

# *Katherine Paullin*

## Teaching Statement

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My teaching experiences are extremely varied, and showcase my many different teaching practices. Over the years, I have had the opportunity to teach at institutions of higher learning on many different levels. Public, private, small, large, 2-year, 4-year, secular, and religiously affiliated: I believe that all of these experiences have helped to shape me into the educator I am today. Additionally, my background in education has provided me with instruction and opportunities to teach at the high school level.

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## EXPERIENCES

My most recent teaching experience is at the University of Kentucky. This public university offers large lecture sections for most of their lower division courses. In my first semester as a Visiting Lecturer, I've taught two courses in Contemporary Mathematics each containing 70 students, and Elementary Calculus, a large lecture of 245 students. Due to such large classes, I've needed to find a more efficient way to handle grading. I use the MAA's Webwork to assign homework in each of these classes, but have also needed to find new ways to effectively test students' knowledge. With the large coordinated courses, exams are written by the group of instructors and in the smaller courses I've been able to write my own. Either way, writing some multiple choice questions has been a necessity. I participated in a "Writing Good Multiple Choice Questions" workshop, put on by the University's Center for the Enhancement of Learning and Teaching, to help with this task. Both of these courses have involved the use of the Blackboard learning management system for grades and course announcements. To encourage class participation in such a large classroom, I have incorporated the use of Turning Technologies clickers to assess student learning at several key points within a day's lecture. Teaching these larger classes has provided me the experience of working alongside and supervising graduate student teaching assistants and undergraduate assistants, both of which have been very helpful to student learning and classroom management. A unique aspect of this teaching assignment has been the lack of a traditional textbook. Although both courses have provided some general lecture notes and supplemental texts, all of these materials must be provided through a course website. In Contemporary Mathematics specifically, the lack of formal textbook has provided for a little more freedom in my daily instruction.

Before starting my first semester here at UK, I had the opportunity to be an Instructor for the FastTrack program, which brings incoming freshmen to campus a week early to get a jump start on their mathematics and science courses. In this course, my primary role was to help students who were intending to enroll in College Algebra or Pre-Calculus to brush-up on their algebra skills. This program also allows students to get oriented to campus and the various student support services offered to them.

Most of my teaching experience has been at Saint Louis University, where I was a Graduate Teaching Assistant. This private Jesuit institution has a math requirement for all students, with the result that most of the lower level math courses have a class size of 30-35 students. In teaching courses from College Algebra to PreCalculus, I've had the joy of teaching a very diverse group

of students the fundamentals of mathematics. These courses have all used either Pearson's My-MathLab or the MAA's Webwork for some homework submission, although due to smaller class sizes, I also collected handwritten worksheets so that I could better monitor student errors and progress. I also created daily ungraded worksheets that I used as guided notes for my students during the lecture period and that contained exercises they could complete during class so that I could assess student learning before they even left the classroom. After class, I would upload these daily note guides to the Blackboard learning management system, which allowed for a digital representation of my class. Also while teaching at SLU, I had the opportunity to complete the Certificate in University Teaching Skills, which I believe bettered my teaching knowledge and practices. This certificate included attending ten effective teaching seminars, participating in two online mini-courses in teaching philosophy and learning technologies, and completing a portfolio which included a videotaped lesson of my teaching and several reflections.

One of the most rewarding teaching experiences I have had is working with the Billiken Bridge to Success program at Saint Louis University. With a program size of 20-25 and two instructors, I teach two classes of 5-7 students. This multidisciplinary program accepts students who are incoming freshmen that show both a promise and a cause for concern. I've been a Supplemental Instructor, Instructor, and Mathematics Team Leader for this program, and have enjoyed all aspects of this program. My goal as instructor is to get each student ready for their right-fit math course in the fall semester. The curriculum for this three week program was completely written by myself based on a placement exam taken by the students. This way, I could individualize instruction to develop the specific skills each student needs to obtain. Billiken Bridge is a program which encourages connections with students that last through the four years the student is at SLU. This program has been a highlight to my time at Saint Louis University because it is inspiring to watch students, who are used to struggling, understand and succeed.

