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Reflections on Teaching Mathematics in Prisons

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Synopsis
I started teaching math in prison ten years ago during my doctoral studies. Since then, I have taught for three different college-in-prison programs across the country. The goal of this piece is to communicate my experiences with the hopes of encouraging more mathematicians to get involved.

An unexpected email
Towards the end of my PhD program, my department received a mass email seeking math teachers for a women’s prison. After some deliberation, I decided to go for it and offered my help. I was quickly snatched up. Apparently, mathematics teachers are in short supply.

Soon after, I am handing over my wallet, phone, and keys to an officer. I take off my belt and shoes and walk through a metal detector. My hand gets an invisible stamp that will be checked under a UV light when I leave. I am then escorted through two barbed wire gates, an electromagnetically sealed door, and a panic-room-esque metal sliding door.

My classroom looks like a rundown daycare. There are legos, foam padding on the floor, and a giant Disney character mural. It is the children’s visiting room. I stand there, nervously, as the women start to file in. Once everyone is seated, I say, “How about we start with an icebreaker?” This suggestion falls flat. A student explains to me, “We already know each other.”

Ten years and counting
That failed icebreaker was ten years ago. Since then, my work has spanned five prisons and three college-in-prison programs. The first program was
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Freedom Education Project Puget Sound (FEPPS) at the Washington Corrections Center for Women. They offer associate and bachelor’s degrees behind bars. I helped them with teaching and designing curriculum. During my postdoc, I taught college algebra and math in society for the Friday Center at two North Carolina prisons. This program offers general college credit but no culminating degree.

Currently, I teach for the Bard Prison Initiative (BPI) featured in the 2019 documentary *College Behind Bars* by Ken Burns. Their groundbreaking program offers associate and bachelor’s degrees to students who are incarcerated. Mathematics is the only STEM major offered. As a result, STEM-leaning students at BPI funnel into math. This gives critical mass and makes it so advanced topics are taught such as calculus, real analysis, algebra, cryptography, and partial differential equations. So far, I ran a seminar on mathematical typesetting and programming as well as a probability course. In 2022, I mentored two yearlong senior projects in problems related to my research. I am mentoring a new pair of students this year.

A different environment

Some of my most exhilarating teaching experiences have been in prison. In conventional college math classes, I find that the most vocal students are those with the firmest grasp on the material. The opposite has proven true in my prison classrooms. Struggling students speak up the most. Maybe this is because so much is at stake. Education is not some obligation; it is an impetus of change. In any case, students in prison consistently let me know when I am not making sense. This regulates my pace and content and informs my teaching in all settings.

Time constraints in prison education are unusual. Classes tend to run on a compressed schedule, often meeting just once per week for two-to-three-hour periods. This makes it challenging to cover all the material. There is no email correspondence or separate office hours. Lecturing, group work, answering homework questions, and addressing individual student needs all must happen in the allotted slot. I always expect a delay of 10–30 minutes before starting my class. Delays happen for a variety of reasons: no escort is available, the morning headcount comes up short, there is a fog warning, or students are detained.

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1 See [https://www.pbs.org/show/college-behind-bars/](https://www.pbs.org/show/college-behind-bars/).
Prison is a challenging learning environment. Movement is restricted, so it is often impossible to get any help outside the classroom. Studying takes place in noisy common spaces. Communication to the outside world is tightly controlled. Library services are limited. There is no internet, inmates are allotted restricted computer time, and they have access to only basic software. For example, L\text{T}eX editors are not allowed. Students write their fifty-plus page senior projects in \texttt{txt} files which they compile in the command line. Any outside material that I wish to provide must first be approved by a prison administrator.

There are also unexpected challenges that come with teaching in this context. Once, I was working with a student on adding fractions, and she told me she understood. Enthused, I explained a deeper reason why things worked the way they did. She became upset, “Why do you have to go and confuse me when I said I got it?!” She stopped coming to class after this. Another student had a history of domestic violence that I was unaware of. When I assertively told her that she needed to move seats during a quiz, it triggered her. For the rest of the semester, she would tear up if I made direct eye contact.

