapter 1

Introduction

For my Interactive Qualifying Project at Worcester Polytechnic Institute, I worked as a teacher's aide as well as an enrichment education instructor at the Bancroft school. Bancroft is a private preparatory school located in Worcester, Massachusetts whose doors opened in 1900. The school serves kindergarten to 12th grade with a population of approximately 530 students. My area of involvement at the school was primarily with grades two through four. While working there I worked with students on an individual basis providing enrichment material to suite their specific needs. Working with all types of students as helped me to better understand some of the struggles that come with mathematics education as well as the joy that can come from it. No matter how hard it is pinpointing a student's problems there is always a way to help them you just haven't found the best one yet.

Chapter 2 Background

Massachusetts Education System

To understand the situations presented in any school institution, it is important to understand the current state of the public school system within that district. It is important to note that private schools are not held to the same statewide standards as the rest of the district; however their enrollment rates are

directly related to how parents judge them based on the public schools in the district.

When talking about the public education system in Massachusetts it is impossible not to mention the Mass Education Reform Act of 1993. The reform includes plans to create and operate new public schools called charter schools, as well as implement a set of statewide curriculum frameworks, then have testing to determine whether students are meeting these predetermined goals [4]. When these reforms were proposed they were revolutionary, whereas now their success has made them the norm. The reforms centered the education system making it one that is goal-oriented, which helped to promote better teachers and better teaching techniques. A new standardized test coined the MCAS, or "Massachusetts Comprehensive Assessment System," will be required to graduate from high school. Using the MCAS, teachers gain valuable insight into their performance and the topics that are challenging their students most. While this information is useful in a multitude of ways, it forces the exams to be very high stakes, which can be nerve racking for some students. Prior to the enactment of the reforms, teachers had no way to judge themselves or how they were doing compared to other teachers in their districts, whereas the new paradigm of standardized feedback has helped move the system forward exponentially through critical review procedures. The Massachusetts education reform act had such great successes that the educators responsible were selected for pivotal roles in the development of the Common Core standards that the nation is adopting currently, and have sat on several counsels responsible for nationwide education reform as well as making a great deal of

contributions to organizations like the National Education Association (NEA) as well as the Trends in International Mathematics and Science study (TIMMS). TIMMS has been assessing students globally for over 20 years and re-tests grades four and eight every four years. [12] While the state's contributions to education as a whole are exemplary, Massachusetts as also garnered several accolades for the performance of its students on assessments made by TIMMS. Massachusetts students scored, on average, sixty one points higher on their 8th grade math assessments than the TIMMS average. [14] This means that only three nations outperformed Massachusetts internationally, namely Singapore, South Korea and China, with China topping Massachusetts in the regions of Hong Kong and Taipei. These results are not only profound internationally, but within the United States, Massachusetts is ranked number one in student performance. [14] These statistics were the driving force behind why the Massachusetts education system was chosen to be the foundation for the Common Core.

The Common Core

The Common Core state standards are a comprehensive set of guidelines that teachers across the country will now start to educate their pupils around. All but six states have fully adopted the common core in place of their own state guidelines. [15] The guidelines have been developed using the standards of several states as a foundation, then building upon them through educator and community input. The Common Core focuses on a deeper understanding of the material being taught, versus just getting through all of the material. This sentiment was put best by a summary of the Common Core shifts saying: "Rather than racing to cover topics in

today's mile wide, inch deep curriculum, teachers use the power of the eraser, and significantly narrow and deepen the way time and energy is spent in the classroom". [1] This sentiment is exactly what most domestic and international studies have found to be an effective teaching method. When creating the Common Core several other countries were looked at for inspiration particularly countries like China and Singapore.

