

Case Study of an Excellent Math Teacher

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### Entry Vignette

Even before the students arrive, Mrs. Jennifer Nelson is the image of prepared. She is always extra early, which is quite a task considering she has to prep her own 3 different children for school each day. She comes so early so that she can adequately prepare for her several different classes, which include College Prep Math, Precalculus, and Financial Literacy. Jennifer is self-diagnosed “OCD”, and she admits that in order to keep her sanity, she has spent countless hours prepping her curriculum, classroom and materials so that during the school day, everything will run as orderly as is possible in a high school setting.

*Figure 1.* Mrs. Nelson’s Classroom Layout



*Here Mrs. Nelson can be seen engaging her students on the projector (Source: Joseph Wright)*

This preparation is obvious when the students enter the room: they know that their math teacher has high expectations and a strict protocol that they are expected to follow. They almost always have an entry assignment awaiting them at the beginning of class, and her classroom

management ensures that they get started on it promptly and quickly. She organizes her chairs in a great way, in C shapes that allow the students to face the South and East walls easily, which is where her whiteboard and projector slides are shown. She also keeps some of the often used formulas on a flipchart readily available for reference, which is helpful to the students, such as the quadratic formula, etc. The students are very well-behaved, which is in part due to their maturity (she teaches 10-12<sup>th</sup> graders), but also due to the different classroom procedures that she employs quite well.

After completed their entry activity, they all dutifully pull out their homework, and correct it, with the answers and work shown on a projector. This also allows Mrs. Nelson to grade past assignments or take roll, etc., for about 10 minutes, thus getting a bit more time for housekeeping as a busy teacher. The students meanwhile, as they correct their homework, are allowed to quietly discuss problems with each other, or to ask Mrs. Nelson for help as needed. Her students use the honor system, and they get two different grades: one for completion / attempting to do the homework, and another which reflects the actual score they got on the assignment, which they always can make up if they do poorly.

Even when students do poorly, they know that Mrs. Nelson is happy and willing to walk them through their math problem and figure out what they might have done wrong, and this I noticed helps alleviate potential anxiety for many students. A male student of hers stated said that, regarding homework correction: "I never get stressed about homework, because I know that if I don't get it, I'll still get Mrs. Nelson's help the next day. I just try my best!" This sentiment was echoed multiple times by several other students during my observations in her class, which confirmed to me that the feeling is not unique.

## **Purpose and Methods**

The purpose of this study was to allow me, a fellow teacher at the same school that “Mrs. Nelson” teaches at (names other than my own herein are changed to protect identity), to personally better understand and analyze the philosophical underpinnings that guide a long time successful teacher. Our school is relatively new, and I have been there just 2 years, while Mrs. Nelson has been there since its inception 8 years ago. I went to her class over the course of 2 weeks every other day, and informally interviewed her, several of her students, other teachers, and also spent several hours simply observing her at her craft in the classroom. While thus engaged, I’ve reflected back on my own understanding of our Educational Philosophy coursework and material, and feel that I now have a much better understanding of at least how this particular successful teacher manages to accomplish all that she does.

## **Narrative Description**

As the class progresses, Mrs. Nelson is right on schedule, yet instead of feeling forced, it feels natural and fine. She reviews the math problems with the students on an individual basis, and if she notices a pattern, she’ll often do it with the entire class as needed. She has developed an excellent rapport with the students, and they trust her as a result. That trust has led to respect, and her classroom emanates this. The classroom (as I’ve mentioned) is very well organized, and as a result of observing her I have found many things to improve in my own. She not only keeps it organized, but it is also very clean and neat. For example, she has a penchant for cutesy owls, which can be found all around her classroom. I thought this was particularly appropriate, as the owl is an almost timeless symbol of wisdom, used since classical times.

Figure 2. Mrs. Nelson's Organized Curriculum



*Here is just one shelf of Mrs. Nelson's organized curriculum, which she has made herself from scratch (Source: Joseph Wright)*

Of course, it comes as no surprise that she knows her curriculum extremely well, and she also knows her limits. Since she tends to stress when things get a bit disorganized, she has invested a lot of energy into making sure things are as clear and organized as possible, including planning for the less frequent occurrences. Sometimes for example, students arrive to class late. While she is nice about it, she also is firm, and quickly reminds them to fill out a late pass (which she later uses to update the class roll) and then gets them back on task as quickly as possible. This is in part due to the fact that our school doesn't have bells, but she has nonetheless established a routine with the students so that they know when there are 5 minutes before the end of class (a distinctive tone rings on her phone), as well as at the end of class (now a different tone rings).

