

SWAP SESSION NEWSLETTER

No. 11

Swap Session held: 4-19-99

Sponsored by the Faculty Exchange for Teaching Excellence, Dr. Ann Stalheim-Smith, coordinator.

TOPIC: Do Students Learn When We Teach?

Presenters: Dr. Talat Rahman and Dr. Dean Zollman

Dr. Talat Rahman is in the Physics Department at Kansas State University and she is the current President of the Faculty Senate. Dr. Dean Zollman is also in the Physics Department at Kansas State University and he acted as the University Distinguished Teaching Scholar Chair in 1996 and 1997.

Universities and colleges around the country are discussing the learning paradigm which focuses on student learning. With this focus, we as teachers reflect on how we can provide an environment conducive to learning. This task is very complex due to varying student and professor personalities and backgrounds. Drs. Rahman and Zollman presented ideas on how we know that students are learning when we teach and how we can facilitate that learning.

Inspired by a meeting in Washington, DC of the American Association of Higher Education, Drs. Rahman and Zollman highlighted the following Pressures on Higher Education:

- ❖ **COST EFFECTIVENESS:** When we are dealing with Regents or with the legislature, cost effectiveness comes up. How do we know that a Kansas State education is cost effective?
- ❖ **IMMEDIATE RELEVANCE TO CAREERS:** The impact knowledge has on an individual's life usually shows up later. However, students are interested in what they get out of knowledge right away, and even while they're doing it.
- ❖ **STUDENT EXPERIENCES PRIOR TO HIGHER EDUCATION:** Students' experiences before entering college are different now than those we had when we came to school. For example, students have had more multicultural experiences. If we want to make quality higher education accessible to all, we must acknowledge what the students' backgrounds are. We should tap into these experiences and varied backgrounds. To engage the attention of students, we need to make higher education at least as attractive and challenging as today's video games.
- ❖ **ACCOUNTABILITY:** We are accountable to the public, to the students and to scholarship. To ensure accountability, we have annual evaluations and minimum performance standards.
- ❖ **DECREASING VALUE OF FORMAL EDUCATION:** We need to make higher education attractive to students. Students can earn money and succeed in life without higher education; however, formal training can open a lot of avenues to them. Higher education gives you more than a degree, it provides a key to other avenues.

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What these pressures mean to faculty. . .

Challenges to Faculty:

- **TEACHING IS RELATED TO LEARNING:** We must show teaching *is* related to learning and that it is somehow relevant for students.
- **WHAT CONTENT TO TEACH:** It is a challenge to figure out what content to teach. Is the same old information we've been teaching for years still important in the context of today's society?
- **CAPTIVE AUDIENCE IS ESCAPING:** Students are required to take some of our classes because someone else from the outside has told them that they have to. What happens if this outside accreditation board or rules committee does not continue to require students to take a specific class in our department?
- **DISTANCE EDUCATION:** Physics is cheaper when made in Sri Lanka. Distance education will affect us. If students can get a course somewhere else cheaper, is that good or is it bad? How do we convince students that they should come here?
- **FOR-PROFIT UNIVERSITIES:** What will be next? Will Wal-Mart sell physics? Certificates to teach in schools? This may not be as farfetched as we might hope. Wal-Mart has taught us that quality doesn't count. We buy something cheap and disposable. We need to not only be able to argue that our quality is better, but be able to prove it so that students, parents and the state legislature really understand.

Outcomes of Meeting the Challenges. . .

STUDENTS: We should evaluate whether students learned well, whether they liked the process, and whether our teaching appealed to a broad range of students, not just future majors in the field.

FACULTY: We should also evaluate whether faculty members like what they're doing, whether they see a good cost/benefit ratio and whether they have also learned something about the material. It is useful when we get students involved to the point where they are asking naive, hard questions that none of us can answer. This exchange challenges us to learn more about our discipline while learning about how we learn and how students learn.

What value does KSU add to an education that a student cannot get at a for-profit university?