The Singapore Method

The Singapore method utilizes the setup of the classroom; by guiding teachers through certain board setups that allow for better focus throughout each unit in a chapter. The key to the method is building on each proceeding unit and always having questions in each section that relate back to the earlier ones. Kristin my mentor at Bancroft notes this is akin to a staircase of education that the students are always climbing up. One major part of the Singapore method that emphasizes the educational staircase is calendar math. Calendar math is a small portion of each day set aside for students to do a different math tasks focused on money, using a clock, and other realistically motivated activities. This time period begins the same way for all grade levels: a calendar depicting patterns that become more complicated as well as harder to spot as the year progresses. These patterns can range from simple shapes during second grade, to complicated patterns of rotating three dimensional objects in the fourth grade classrooms. Another aspect of calendar math that builds upon itself is the "daily depositor". This is an ingenious way for students to apply the mathematics they learn in class to a situation they encounter every day. The "daily depositor" takes the date for the current day then

multiplies it by a certain amount, and ultimately adds the final amount to an ever-growing bank account. The challenges presented by the "daily depositor" to students progresses along with the units they are covering for instance in September the class only adds one dollar for each day of school, and thus the depositor goes up to 31 dollars. However by May we are multiplying each date by one thousand and adding it, so the depositor gets to 31,000 dollars. This system is also coupled with predictions on how much money the account will have at the end of every month allowing the children to create mathematically based predictions, rather than simple guesses. The growth of the students is then tracked by the difficulty surrounding the calendar math, serving as a review for every aspect of the math program as it gets taught to the students.

Another key aspect of the Singapore method is the bar model. The bar model is a way to represent word problems as a visual problem. Teaching the children how to create the bar model is about teaching them to pull key information out of a problem then represent that information in a graphical way compared to the other information extracted from the problem. This works especially well for students who find themselves learning better visually, the constant use of manipulatives also caters to the abilities of visual learners.

Common Core versus the Singapore Method

The frameworks of the Singapore method mirror that of the Common Core, yet the Singapore method employs manipulatives more frequently and emphasizes the bar model in mathematics education. These techniques utilize a lot more of a visual approach, which gives students a strong image of what they are actually doing

instead of working with nameless symbols. Which was an important factor for Bancroft because they want to help the population of their student body who have language based learning disabilities without requiring excessive aid outside the classroom.

The Singapore method and the Common Core both heavily focus on building up students' knowledge through grade levels rather than the "learn it and forget it" mentality that permeated its way through the education system prior to the creation of a standardized curriculum. Having each section be constantly interconnected allows for very complex work in a much shorter time period, giving students the chance to develop high level techniques and apply concepts in ways they wouldn't have realized had they been rushed through the lesson. This is one of the primary traits that the Singapore method shares with the Common Core, and one of the reasons it should prove to be effective. In order to make the transition from the Common Core to the Singapore method as smooth as possible, Bancroft held information sessions for the teachers on the bar model, calendar math and the other visually focused learning techniques utilized in the method. Overall, Bancroft's transition to the Singapore Method went smoothly and it mirrors the transition that a school will need to undergo to adopt the Common Core standards.

When comparing the Singapore method to the common core, it is very hard to distinguish distinct differences because the overarching elements of the Singapore method were used to create the common core. For instance building the educational staircase, and avoiding rote memorization techniques through numerous applied examples instead. The only noticeable differentiating factors are

slight and are mostly concerned with classroom participation and the pace at which work is completed as well as the focus on visual learning techniques. The Singapore method takes a little more time focusing on each individual learning style to produce a solid foundation for the student's future academic pursuits. This touch of personalization for each student, the methods visually based lessons, and that it constantly relates the lessons taught to real world examples are the reasons Bancroft opted to use the Singapore method instead of the Common Core.

Chapter 3

Involvement at Bancroft

Classroom

Currently working at Bancroft has shown me many different sides to the elementary education. Having worked in the second, third and fourth grades I can say that each day with the kids is completely different. Seeing them mature and grow at such an amazing pace makes teaching a truly rewarding experience. The classrooms being inviting and accessible allows the students to be very comfortable in their working environment.

