

TEACHING STATEMENT

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1. TEACHING PHILOSOPHY

The following quote from Louis Pastuer appears above the drinking fountain in the Mathematics Library at Purdue and expresses a sentiment which I believe to be true.

Knowledge belongs to humanity, and is the torch which illuminates the world.

Each individual who quests for knowledge adds to this light which illuminates the world, but they are not alone on this quest. I would not be the person that I am today if it were not for the influence and guidance of my teachers and mentors. While mentors provide guidance and encouragement, the role of the teacher is to facilitate the students acquisition of knowledge and so that the student is more equipped to handle subsequent challenges. Thus, the teacher creates a good learning environment, sets the pace and content of the course, and maintains flexibility, all while highlighting the process of discovery. The process of discovery is addictive in that it feeds itself. Knowledge gained and the act of discovering both add to ones ability and desire to discover even more. My goal as a teacher is not just to facilitate the act of discovery in order for my students to gain knowledge, but also to highlight the act of discovery itself with the goal of preparing my students for future challenges while creating an environment which promotes discovery.

1.1. Creating a good learning environment. My primary goal as a teacher is to help my students realize a flexible learning environment which encourages interaction and promotes discovery. In order to achieve this goal, I make specific lesson plans for each class meeting and I also make an effort to anticipate and plan for the obstacles the students may face towards learning a particular concept. One way that I try to plan for obstacles towards learning is to think of likely questions the students will pose. In many instances, I have been asked questions which I had not anticipated but which allowed me to better understand the obstacles which face the students. An effective teacher answers questions which go beyond the prepared material for the day if, in so answering, the teacher is able to reinforce and tie together concepts for the day with those learned previously in the course. It is also important to be fair and honest. I believe my students work harder and are more likely to be self-motivated if they understand the grading scheme for the particular course, think of me as a fair grader, and have a chance to discuss particular grades they may receive. Most importantly, I believe that my students learn by seeing lots and lots of examples. I prepare my examples with the goal of tying together and strengthening concepts from the entire course, and I believe it is important to always finish the example rather than to leave any calculations undone. I have employed all of these techniques in my teaching with the goal of providing my students with a rich learning atmosphere where the joy of learning can be realized.

1.2. Setting the pace and content. It is the responsibility of the teacher to achieve the goals for the course in such a way as to promote the process of discovery. While each new concept learned contributes to the knowledge of the student, the discovery of each new concept has other roles as well. It is important to highlight the way in which each new concept materially reinforces knowledge gained earlier in the course. This redundancy creates a strong network of knowledge in which concepts are not isolated, but rather they are interconnected with other concepts to form a strong network of ideas. It is therefore important to be flexible when lecturing, since it is not always possible to predict the connections which the students will discover, but it is the teachers responsibility to reinforce these connections.

Finding the right pace for a course is highly sensitive to the particular group of students that one is teaching. Always, however, it is important to realize that the process of learning new concepts and the discovery of how ideas are connected takes time. An effective teacher realizes this and makes an effort to allow the students time in order to assimilate a new idea as well as consistently reinforcing concepts by tying in previously learned concepts with new ones.

An effective teacher formulates how best to present material so that the concepts are easily understood. I believe that my greatest resource for being an effective teacher is my own ability to learn. In order to find an effective method for conveying a concept, I first analyze the way in which I understand the concept in question. If I can determine the reasons why a particular concept actually makes sense, it gives me insight on how best to present the concept for the purpose of learning.

1.3. Being flexible. An effective teacher is flexible in a variety of ways, but the most important instance where a teacher needs to be flexible is when explaining a concept to a student. If a student does not understand the explanation of a concept or the solution to a problem, simply repeating the explanation will almost never achieve the desired result. Rather, one should take a moment to think about the problem, rather than the solution, and consider what specifically is difficult for the student to understand about the particular problem. If the teacher is able to discover the source of the difficulty in understanding the concept, the teacher is then able to facilitate the acquisition of the desired knowledge. Afterwards, teacher and student are rewarded in that both have gained valuable knowledge and participated in the act of discovery.

2. EXPERIENCE AND ACHIEVEMENTS

I have had extensive teaching experience as a teaching assistant at Purdue University and have been the instructor for Linear Algebra, Business and Life Science Calculus sequences, and College Algebra. I have been repeatedly recognized as an outstanding teacher based on teaching evaluations and classroom visits culminating with the receipt of the Department of Mathematics Excellence in Teaching Award in November, 2011. I have participated in a variety of workshops organized by the Purdue Mathematics Department aimed at developing a variety of skills ranging from effective time management, to creating an interactive learning environment, to handling disruptive behaviour in the classroom. Finally, I have provided encouragement and otherwise interacted with advanced undergraduates by attending such functions as the Undergraduate Math Club Pizza Seminar as well as having individual meetings with undergraduate students as a mentor.