VCU TEACHING

A publication from the Virginia Commonwealth University Center for Teaching Excellence

Volume 5 Spring, 2005

CTE Vital Workshops Spring 2005

CTE VITAL Workshops

- **April 13—Using Personal Response Systems Effectively**

** All VITAL workshops are held in Rm. 448 of the Cabell Library, from 12 pm-1:30 pm, in the office of Academic Technology.

BLACKBOARD Workshops

- **April 11—Using the Assessment Feature in Blackboard**

**** All Blackboard workshops will be held from 12:00 pm-1:30 pm in Rm.320 of Cabell Library.

For more information, contact the CTE at:
cte@vcu.edu
(804) 827-0838

Virginia Commonwealth University is embarking on a major initiative over the next five years to increase both student engagement and subsequently improve student learning. After being reaccredited by SACS in 2004 the university had to develop a plan to make an institutional wide improvement in student learning over the next 5-10 years. The Quality Enhancement Plan (**R**einforcing **E**ngagement **A**nd **L**earning) is our commitment to increasing student engagement in that time period.

Why student engagement? There is a tremendous amount of literature which shows that students who are fully engaged within a university are more motivated, have higher retention levels, and most importantly, learn more while at the university.

Where is VCU right now with regard to student engagement? That is a difficult question, but one that has some answers. The National Student Survey of Engagement (NSSE) is a country wide survey of over 400 colleges and universities and over 160,000 students. This survey has been conducted for the past four years. VCU has participated in the survey for three of those four years. Through this survey we can compare ourselves to other Research I Doctoral Extension universities. When we do that we can see that the goal of furthering student engagement should be of high priority. VCU is below the national norms in 9 of 10 categories in the NSSE for freshmen and seniors. Those categories include, academic challenge, active student involvement in class, faculty-student interaction, richness of out-of-class experiences, and overall campus environment. That said we have a plan to improve our position over the next five years.

We are approaching the problem from three basic vantage points. First, we are committed to developing a clear statement of expectations and learning outcomes for our freshmen class. Jean Yerian is working with faculty in English, Math, and the Sciences to develop a set of expectations that will guide freshmen throughout their first two years. The primary outcome of Jean's work will be a set of learning objectives and outcomes that freshmen can move toward while understanding what their own responsibilities are in the classroom.

Dr. Cathy Howard is working on expanding the number of service learning courses currently offered by all the schools and college. Service learning courses connect students with an agency in the community where the content or skills learned in the course will benefit people served by the agency while giving the student a valuable experience. Students often report experiencing their deepest level of engagement and learning during these courses.

CTE Summer Institute on Teaching & Learning

The CTE Summer Institute will be offered twice -- once in June and again in July. The dates and topics are as follows:

June 6 - 9

July 11 - 14

- **Monday a.m. -- Teaching Large classes**
- **Monday p.m. -- Teaching with Low Threshold Technology**
- **Tuesday a.m. -- Writing Learning Objectives/ Active Learning**
- **Tuesday p.m. -- Classroom Assessment Techniques**
- **Wednesday a.m. -- Developing Critical Thinking Skills I**
- **Wednesday p.m. -- Developing Critical Thinking Skills II**
- **Thursday a.m. -- Teaching with Blackboard**
- **Thursday p.m. -- Work period**

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We have had a number of student learning communities over the past two decades. Student learning communities create a structure for students to both learn course material and also connect with other students. This "bonding" creates both a student culture as well as an identification with the larger university. Student learning communities have worked very well both here and at other universities especially for students who are not living on campus. It creates a social space for students to come to know each other and learn from one another. We will be experimenting with a number of different types of learning communities (residential, cross-course, large classes, general education etc.) over the next five years.

Finally the Center for Teaching Excellence will be offering their services to departments to support their attempts to increase engagement. Current workshops that serve this task are "Teaching the large classroom", "Critical Thinking", "Creating classroom assessment techniques", "Leading a 'full class' discussion", "Infusing cooperative learning into your teaching", and more are planned. This past spring we introduced our newest initiative, Faculty Learning Communities. These are groups of colleagues from all over the university with a common goal or interest. Our first FLC is "Teaching Large Classes". We have two groups who will be meeting twice a month for a year. Individual and collective objectives will be completed during the year with the full support of the CTE and the Provost's office.