Dr. Talat Rahman and Dr. Dean Zollman asked the Swap Session audience members to discuss in small groups the following *discussion questions*:

- 1) **When does teaching become learning?**
- 2) **When does it not?**
- 3) **Do you agree with the outcome measures listed earlier (whether students like it, e.g.)?**

A spokesperson from each small group shared the following points of discussion:

- ◆ Can you have learning in large classes when you don't have personal interactions with students? We can if they come and interact with us personally, but they don't.
- ◆ It should matter whether a student likes what is being taught as long as it does not interfere with the rigor of a course. If students like what is being taught, they will be more motivated to learn more about it later.
- ◆ Teaching is learning when we see students processing information in different ways and applying it to different situations. When teaching has had an impact on the way students think about something, learning has occurred.
- ◆ The application of knowledge gained reflects learning.
- ◆ Learning to learn is just as important as learning content.
- ◆ Internalizing and externalizing (i.e., applying), knowledge can be done once learning has occurred.
- ◆ Peer teaching is a good way to look for a student's ability to apply information.
- ◆ Creative methods of testing need to be developed to truly assess learning.
- ◆ If we can create an atmosphere in which students want and need information, they will have a better chance of retaining information. We need to show students the function of what they learn.
- ◆ Disciplines need to cross-reference each other for the sake of students.
- ◆ Students need to value the knowledge they acquire in order to retain it.
- ◆ Learning occurs when students get really involved themselves. Students need to become physically and/or mentally active.
- ◆ Sometimes our syllabi seem a mile wide and an inch deep. When we are trying to cover a lot of ground, we teach, but do students learn? We need to narrow the focus and spend more time dealing intelligently with individual topics to ensure that learning, not just teaching, occurs.

Teaching and Learning Strategies from the audience:

☞ In peer tutoring, a student who has completed the course receives credit for teaching course content to students currently taking the course. Peer tutoring involves engagement on both sides.

☞ An interactive CD-ROM tutorial can be integrated into the course study guide to get students involved in applying information.

☞ Mentoring pairs can set goals for student work at the beginning of a unit and to assess student work at the end of a unit. Students learn better collectively/cooperatively, especially if they know they are not competing with each other.

☞ In disciplines such as architecture, fifth-year students can participate in the review of projects done by third-year students.

☞ In large classrooms, it is hard work to get students involved, but it can be done. By simply stopping periodically, asking questions and having students discuss in small groups, we can actively involve students.

Three different ways people use instructional strategies:

Behavioral: There is a certain behavior you want your students to exhibit, so you try to teach them to exhibit that behavior.

Developmental: Students come to class with a certain model that applies to what you are teaching. You want to change that model. For example, many students come into physics with a pre-Newtonian model of how motion works, so we need to change some underlying beliefs. Unfortunately, we usually change the behaviors, not the model. Students can answer the questions on a test in order to get a good grade, but they don't believe what they're writing.

Apprenticeship: We can put together ideas on how people can work cooperatively on peer critiquing and in cognitive apprenticeships.

-Franham-Diggory "Paradigms of Knowledge and Instruction." *Review of Educational Research* 64, 464-477.

Other issues to consider:

As a research university, do we provide anything unique?

We provide the infusion of scholarship into the teaching and learning process. When students are working with you, they are going through the process of creating knowledge. When we engage students in this process, then it is unique; it is not something Wal-Mart can sell!

Can students transfer knowledge from any discipline to other situations?

If they have the analytic process and critical thinking skills, then they have the necessary tools. Think about the way we attack problems. We begin by asking the right questions. Students need to be able to do the same.

Wouldn't we like to have knowledge and its creation become the property of everyone and have everyone become involved in the process?

For a list of references related to today's Swap Session, see:
<http://www.phys.ksu.edu/perg/papers/ksu/teachlearn>

ANNOUNCEMENTS: An opportunity to write on your calendar

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- Workshop on "Peer Consultation" given by Dr. Dan Bernstein, University of Nebraska, Lincoln, on June 3, 8:30-11:30 AM. You are invited to a luncheon with Dr. Bernstein at noon. Following it, we can have informal discussions on Peer Consultation with Dr. Bernstein and our K-State colleagues. Consider this another option on your menu of educational opportunities.