I worked several summers as an adjunct at Southwestern Illinois College, a two-year college in Belleville, IL. I've taught a wide array of courses there and enjoyed the diverse student population. Many non-traditional students have challenged me to find ways that they will use the mathematics being taught in their own jobs and lives. Due to the courses assigned, this teaching assignment has also led me to teach with many more forms of technology. In an Introduction to Statistics course, I helped students to learn the basics of Minitab. Their course in Liberal Arts Mathematics used a textbook that involved popular movies and TV show clips where math is highlighted and students learned to use older technologies such as the abacus, Roman counting board, and Napier's Rods. In Liberal Arts Mathematics, all of my students are in non-STEM fields, so to keep them interested in the mathematics, I incorporated toys, like dice of varying kinds, and games, such as Rock-Paper-Scissors and dreidels, to teach probability. In the geometry unit, students calculated various measurements for a blueprint for a new house and later created tessellations based on transformations. Graph theory instruction involved the Four Color Theorem, and students got to color their own maps of the United States. The Liberal Arts Mathematics course also included a writing component, where students were regularly asked to reflect on work they had done or describe their answers.

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## LEARNING STYLES

Having so many varied teaching experiences and students with varied strengths, when I write a syllabus for each new semester, I strive to be as inclusive as I can of students of all learning styles.

I believe that every class is a learning environment for me as an educator and that my teaching is always a work in progress. I often include auditory and visual descriptions of what I'm doing in class, and look to include kinesthetic motions, writing descriptions, and social interaction where appropriate. Even so, it can be challenging to facilitate learning for all students in a large class each lecture period. Therefore, I choose my teaching methods so as to be beneficial to as many students as possible. This means creating an environment where students feel comfortable in my classroom and can get the extra help they need. I find that by building a good relationship with students, they are willing to come to my office and ask for help, which allows me to work one-on-one with the student to facilitate learning in a way that's best for them.

How I teach a certain skill or concept depends on the lesson to be taught. Since I am often introducing my students to new mathematical concepts, I find that most of my teaching time is devoted to interactive lecturing. Although the problem type to be taught may be new, it builds upon previous classes' lessons, so I am able to keep students active and attentive by asking them to fill in details of the work that they already know how to do. This is most commonly done with questioning, and in larger classes, with the added use of clicker technologies. When reviewing topics at the end of a unit or before an exam, I like to use group work because students find it easier to complete more difficult problems in the group setting, and can build upon each other's knowledge of the topic.

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## ASSESSMENT

Each class is a little different, due to differences in curriculum and the individuals in the class, and knowledge of this diversity fuels my decision to vary assessment of student learning in my classroom. I assess student learning through conversations in office hours and class, graded homework, classroom clicker data, quizzes, exams, and cumulative final exams. I believe in the power of practice, so keeping students working with homework assignments, both handwritten and digitally turned in, not only keeps them thinking about what they learned, but it also allows me as the teacher to assess their knowledge by grading and commenting on their work. Quizzes give me a broader sense of who in the class really understands what I am teaching. Typically, I include about 3 exams in my course that each cover 2-3 chapters of material and at the end of the semester, I give a cumulative final exam. Sometimes, students have a false sense of their understanding, and I often find that written assessments, no matter the kind, and conversations with students in office hours help those students to take a good look at their study habits and priorities and evaluate their own understanding. They also help me to understand where the student might be misunderstanding my instruction. My goal is to be a guide for student learning, and providing many opportunities for the student to demonstrate their learning of the concepts helps accomplish this goal.

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## BROADER IMPACT

Being a math educator, you might assume that I only teach math. This includes basic problem solving techniques, number sense, and modeling skills, not to mention course specific techniques. However, I feel that it is only part of my job as an educator to teach my subject matter. Since I usually teach lower level courses, I am also charged with the task of orienting freshman with the college culture. This means encouraging proper college classroom etiquette and group work ethics. Although we don't have a lot of writing in the math curriculum, I still ask that they use both basic

grammar skills and an understanding of the mathematical concepts to explain their solutions by writing short explanations of their reasoning. I believe that I am not just teaching a student math, but teaching them life skills that leave them better prepared to function successfully in the world.

In the future, I would like to continue to follow current research in Mathematics Education. I am a licensed teacher for grades 6-12, and with this background in secondary education and a generous amount of experience in developmental math, I see a need to continue using best practices for the benefit of my students. I have an interest in the Common Core State Standards and how they are benefiting students in their understanding of mathematics. As an early career mathematician, I also hope to pursue becoming a Project NExT fellow, as I believe that this will benefit not only my teaching, but my service to my department and institution.