The typical schedule for the second grade classroom begins with a morning meeting held in the corner of the classroom. Prior to this meeting, the kids all put their stuff away in the cubbies outside the classroom and have 15 minutes of free time. This free time allows Kristen and me to pair up and discuss the activities for the day, along with student separation amongst us. One might assume this routine is difficult with twelve 8-year-olds, but in reality the kids learn the routine to a tee and follow it with precision. As soon as the "Hukunamata" CD starts to play, all of kids

are seated awaiting the beginning of the meeting. Calendar math follows the meeting then the students begin their day with the math block, which is a 45-50 minute section of the day entirely devoted to mathematics. During our Math block, subjects ranging from multiplication tables to fractions are taught. Several mathematics based life skills are taught like money, these are often times the most challenging units.

The fourth grade classroom almost identically mirrors the structure of the second grade classroom, having even the positioning of the boards, desks and calendar math area the same. Slight differences include telling stories about the weekend at morning meetings on Mondays, as well as simple warm up math problems for students before the end of their 15-minute free time. These differences account for a significant change in the dynamic of the classroom, giving the children more freedom and responsibility. This is essential for the fourth grade classroom; allowing the students to be developmentally ready to start regulating their own activities.

Students

Throughout my time working with the second and fourth grades, I have met some amazing students who are truly interested in learning at such a young age. These students are a joy to work with; absorbing the new material very quickly, and progressing at an above average pace. While I write this report, one student remains at the forefront of my mind, Ralph. (All names have been changed for confidentiality purposes.)

Ralph has stuck out to me since the first time I walked into the second grade classroom. He is a bright student, who is willing to work hard to achieve his success. However, what truly makes him an exceptional student is his knowledge on when to ask and accept help from other students and teachers around him. To help foster Ralph's successes at Bancroft, I have been working with him on several different types of enrichment materials. These materials are packets, workbooks or small games from other grade levels that we go through together. My belief is that Ralph learns best from the small games due to their interactive nature. I have worked to design these games using the Visual, Audio, and Kinetic (VAK) teaching method. Several of my students suffer from learning disabilities and utilizing teaching techniques that cater to those needs has shown to be effective for all students. For example, we played a little game based around counting money, which may seem like a small part of the curriculum but at this age level, is vital to introduce the student to it.

Ralph was struggling with the topic of money for several lessons and consequently falling behind, until I stepped in to give him one-on-one lessons in the subject matter. We went over basic rules of money describing each coin, then playing the game which was based around flipping tiles to find the corresponding amount of money on the table. This helped him get over the initial hump that the subject of money often presents to students. After a couple lessons, he quickly re-adjusted and was back to being a top performer in the classroom.

While I had success alleviating the problems Ralph had faced, not all students are as easy to work with or have such easily resolved issues. One of the students I

worked with almost every day named Steve was one such case, even as I write this report. His issues in the classroom have yet to be resolved and at this pace they may not be for a long time to come. Steve was the first student I have encountered with language based learning disabilities as well as severe attention deficit hyperactivity disorder (ADHD). These problems made it very difficult working with him at first because often times his attention wonders to the point that it is impossible to make him focus. To mitigate several of these attention problems I moved the time I spent with Steve to a secluded room away from any potential distractions and often times removed distracting items from view in the room. These small things helped to focus Steve on the tasks at hand. I also employed several learning methods like the VAK style to ensure Steve kept focused and he was as concentrated on the material as he possibly could be.

At first Steve had difficulty with the introduction of addition and subtraction. Which hinted that all of Steve's problems were not purely attention based; he lacks concepts that should not be new to students in the second grade. It is at this stage where they are expected to truly understand and be able to apply their own developed number sense to the problems at hand. Steve was shown to lack even basic understanding of numbers and it has been the focus of my work with him to create and foster the growth of that number sense. Kristen and I decided that is the root of many of Steve's mathematical issues. Simply put he does not understand what numbers are or how to recognize or work with them.

Working with Steve for almost a year now, it pains me to say that we have achieved minimal progress at best cultivating his sense of numbers. Several

strategies for helping him have failed miserably, his progress has been so minimal we moved him back to working out of the first grade workbooks, because at this point he would have no hope of working at the same level as the other second grade students. This has been a cause of constant concern for me throughout my time working with him. It has gotten to point where my mentor and I have had several discussions about what may be the appropriate next step in Steve's education. The options before us are few and none are ideal solutions.

