

# Sinclair Mathnet

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## FROM THE CHAIR



In the last *Mathnet* I discussed the difference between an education and a product, and between students and customers. I described education as "an experience that changes not only the state of our knowledge but also our understanding. . .". I described students as "people who study to acquire an education". I emphasized that becoming educated means undergoing a change in oneself and that the students are the ones who are changed *and* the ones who do the changing.

In this article and in the next issue of *Mathnet* I will comment on what it means to study in order to undergo the change that comes with becoming educated. I will comment as well on what that may imply about the role of the teacher.

We can identify five ways in which human beings can change. They correspond to the five different aspects of the human person. We can change physically, emotionally, socially, intellectually and spiritually. These aspects of the human person are not totally distinct. They overlap and interact with each other. But they do represent substantially different aspects of our total being. I take education to mean changing intellectually. This will likely result in consequent changes in the other areas, but changes in those areas are not the express intent of education, but rather of other endeavors. For example, an intellectual change may lead to a spiritual or physical change, but changes in these latter two areas are more expressly the purpose of religion and athletics/medical science/dietetics etc., rather than education.

There are many varieties of education. They can roughly be mapped to the various disciplines.

Students must first make some general determination about the discipline upon which they wish their education to focus. The subsequent intellectual change in this discipline area encompasses two things, the acquisition of knowledge and the development of understanding. Therefore, studying to acquire an education would entail such activities as might lead one to acquire knowledge and develop understanding.

In the remainder of this article I will consider the acquisition of knowledge. I will address the development of understanding in the next issue. Knowledge must either be acquired from others, or from the world, or from self. Acquiring it from others occurs as a result of either reading books and other material, or hearing the spoken word. Acquiring it from the world occurs as a consequence of observation or experimentation. Acquiring it from self comes as a consequence of thinking. So the student must read books and other material, listen to the spoken word, observe, experiment and think. Hence the role of the teacher should include directing the student as to what materials to read, who to listen to and what to observe. The teacher should also be adept at providing his or her own written or spoken information for the student to read and listen to. Clearly this requires the teacher to have mastery of the knowledge that is to be acquired as well as mastery of the resources available for acquiring this knowledge. The teacher should also be adept at pointing out things in the world which students should observe to acquire the appropriate knowledge, designing experiments, and guiding the student through these experiments to acquire knowledge. As to thinking, it is interesting that, although much of human knowledge has been amassed as a consequence of thinking, nevertheless, thinking does not normally play a substantial role in the acquisition-of-knowledge part of education.

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## Faculty Feature - Richard Uchida

The Math Department welcomes full-time faculty member Richard Uchida, who started teaching at Sinclair this fall. Richard comes to us from Hilliard, Ohio, which is in the Columbus area. He still lives there with his family, so he has been putting many miles on his car with the commute to Dayton.

The community college setting is not new to Richard, as he earned an A.A. degree at Long Beach City College in California. His B.S. and M.S. in Mathematics were both earned at California State University, Long Beach.

Before coming to Sinclair Richard taught for several years at the Ohio State University, and for one year at Columbus State Community College. He has also had teaching experience as a graduate teaching assistant both at Ohio State, where he was enrolled for two years in the Ph.D. program in Mathematics, and at California State University, Long Beach.

When asked what brought him to Sinclair, he says, "I had been looking for a full-time teaching job after part-timing at both Ohio State and Columbus State. And I heard from people at both schools of Sinclair's reputation."

Richard has two stepdaughters with his wife Jaimie. Mariah is six years old, and Marisa is two. Richard says that the rest of his family resides in California, where he is originally from.



**Richard Uchida**

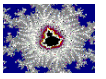
When asked about any special projects or interests he might have, Richard says, "For the past two years I have been concentrating on teaching." And he adds, "Although I have had no time for it lately, I do enjoy playing a variety of card games."

Welcome to the department, Richard!

Susan Harris ■

## REMINDERS

- **Don't forget that we must provide accommodations for students who bring us appropriate documentation from the Disability Services Office. For students receiving a calculator accommodation in Math 101, they must indicate which of the two approved methods of accommodation they prefer. If you are not familiar with this policy you can read about it on page 1.6 in the Mathematics Department Faculty Handbook.**
- **Incomplete (I) grades may be given only to students who are doing passing work. The decision to assign an incomplete grade should be made only at the very end of the quarter and the remaining work should normally not comprise more than one or two tests or assignments. See section 4.2 in our handbook.**
- **Except for an I grade revision, a grade change is generally not appropriate for a student who submits work after the end of the quarter. See section 4.2 in our handbook.**
- **Classes should be held for the entire scheduled time.**



**Faculty Feature - Doug Rose**

After dedicating over 22 years to teaching Mathematics part-time for the Sinclair Mathematics Department, Doug Rose is retiring.