These experiences are still painful for me to think about. But, through difficulties such as these, my teaching transformed for the better. I am more aware today that my students often carry heavy burdens. I also have come to realize that sometimes during teaching, a juncture can be reached where the student will be sidelined if the instructor indulges in what they hope to see. Today, in all my classrooms, I try to catch myself at this juncture, steering instead toward what the student sees.

\textit{Other societal concerns and challenges}

When looking at the big picture, there is the complex role that incarceration plays in society. There are deep-seated problems involving race, culture, and socioeconomic factors. These factors show up in explicit hierarchies and implicit power differentials whenever someone from the outside is visiting a prison. I wish I could say that I have always managed to deftly navigate these challenges, but I cannot. I have to keep in my mind that I am a visitor who is a small part of a huge machine. I limit sharing any personal details (as all of my prison volunteer training has drilled into me). But I am always doing my best as a teacher, as I strive to understand and support my students to the best of my abilities.
Education makes a difference

Prison education is a bright spot in a dark place. It creates a village of support and accountability inside the broader prison structure. This cultivates unexpected optimism. I was recently on the committee of four senior projects for the Bard Prison Initiative. The topics involved the mathematics of sound, signal processing, blockchain, and COVID-19. At the end of each presentation, I asked what they hoped to accomplish next. Their answers were laudable: cure hearing loss, solve the Gibbs phenomenon, dispel cryptocurrency fear, and educate the Black community on public health. These students have been in prison for fifteen plus years. They are older than me yet have such wide-eyed ambition. Also, their answers contrast with the more immediate goals that I tend to hear from conventional graduating students about their first job or potential graduate programs. Many students who are incarcerated complete their degrees with years remaining in their sentence. Perhaps this causes some to anticipate further and dream bigger.

Education gives incarcerated people purpose while inside and skills for the outside. When released, most students return to their communities—and do not return to prison. Expanding their perception of mathematics and education may have a resonating effect, positively impacting those that they return home to. For example, I met the seventeen-year-old niece of one of my students at the BPI graduation. I asked her if she planned on college. She said that she was unsure. My student proceeded to tell her how college was important because it pushed him to explore new thoughts.

Graduations

In June, I attended commencement for the graduating BPI class for 2023. Forty-five students walked as their peers and family cheered. The keynote speaker was Desmond Meade, who had personally struggled with drugs and the law for years, only to rise to be a prominent voting rights advocate, currently with the Florida Rights Restoration Coalition. His speech, which was punctuated with multiple standing ovations, began with him in tears, claiming that he saw himself in the graduates. The student speeches were equally moving. One proclaimed, “When I got here, I didn’t know how to read.

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2 Prison education reduces the likelihood of repeat offenses. The recidivism rate after a nine-year period in the United States has been estimated to be above 80%, whereas the recidivism rate for Bard Prison Initiative students stands at 4%.
Now I’m graduating.” Another choked up as he said, “To my son, I love you,” and was answered by a resolute, “I love you too!” from a boy in the crowd.

It surprised me how much math came up. Each student speaker mentioned it like a badge of honor. The student who called out to his son also thanked a professor for showing him that “math is not about computation, or problem solving. It is about conceptual understanding. I like to think of it as the art of connection.” These transformed perspectives keep me coming back.

I will end with a story told at the 2015 FEPPS graduation ceremony. Women in the program are given blue green (Seahawks’ colors) tote bags, which they carry proudly. During the passing time before my final exam, a fight broke out somewhere else in the prison. When this happens, everything locks down. No one is allowed to move. Through the chaos, a group of students from my class was spotted running, blue-green bags swinging, racing the lockdown to take a math test. These students want so badly to learn and to change the course of their lives.

*Getting involved*

I share my experience in hopes of sparking more involvement in prison education. I have worked in four different regions and always found programs in need of mathematics instructors. Seeing the impact of these programs motivates me to stay involved. If interested, conduct an internet search. There will likely be an opportunity near you.