In the summer, 2005 all departments teaching freshmen will be asked to show how their curriculum development plans, faculty evaluation plans, and general departmental behaviors are working to increase student engagement.

As our 2020 Strategic Plan unfolds with its emphasis on the "learning centered research university" we should see more clearly the role of student engagement and the tasks ahead for all faculty and dedicated support staff. The articles that follow reflect a variety of ways in which the CTE is attempting to support the QEP. The first article identifies a departmental initiative to promote student engagement through active learning and curriculum redesign. The second article is written by a faculty member who participated in STEP (the Student Technology Expertise Program). This program matches students with certain technology skills with faculty who want to learn these skills in order to improve their teaching.

Dr. Joseph Marolla,
Director, Center for Teaching Excellence

First Experience with Contemporary College Algebra at VCU

By: Yvette Stepanian and Andy Lewis

Like many other institutions teaching college level algebra as a "Gateway Course", VCU 's "DFW" rate for its classes of MATH 141 Algebra with Applications has been desperately high. In the spring of 2004, as a result of a several-year effort to improve student understanding and outcomes in our lower level math courses, the Math Department adopted the recommendations of its Gateway Committee (detailed in Preliminary MATH 141 Guidelines) to create a modeling-based course stressing active-learning to improve student understanding and learning outcomes. The first step in the transformation of the course was a set of eight sections piloting this new approach in the fall of 2004.

We needed a College Algebra that would emphasize the applications of mathematics, enhance the awareness of connections among disciplines (and the world beyond the classroom), and stimulate active student involvement. We knew that "active student involvement" would require more than a new textbook; it would require a drastic change in the way this course has been taught.

We met with the department's major client departments, reviewed dozens of texts, examined the expert literature, and met with a consultant familiar with the best methods currently being used across the country. *Contemporary College Algebra,* by Professor Don Small of The U.S. Military Academy at West Point, was selected as the text for the pilot courses. After talking to Don Small about the approach he advocates in his *CCA*, and after participating in a *CCA* workshop in Miami in May 2004, we knew, with more or less certainty at that time, what tools and goals we would be using:

- Restricting the time spent lecturing,
- Requiring most of the class work be done in groups,
- Expecting students to talk, exchanging ideas,
- Expecting students to be more confident and adventurous, so they can confront new situation/problems, rather than wait passively for a solution that they would later try to mimic.

Hence, we adopted Don Small's term "exploratory learner" and used it to define our primary goal: "To develop students to be Exploratory Learners."

Eight pilot sections of Math 141 – CCA were then created for the Fall semester 2004. Each section would meet twice weekly for 75 minutes and once in the computer lab for 50 minutes. Each section would have at least one undergraduate helper. And each section would have a maximum capacity of 35 students.

Instead of each instructor experimenting by herself with the new teaching approach in her pilot section, it was important to us to live this innovative experiment as a team. Our teaching-team was composed on the one hand of instructors that already had an experience with a similar active/cooperative learning method, and, on the other hand of instructors with no experience with this type of teaching approach.

During the weekly meetings, we would go over a common schedule that would give enough guidelines so that everyone could cover the same material and prepare for the same tests/quizzes. Furthermore, the schedules would be flexible enough to respect each instructor's creativity and rhythm.

Overall, our meetings are very lively; we listen to each other's ideas, we make sure to take a decision only if everyone feels comfortable with it. The meetings are also a time and place where the instructors ("experimented" or not) can share their frustrations, their uncertainties, as well as their successes, and instructors can seek and give advice and encouragement.

In addition to the commitment to exploratory learning, these pilot classes shared several other common elements, including the availability of student TA's to help with the group work in class and Help Sessions preceding tests, the strict attendance policy enforced in most classrooms, the frequency of quizzes and other graded activities in class, and the enthusiasm and involvement of the faculty involved.