To further illustrate the organized nature of her classroom, let me share an example: if a student needs to use a calculator, they have a known procedure: they take a colored “Exchange Card”, and print their name on it, and replace that in her Calculator Cubby Wall Board for the calculator they are using, found at the front of the class. It seems that she has anticipated nearly all potential problems; she even has a space on the card where students can mention issues the calculator has, so that she can figure out when it may have malfunctioned or become damaged. As I’ve observed Mrs. Nelson, it seems clear that much of the success found in her class is due to the strict organization that she employs with her class and students.

### **Development of Philosophical Profile**

Mrs. Nelson has a somewhat mixed ideology. Her overriding sense of organization is an important component to her philosophy of education, but it certainly isn’t the only aspect. However, the idea that she is the expert or example in the classroom, and helping guide her students to be their best or better selves is one that she wholeheartedly follows. It also coincides well with some of the more conservative philosophies, such as Idealism, for instance, whose proponents say that “Teachers must assist students in developing to their potential and achieving their fullest...intellectual growth” (Gutek, 23). Mrs. Nelson herself stated that “Students may enter my classroom unprepared for college, but my goal is that they leave better than they came.” Idealists promote the belief that teachers must “be a specialist in the knowledge of pupils...[and] an ethical model that commands their respect...[and awakens] their desire to learn” (Gutek, 24). As I have observed Mrs. Nelson in her classroom, she seems to meet all of those qualifications.

Idealists also “subscribe to the doctrine of preparation” (Gutek, 25), and I have not met another teacher as prepared as Mrs. Nelson is every day. Another teacher, who also works in the



Math department, stated “Mrs. Nelson is better prepared than just about any teacher at our school. She prepares herself, and she prepares her students for life after high school.” I couldn’t have stated it better myself; the students I know who have Jennifer are always positive about her class, and they certainly seem to understand that what they learn there is a foundation for their future. She herself told me about her efforts to maintain her expertise, so that she can be the best possible example and resource to her students.

Another philosophy that I’ve seen Mrs. Nelson exhibit is that of Realism. Realists focus heavily on the dual nature of teaching, which they say requires expertise in “content (subject-matter knowledge) and method (the process of instruction)” (Gutek, 43). She herself not only has exemplified her expert knowledge of math, but she is always taking classes during the summer to improve her teaching and methods, as part of maintaining her teaching license, thus always looking for further ways to improve. Realists believe that teachers must “know the subject thoroughly and...how to teach it effectively” (Gutek, 43) She certainly can do both based on my experience. Afterwards, she sincerely asked me about constructive feedback that I might offer to improve her teaching, thus again proving her genuine desire to do the best job she can in effectively teaching her students.

Some philosophies that I did not see much evidence for in her teaching or classroom were those of the more left-leaning philosophies. For instance, Marxist educators would ask students to “examine the nature of class”, or the methods that the “dominant class uses schools as agencies of social control” (Gutek, 227). To Mrs. Nelson, “Math is math”, and regardless of one’s political leaning, the skills and abilities you learn in her class will help you be a success, regardless of you or your social standing. She doesn’t use her position as teacher to try and use her classroom as an “instrument of social, political and educational change” (Gutek, 299), like

Progressives and Critical Theorists do. She has political opinions, of course: she used to have a Merit Badge Club after school for instance, and has been a big sponsor of Boy Scouts, but the recent changes with the Boy Scouts of America in allowing young women to participate in all levels doesn't sit right with her. That is reminiscent of a Conservative philosophy, yet she keeps those opinions to herself (rather than trying to indoctrinate her students to her own viewpoint), which I find commendable.

