Jeff Kinne
Teaching Philosophy

My views on teaching have evolved through the various phases of my life – from undergraduate in a liberal arts setting (Xavier University), graduate in a research setting (University of Wisconsin-Madison), and now faculty in a setting that is in between. I have always thought that teaching is the coolest job around – I get to stay in school forever, inspire others, and be part of other people's breakthrough moments. My time at Indiana State has only served to confirm this view to me again. The role of teacher comes with great joy but also with great responsibility to do our best for the students. What follows are the most important principles of my teaching philosophy aimed at "doing my best" and a discussion of advising, mentoring, and outreach – professorial roles other than classroom teaching that are important to me.

Teaching Principles The primary goal for students completing a degree in the sciences, beyond mastery of course content in each course, is to retain the core principles and develop problem-solving skills they will need to confront diverse challenges in the real world. The following are the key principles that guide my teaching to meet these goals.

Passion for Learning I believe all people have a passion for learning the things that are interesting to them, and students who are interested in the subject are much more likely to succeed. The two key overriding principles of my teaching philosophy are to (i) provide an environment that challenges the students and allows them to grow intellectually, and (ii) seek ways to encourage passion for the subject and avoid those things that would get in the way of this passion. Each of my remaining "teaching principles" are simply ways to try and achieve either or both of these overriding principles.

Purposeful Work I try to keep the motivations for material close to the surface, both during lecture and with homework problems. I also try to regularly give students glimpses of the big picture and how the course material fits within their wider education.

Different uses of Class Time I find the students benefit from a variety of classroom activities. The largest portion of classroom time is spent lecturing – myself presenting a problem to solve, asking the class for their first thoughts, and then myself presenting the eventual solution. But a large portion of classroom time, especially in freshman and sophomore level courses, is also spent allowing the students to work problems in groups with myself going around the class to assist the groups. In addition, I allocate ample classroom time to allow the students to give presentations over course material and/or projects; after all, one of the best ways to learn material is to teach it.

Assessment and Evaluation Both the students and I benefit greatly from frequent feedback on our progress in the course. We can thus address any problems before they snowball – the students by adjusting study habits or seeking additional help if having difficulty, and myself by adjusting teaching methods or organization. I typically take an anonymous course survey after the first 3 weeks and 6 weeks of the course, and I have found these to be incredibly beneficial to both myself and the students.

Course Content Beyond effective teaching of a given course, we must decide what particular material to include. Each time I teach a course, I reflect beforehand on what the most important skills/knowledge are that the students should come away with. For example, after an introduction

to programming course, students should be able to (1) trace through and understand basic programs written by others, (2) create programs to solve basic problems, and (3) "think like a computer". There are many particular pieces of knowledge that students earning an A or B should master, but I want to make sure that every student passing the course has at least the basic knowledge.

Diversity One of the main challenges of most classrooms is how to deal with the diversity of abilities and backgrounds – how to challenge the stronger students while not alienating or confusing the weaker students. I am still trying to find ways to figure this problem out, and I probably always will be. For now, I try to have some weeks that are more challenging and other weeks that allow more time for review and in-class work. I also incorporate challenging extra credit questions to offer differentiation in assignments to the different students.

Professional and Communication Skills After completing a degree, a student should have developed their professional and communication skills in addition to mastering content knowledge and skills. Students will practice and develop these skills in each of my courses – giving presentations to the class, evaluating themselves and peers, writing project reports, and working in groups.

Student Work The students in my courses perform many different types of work. Regular quizzes and homework assignments keep the students on task and provide quick feedback to them on whether they have mastered the material or not. Exams provide motivation to many students that no other form of assessment seems to. Projects and presentations, in addition to developing professional and communication skills, allow a student to have more independence and creativity in their work.

Other Roles The responsibilities of a professor extend beyond the classroom. In addition to striving for excellence in the classroom, my priorities include the following.

Advising and Mentoring In the role of advisor and mentor, we guide students through a program and on a path to a career. In addition to assisting in such areas as choosing which courses to take, advising and mentoring include helping the student to get involved in research, an internship, or a coop depending on the interests of the student. After all, the best way to learn science is to *do* science. I try to incorporate many of the same principles of teaching into advising and mentoring – being organized, having passion for the subject, and having high expectations for the student.

Outreach I am very interested in spreading the joy of knowledge not only to computer science students but to anyone who is willing to listen. Outreach programs are particularly relevant in relation to a current shortage of qualifited compute scientists in the workforce. Exposing the public to the fundamental concepts, fascinating tales throughout history, and current challenges of computer science can be a crucial component in attracting more interest in our field. Although the K12 education system and industry can do their part, we at the collegiate level should lead the effort. We should seek outreach and mentoring opportunities in the K12 schools to do our part.

Concluding Remarks One wonderful part of teaching is that I am not alone in these endeavors – I learn every day different strategies or approaches to take from both colleagues and the students themselves. Working together we can do great things, we can be great teachers and learners!