CTE Resources and Services

- **CTE Website**
- **CTE Mailing List**
- **VCU *Teaching* Newsletter**
- **National Online Newsletters**
  - **The Teaching Professor**
  - **Online Classroom**
  - **The National Teaching and Learning Forum**
- **Small Grants Program**
- **Faculty Learning Communities Program**
- **CTE Junior Faculty Mentorship Program**
  - **STEP Program**
- **VITAL Workshop Series**
  - **CTE Mobile Workshops**
- **KnowledgeNet**
- **CTE Library**
- **Hardware/Software acquisitions, loans, and training**
- **Consultations**
- **Lecture video-taping and reviewing**
- **Classroom observations and reviewing**
- **Faculty Expertise Database (FED)**
- **Teaching portfolios**
- **Classroom Performance System (CPS)**

Early in the semester, we were already able to compare the CCA pilot sections of Math 141 to the other sections of Math 141:

- The attendance was much higher;
- The students applied themselves in the graded group work;
- The students obtained higher scores on the first test (in general, there were as few as one or two Fs per class of 35, and there were as many Ds).

We also decided to give some common questions to students from both the pilot and traditional sections on the final exams. The results were encouraging – students from the pilot sections did as well on the "skill-based" exercises as did those in the traditional sections, and students in the pilots performed better on the modeling exercises, even though the modeling exercises were taken from the traditional text book.

Furthermore, near the end of the semester, focus groups were conducted with students from each of the pilot sections, and the feedback was generally positive, particularly from students who compared the pilot class to prior algebra classes, including traditional sections of MATH 141. These focus groups produced criticism as well, and we are certainly trying to improve the methods criticized by the students. Interestingly, in almost all cases, the student criticism matched our own self-critiques.

Students in a both kinds of MATH 141 sections had much more success in the Fall of 2005 than students had in the preceding semesters. A lot of this improvement was the result, we believe, of Dean Gottfredson's decision to allow us to create small sections of MATH 141, rather than the large lecture sessions of the prior three years.

In addition, however, students had better grades in the pilot MATH 141 sections than they did in the traditional sections. In the three semesters preceding the Fall of 2005, students in MATH 141 had a DFW rate of about 64% — about 50% of the students received an F or W. In the traditional sections in the fall of 2005, that DFW rate dropped to about 50% — about 37% of the students received an F or W. In the pilot sections, the drop was even more dramatic – the DFW rate declined to about 28% — about 16% of the students received an F or W.

These grade distributions tell us nothing, of course, about what students learned. On the other hand, if evidence indicates that the students seemed to learn no less in the pilots than in the traditional sections, then this is a dramatic improvement in student outcomes – student success (passing) increasing from 36% prior to Fall of 2005 to 63% in the traditional sections and 84% in the pilot sections.

These encouraging results reinforced our position and convictions on our teaching method and classroom approach. We do not ask our students to be able to redo or to mimic exercises shown to them many times in class. Our students face most of the time new problems, and their goal is to learn to handle new situations by trusting their knowledge. They are always given a perspective on the material; they know why they do what they do, they know why need to learn a given skill.

Hence, we do not spend time on repetitive skills unless it is used within a context, a modeling problem. The preparation for the class is therefore more time consuming; the choice for the exercises must be well thought out and well adapted to the class's need.

It has been a very challenging and very rich experience so far, and we can confidently affirm that, the *CCA* approach is an effective way to involve students with their learning experience.

The students' success rate has been higher; only around 5% withdrew (versus 24% in the traditional sections). We know will be observing our students' results in the subsequent classes, expecting that their learning experience with the *CCA* would have made them better thinkers, better problem solvers, better citizens.

CTE Student Technology Expertise Program (STEP)

VCU FACULTY (Project manager, instructional designer)
Anton T. Brinckwirth, Director, Language Learning Center & Coordinator of Instructional Technology, School of World Studies

CTE STEP INTERN (Flash developer, Flash tutor)
David Supola, Engineering Student, Virginia Commonwealth University

The project is to design and develop a Flash-based training series for VCU foreign language instructors who use the Tandberg/Sanako Lab 300 system, a state-of-the-art virtual language lab available in the Language Learning Center at VCU (Hibbs 424).