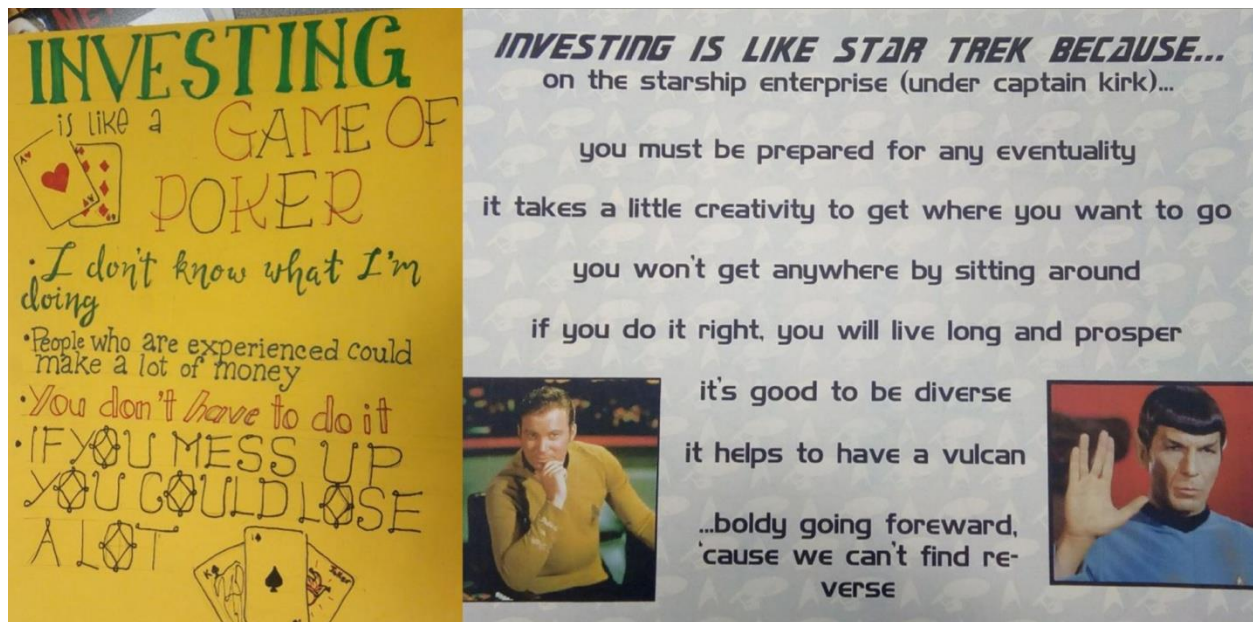
Another key part of her educational philosophy is Essentialism. She told me herself, that schools ought to exist "to prepare these young adults to grow up." This echoes the Essentialist perspective that schools ought to "prepare boys and girls for adult responsibility through systematic training in such subjects as reading, writing, arithmetic" (Gutek, 265). Interestingly, I've also seen some other smatterings of different philosophies mixed into her teaching as well. For instance, while she has specific and high expectations, she is not afraid to at times have a "flexible, multifunctional approach to schooling, curriculum and instruction" (Gutek, 189), just like followers of liberalism espouse. She has also added and changed her curriculum for her Financial Literacy class as needed (another liberal ideal), such as no longer teaching the skill of balancing a checkbook (which technology advents have deemed antiquated) to now explaining how direct deposits work, and the pros and cons of investing in the stock market. Thus, you can see that her teaching doesn't seem to fit neatly into any of these philosophies by themselves.

### **Descriptive Detail**

For instance, while she is definitely more Conservative and an Essentialist in her teaching methods, I have also seen intriguing tidbits of other philosophies in her teaching. Postmodernists and Liberals, for example, believe that curriculum should not "be organized into discrete subject

matter disciplines”, but instead it ought to seek out ways to examine “issues of personal and group identity, and social, political, and economic problems” (Guttek, 136). Despite that, I saw a few examples where Mrs. Nelson left the otherwise rigid and strict structure of her typically Perennialist & Essentialist class to allow such examinations, especially in Financial Literacy, which is arguably more connected to the here and now than perhaps her other subjects might be.

Figure 3. “Investing is like...” Posters



As shown here, this assignment reflects the more liberal idea of allowing student voice and choice (Source: Joseph Wright)

### Assertions

Mrs. Nelson is a unique and talented teacher, no question there. She has put much time, effort, and heart into her teaching and curriculum. While in many ways she is more of an Essentialist (with her focus on foundational skills, and abstaining from indoctrination, etc.) than anything else, she has taken valuable bits and pieces of many other philosophies, and adapted them to her classroom to create a productive, safe, and efficient classroom environment.

### **Closing Vignette**

As class winds down for my final observation day, Mrs. Nelson is busy going around and checking to see that students are well on their way to completing their homework exercises for the following period. As students finish, a softer, gentler side that has emerged a few times during class is again revealed, with students sharing personal information, such as weekend plans, etc. Mrs. Nelson herself shares some ideas and personal experiences as well, and again, the trust and rapport between her and her students is quite evident as they chat. The 5 minute warning tone chimes, and though Mrs. Nelson becomes a bit more curt in her engagements with the students (as she wants to check in with each one before the end of the period), the genuineness of her affection and thought for her students is clearly still evident.

So yes, perhaps she can be a bit of a disciplinarian at times (often most harshly on herself), but that strictness and organization have created a classroom atmosphere where her students are learning and engaged. Time is efficiently spent, and there is also just enough room for the building of personal connections and pursuits. Her students are improving their knowledge and skills, and overall seem to be enjoying and benefiting from their time spent in class. As far as I can see, they do seem to “leave better than they came”, & that is arguably a success no matter what your personal educational philosophy may be.

### References

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““Investing is like...” Posters” [Personal photograph taken in Utah]. (2017, November 8).

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“Mrs. Nelson’s Organized Curriculum” [Personal photograph taken in Utah]. (2017, November 12).