Not only has Doug been a teacher for Sinclair, but he is also a Sinclair alumnus having taken classes here between 1973 and 1982. He earned two degrees from Sinclair: an A.S. in Business Management, and an A.A. in Liberal Arts with a Mathematics concentration. In addition, Doug earned two degrees from the University of Dayton. In 1978, he earned a B.S. Ed. degree that included certification in Math, Business and Psychology. This was followed in 1984 by a M.S. Ed. degree in Math and Psychology.

Before teaching at Sinclair, Doug taught Mathematics at Miamisburg High School full-time. He also taught Shop Math at the Patterson Adult School, as well as doing some substitute teaching in Dayton, Kettering, Oakwood, Fairborn and other communities.

Doug was born in the Dayton area in 1953, and returned here in 1959 after residing for some time in Canada with his family. Doug is an only child, but says that he has cousins in Wilmington and Cincinnati, in Albuquerque N.M., and throughout Canada, mostly in Sault Ste. Marie, Ontario. When asked if there was anything else that he wanted us to know about his family, he says, "My mother grew up in Columbus. Her Uncle French wrote texts in Engineering Drawing, and was the Head of the Engineering Department at Ohio State. When he died, dignitaries came. The family knew Teddy Roosevelt." He also adds,

"The family were personal friends with the Wright Brother family. The older brother (Orville) drove Mom and her best friend Mary Belle to Ohio State football games. She wasn't impressed about the Wright brothers - she *was* by his car."

Doug enjoys coin collecting and studied Jukado, a Martial Art, in his younger days. He has also published in a national literary publication, "Bachet," and has had poetry published in "Nexus," a Wright State University publication.

Doug reflects on his time with the Math Department at Sinclair, and says that the experience was "positive (very). I could write a book about it." When asked what he would miss about Sinclair his answer was simply, "Everything!!"

We wish Doug the best of luck in his future pursuits, and thank him for the many years of service to the department and to the students here at Sinclair Community College.

Susan Harris ■



**Lend a helping hand!**

The Math Club is looking for volunteers who can help with any 200 level Mathematics courses. Let us know if you're willing to help!

Send an e-mail to [Emily.enright@my.sinclair.edu](mailto:Emily.enright@my.sinclair.edu), or just drop by the Math Department Office, Room 1341, to sign up.



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Of course, it is heavily involved in the development-of-understanding part of education, but it is difficult for most of us to acquire a great deal of knowledge purely through thinking. Even in the field of mathematics, where thinking (as opposed to experimentation or observation) has played a more substantial role in the generation of knowledge than in many other disciplines, it would be very difficult for most of us to arrive at a very extensive knowledge of arithmetic and geometry, let alone algebra, trigonometry and calculus, purely through thinking. Nevertheless, we could not be satisfied with any teacher who did not give direction to his or her students as to particular concepts to think about in order to figure out as much on their own as they possibly could.

And so to acquire knowledge students must read, listen, observe, experiment and think. And teachers must give direction as to what to read, what to listen to, what to observe and what to think about. Teachers should also provide original material for the student to read and listen to, or at least translations, interpretations or synopses of the material of others that are more intelligible and tailored to the needs of the particular students. Teachers also should guide students through experimental procedures designed to help acquire knowledge.

These general descriptions of what teachers and students should do shed some practical light on what we might expect and not expect of students and teachers in particular circumstances. For example, it is clear how we should react to a student who, upon being called to task by the instructor for working on her computer during lecture time, recently commented, "I am capable of making my own judgements about my use of class time." This displays the attitude that we might find appropriate for a customer, or even a client, but it is not the attitude we would hope for from a student. Perhaps these descriptions also shed light on how we might react to teachers who do not insist that their students attend class regularly. Are these teachers giving adequate direction to their students as to what material to listen to and are they responding to their call to provide original material for the student to listen to?

Notice also that there is nothing in these descriptions that compels a teacher (in order to have satisfied any

obligations) to modify the extent to which students are directed to read, listen, etc., on the grounds that the student has time consuming personal obligations. We might also conclude that it is incumbent upon the instructor to have adequate mastery of the material so as to come to class sufficiently prepared that frequent mistakes are not made or unnecessary time wasted trying to find out or figure out what the teacher should already know. While we would hope that a teacher would learn something new every time another class is taught, we would not take the view that the teacher is there to learn the material along with the students.

In the next issue I will investigate what it means to study to develop understanding and what this says about the role of the teacher.

Al Giambrone ■

### Harvey's Joke Corner

Definition of a square: A circle trying to go straight.

Q. What happened when the price of duck feathers increased?

A. Down went up.

A retired calculus teacher started an airplane service with the motto: "The sky's the limit."



Student: Were you in the upper half of your class?

Dr. Chew: I made the upper half possible.

Q. What sticks out a little over a foot?

A. An ankle.