The purpose of this project is to train VCU foreign language teachers to use Sanako Lab 300 to enrich their students' learning experience through immersion and practice. It is the brainchild of the LLC Task Force, whose mission is to integrate teaching and technology in support of foreign language learning at VCU.

Sanako Lab 300 is a highly flexible, media-rich learning environment with a slight learning curve. My application blends video instruction with animated screen shots of the Lab 300 interface to show instructors how this system can help them make their courses more dynamic and interactive. The final product will be burned onto DVD and streamed in short manageable modules on our website for greater accessibility.

Sanako President Kyösti Niemelä of New York City approved the project personally and expressed enthusiasm about the initiative. "For us this sounds great. We are looking forward to seeing this material" said Niemelä.
My web application will provide an excellent visual manual that makes Lab 300 practical and uncomplicated.

I am using Camtasia Studio for the animated screen capture and Adobe Premiere for the video instruction. The screen shots will include embedded custom callouts to emphasize and clarify instructional points in each presentation. If the project is completed early, I will add additional interactivity to the lessons since Camtasia includes a Flash Hotspots feature.

This training series will supplement workshops and tutorials held throughout the semester for faculty to gain hands-on experience with the LLC's Tandberg/Sanako instructional tools.

CTE Vital Workshop Topics

The CTE offers the following workshops throughout the academic year. In addition, we are more than willing to bring a workshop to your department.

- **Classroom Assessment Techniques (CATs)**
- **Classroom Management Strategies**
- **Creating and Grading Written Assignments**
- **Creating Tests and Test Questions**
- **Developing Critical Thinking Skills I and II**
- **Developing a Teaching Philosophy**
- **Infusing Active Learning into your Teaching**
- **Infusing Cooperative Learning into your Teaching**
- **Leading a "full" Class Discussion**
- **Learning Objectives: Writing them, Assessing them**
- **Preparing a Teaching Portfolio**
- **Teaching with "Low" Threshold Technology**
- **Teaching Large Classes**
- **Teaching with Blackboard**
- **Teaching with Personal Response Systems (CPS)**
- **Using VarGrade**

I estimate that the entire project will take 4-6 more months to complete. A demo version of the project will be posted by the end of February.

Hopefully, this project will serve as a model for software training development with digital video, Flash, and animated screen capture technology. I plan to continue using Macromedia Flash MX to make other media-rich interactive web applications to continue integrating teaching and technology at VCU.

Quote From David Supola

"The STEP program is rewarding for me because it allows me to help VCU faculty learn how to use today's premiere web development tools. This has been far more than a part-time job for me. The STEP experience has given me the opportunity to better understand the process of teaching and learning. The tutorial-based application I've been working on with Tony will continue to help foreign language teachers at VCU for years come."

"I benefited from the STEP experience as much as Tony, because I learned new ways to use Flash as a development tool, and I also learned about other applications and techniques that we used in this project such as Adobe Premiere, After Effects and Camtasia Studio."

Quote From Anton Brinckwirth

"Working with David has been the ultimate collaborative learning experience because we've been able to learn from each other. He is a serious student with advanced skills in Flash and now I have excellent skills in Flash thanks to David and CTE's Step Intern Program."

The Findings of a PDA Study about the Effectiveness of Online Faculty Development

By: Don Finn, PDA Higher Education Disability Training Coordinator -- definn@vcu.edu

During the fall 2004 semester, the Professional Development Academy, a project of the Rehabilitation Research and Training Center in the VCU School of Education, began a study about the effectiveness of an online faculty development module delivered to community college professors in Virginia. The study used the responses of full time, part time, and adjunct professors employed by any of Virginias 23 community colleges. The topic of the module centered on integrating materials and methods for effectively instructing a diverse range of students including those from different ethnic and cultural backgrounds, preferred learning styles, and disabilities following universal design (UD) principles.