The first possible option for Steve is that he continues his progression into third grade but instead of attending the math classes with the other third grade students he attends the second grade math time again. I have opposed this decision because personally I feel he is not ready to move up in any other subject area and having redo the math program he has already failed and expecting different results is a waste of his educational time.

The second option for Steve is to not move up to third grade and start attending the first grade math block, to reinforce his number sense. I believe this strategy to be the second best option because he truly needs to understand the numbers he is working with and needs constant educational time on that rather than how to manipulate them.

The last option is in my opinion the best because it will simply be the most effective for helping Steve to learn in all aspects of his education. This solution is simply to have him attend or be tutored by someone specializing in his learning disabilities. If he received attention from a specialist he would not only learn the

material he is currently struggling with but learn techniques to help live with his disabilities in the future.

After reviewing these options and discussing it several times no decision has yet been made as to which route we will pursue to further Steve's education.

Accessibility to quality education

Students like Steve and his disabilities lead into a very active discuss currently taking place throughout the country and that is whether or not to send your children to a public school or a private institution for their education. This is a very difficult question to answer and has been spoken about at length by experts who pit themselves on both sides of the argument. However, the argument shouldn't be whether public schools are better than private schools, but which one will suit your child's needs more effectively. In Steve's case the fact that by law "public schools must educate all children and provide the necessary programs to meet their special needs" [14] would have significantly changed his experience in the classroom. He would have been diagnosed, as soon as possible and would have been placed with a specialist who is dedicated to helping him learn given his disabilities. While at Bancroft he did not receive nearly that level of help simply because they do not have those members on staff, and they couldn't afford to give him that specialized attention throughout the whole day. While in Steve's case a public education may have been more beneficial, other students like Ralph a member of my fourth grade class have found and will continue to find great success in the private education system. Ralph is a gifted student, which means that he is often times leaps and bounds ahead of the other students. In a publically run institution this often

times lead to students dejecting from the classroom, and coming to the conclusion school is useless because they spend a multitude of their time twiddling their thumbs waiting for other students to catch up. This does not happen within the classroom at Bancroft. Ralph is constantly working being driven further by more difficult problems. They can accomplish this because they are a private institution who employs several teachers and tutors on the side, like myself to facilitate this constant progression. The slight differences between public education and private education can have a profound effect on the success of a student. That is why neither is inherently better, but must be inspected on a case by case basis for which only the parents and students can judge.

Conclusions

After working at Bancroft for a year now and seeing several sides of an elementary classroom, I can say that this has been one of the most rewarding experiences in my life. Taking an active role in the education and enlightenment of others has always been described to me as rewarding but to truly understand that sentiment you really need to see the reaction on a student's face as they reach that break through moment. This experience has not all been good however the realizations that students like Steve make you go through are tough. You are plagued by a feeling can only be described as one of complete failure and frustration. Yet students like him make it apparent that constant evaluations must be made of the students and teachers to ensure that progress is being made by the students. It is for this reason that while a goal oriented education system may seem

detrimental to the educational process it is actually the only way to quantify student success, and stop students like Steve from being pushed through the system.

However standards like the Common Core focus too much on these assessments wasting a large amount of time preparing for them, which is why I believe Bancroft made the correct choice implementing the Singapore method. This choice as previously noted has a great connection to teaching students whose audio learning abilities may be lacking, but who have strong visual learning capabilities. Allowing Bancroft to help students more effectively than it ever could have before simply because they do not have the abilities a public school does to accommodate those students with learning disabilities.

Overall I would say that Teaching at the Bancroft school has been an irreplaceable experience. It has taught me a multitude about myself as well as my future goals. Through this practicum I have gained the insight that teaching is a truly amazing profession and one that I am highly considering, knowing I am fully prepared to after my experience this past year.

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