The initial sample of participants included 75 professors from across the state that represented a wide range of instructional disciplines, ages, and years of experience

teaching in postsecondary education. The module, estimated to take 45 minutes to complete, provided examples of universally designed materials, tools, and websites. These examples were designed to help faculty to evaluate materials currently used in their curriculum and to gauge the potential effectiveness of materials to be used in future courses. After completing the initial module and providing online feedback, participants who were interested in continuing in the study were randomly selected for inclusion into either an experimental or a control group; participants were unaware of their placement into separate study groups. Experimental group members received supplemental materials (in the form of articles about applying UD concepts into their instruction) via email at predetermined points throughout the four month study. Members of the control group received no additional materials during the study. At two predetermined points, all of the participants were contacted by email to complete identical online follow up questionnaires. The data gathered from these groups were analyzed and compared in a variety of areas to determine if differences existed between them. In particular, the study sought to determine if there were differences between the groups in integrating universal design techniques into their instruction. The study also sought to identify the characteristics that make an online faculty development module effective. After careful examination of the data, some general conclusions about the characteristics of an effective online faculty development module were made, these include:

1. Designing the module to foster easy and intuitive navigation.
2. Dividing module content into brief and succinct sections.
3. Using relevant visual elements that illustrate effective practice.
4. Integration of actual classroom materials exhibiting universal design characteristics.
5. Providing links to documents, websites, and supplemental materials about UD.

The study also found that members of both groups reported a high degree of interest in universal design, integrating UD concepts into their instructional environments, and in reevaluating existing materials and evaluating future materials for UD characteristics. Despite these findings, the study determined that there was no statistical significance between the groups in the rates of integration of UD concepts into their instructional settings. The lack of significant difference between the groups helps to reinforce the importance of careful planning of professional development opportunities. This conclusion was reached because the online module was an adaptation of a face-to-face version that had been presented to faculty from a variety of disciplines at VCU and other colleges and universities over a period of 18 months. The process of presentation, evaluation, and review of the face-to-face version coupled with the recommendations from the content reviewers and field testers about the online version helped to ensure that the sequence, pace, and examples comprising the module were relevant.

This study provided useful information and insights that will be considered as the PDA develops future online modules for faculty. Announcements concerning the topics and availability of these modules will be made through the CTE and in future editions of *VCU Teaching*. Those interested in reviewing the online universal design module may be access it at: http://www.people.vcu.edu/~definn.

For more information about the Professional Development Academy and the services offered to university departments, projects, and faculty visit the PDA website at **http://students.vcu.edu/pda** or contact Don Finn at **definn@vcu.edu**.

CTE Teaching and Learning Online Resources

www.vcu.edu/cte

- **VCU Faculty Expertise Database**
- **50+ Active Learning Techniques**
- **50+ Classroom Assessment Techniques**
- **Tips for Faculty who Teach During Periods of Social Unrest**
- **CTE New Faculty Resource Guide**
- **Learn to Use and Create Rubrics for Grading Written Projects**
- **Online Resources for Teaching Large Classes**
- **Online Resources for Teaching and Learning**
- **Plagiarism: Prevention and Detection**

National Conferences on Teaching and Learning

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VCU TEACHING

LILLY EAST 2005 CONFERENCE -- *"Teaching so Everyone Learns"*

April 1 - 2, 2005 -- Towson, Maryland
http://www.towson.edu/lillyeast/

16TH INTERNATIONAL CONFERENCE ON COLLEE TEACHING AND LEARNING

"Interactivity, Creativity and Online Learning Support: Transforming the Learning Environment"
March 29 - April 2, 2005
http://www.teachlearn.org

TWENTY-SEVENTH ANNUAL SUMMER INSTITUTE ON COLLEGE TEACHING

June 5-10, 2005 -- The College of William and Mary, Williamsburg, Virginia
http://wwwvtc.odu.edu (and click on Summer Institute)

THE 2005 FRONTIERS IN EDUCATION CONFERENCE -- *"Pedagogies and Technologies for the Emerging Global Economy"*

October 19-22, 2005
http://fie.engrng.pitt.edu/fie2005/

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