



Wednesday  
February 17, 2010

**SUCCESS  
IN THE CLASSROOM:  
SHARING PRACTICES  
THAT WORK**

**The Fifth Annual  
UNM Community  
Conference for Teachers  
by Teachers**

**Abstracts listed alphabetically by first author's last name;  
not all presenters provided an abstract**

**Office of Support for Effective Teaching (OSET)**

**<http://oset.unm.edu>**

**Meeting the Challenge of Teaching Science and Mathematics**  
**Santa Ana Room**

**Moderators:** Kristin Umland, Mathematics & Statistics, and Laura Crossey, Earth & Planetary Sciences

9:00-9:30 Laura Crossey, Karl Karlstrom, and Euan Mitchell, Earth and Planetary Sciences, *Use of Field Experiences in an Introductory Geology Class: A Sense of Place and a Sense of Community*

9:35-10:05 Michael Nakamaye, Mathematics & Statistics, *Stimulating Independent Thinking in the Classroom*

10:10-10:40 Ursula Shepherd and Celia Lopez-Chavez, University Honors Program, *Getting to Synthesis: A Few Tools in the Toolbox*

10:40-11:00 **Coffee Break, Fiesta Room**

11:00-11:30 Alisha Ray, Chemistry & Chemical Biology, *Using Clickers to Engage Students in the Classroom*

11:35-12:05 Elizabeth Bush, Health Careers (Gallup), *A Clicker Case Study: The Effect of Audience Response Systems on Student Engagement and Learning*

12:15-1:30 **Luncheon, Lobo Room**  
**Keynote Address, Engaging Writing—What it Means for Student Learning in YOUR Class**  
**Dr. Chris Anson, North Carolina State University**

1:30-2:15 **Poster Session, Navajo Lounge and Fiesta Room** — see poster titles on the right

**Moderators:** Kristin Umland, Mathematics & Statistics, and Jeff Saul, Physics & Astronomy

2:15 –2:45 Courtney Johnson, Pediatrics—School of Medicine, *Music, The Art of Medicine, and “Car Talk” - Relevance for Teaching Various Disciplines*

2:50-3:20 Jeff Saul, Physics & Astronomy, *Creating Activity—Based Learning Environments: Lessons from the SCALE-UP Project*

3:25-3:55 Sudhaker Prasad, Physics & Astronomy, *Challenges and Approaches to Teaching Advanced Physics in the Classroom*

4:00-4:30 Susan Niemczyk, Mathematics & Statistics, *Math 120: What’s Old is New*

4:30-5:30 **Reception and Book Signing with Dr. Chris Anson** — **Navajo Lounge**

**Engaging Students to Think, Learn, and Communicate**  
**Acoma Room**

**Moderators:** James Burbank, English, and Alicia Chavez, Educational Leadership

Julie Redekopp and Cynthia Meléndrez, Spanish & Portuguese, *An Application of Recent Research in Communicative Teaching Strategies to the Spanish 101 Classroom*

Sonia Gipson Rankin, Africana Studies, *“Reading It Gave Me Information, but Living It Gave Me Understanding” : Using Excursions to Enhance the Classroom Experience*

Gary Harrison, Erin Penner, and Dan Cryer, English, *Sequenced Writing and Peer-Inspired Collaboration in the Graduate Class*

Alicia Chavez, Educational Leadership & Organizational Learning, *Cultural Constructs in Teaching & Learning*

S. Howard Krave & Steven Yourstone, Marketing, Information & Decision Sciences, *Quantitative Measuring of Different Classroom Presentation Approaches and Their Impact on Learning*

**Moderators:** Leslie Donovan, University Honors, and Nick Flor, Anderson School of Management

Caleb Bush, Social Sciences (Gallup), *Rubrics, Revisions, and Writing About Race: Helping Students Become Better Writers and Critical Thinkers*

Toni Black, Business & Technology (Valencia), *Engagement is the Answer*

Elisabeth Stone, Anthropology, *Employing Student Discussion to Improve Comprehension of Archaeological Analysis*

Colleen Dunn, English, *Overcoming the Fear: Using Freewriting to Help Students Find (and Use) Their Voices*

**Poster Presentations**  
**Fiesta Room**

Joseph Ho, Chemistry & Chemical Biology, *Engaging Students in Active Learning In the Chemistry Laboratory*

Vicky Kauffman, Mathematics & Statistics, *Projects in Calculus*

Aurora Pun and Gary Smith, Earth & Planetary Sciences, *Teaching Physical Geology with a Learning Activity Sequence Motivates Student Interest, Learning, and Success*

Aurora Pun, Earth & Planetary Sciences, Paul Farnsworth, Biology, Dusty Brooks, Serena Davidson, Courtney Martinez, and Bobbie Jean Reid, *Using Peer Learning Facilitators to Engage Students During In-Class Active Learning*

William Miller, Physics & Astronomy, *Integrating various web tools for communications*

Barbara Rousseau, Educational Leadership/Organizational Learning, *Academic Empowerment: Reading, Writing & Self-Evaluation Across Disciplines Through Collaborative Learning.*

**Poster Presentations**  
**Navajo Lounge**

Therese Baca-Radler, CNM Introductory Studies at UNM, *Theme Based Instruction in Higher Education*

Christine Beagle, English, *The Importance of Ethos to the New Teaching Assistant*

Leslie Donovan, University Honors Program, *Ready for a Close-Up: Webcam Videos as an Alternative to Traditional Student Presentations*

Nick Flor, Interdisciplinary Film & Digital Media Program, *How to Fast-Model Things in 3D: Visual Algorithms that (Virtually) Anyone Can Learn*

Brittany Kelley and Olunmi Oguntolu, English, *Exploration, Play, and Codeswitching: Better Student Engagement for a Better Transfer of Skills*

Kara Kingsley, Teacher Education, and John Unger, Translational Studies (Gallup), *Digital Games and Simulations to Support Teaching and Learning*

Myra Luna Lucero, Communication & Journalism, *Public Speaking in Philanthropy*

Sarah Morley & Ingrid Hendrix, Health Sciences Library & Informatics Center, *Information Survival Skills: Libraries in Medical Education*

Daniel Sanford, CAPS, and Paul Edmunds, CELAC, *Techniques for Evaluating Second-Language Writing*

Julie Sykes, Spanish & Portuguese, and Chris Holden, University Honors Program, *MENTIRA: Mobile Place-Based Games and Learning*



## **Rubrics, Revisions, and Writing About Race: Helping Students Become Better Writers and Critical Thinkers**

Caleb M. Bush, Assistant Professor of Sociology and History  
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This presentation shares components of an analytical essay assignment that draws on topical issues concerning inequality in the United States. This writing assignment poses difficult questions for students around inequality, but in doing so, students often discover they can answer tough questions on their own. A variety of original course materials are included in the presentation, such as articles students have read for the analytical essay (each year a different, more current article is chosen), the assignment guidelines, and the assessment rubric students and I use to evaluate their work. I also discuss the particular challenges of this assignment, including working with students who have limited writing skills (alongside students who are some of the best writers I have read) or for whom English is their second language. While this essay comes from Introduction to Sociology, the materials and techniques should be beneficial to anyone who uses writing assignments in their subject area.

Since this assignment represents the capstone project for my introductory courses, the goal is that every student leaves the class with a polished, readable, and thoughtful essay. I also discuss strategies I have developed over the past several years to help students achieve this outcome, stressing writing as a process. Techniques here include encouraging self-evaluation of written work, seeking out feedback on writing, and welcoming revision of essays. The assignment also compels students toward better critical thought by drawing connections between often dry sociological concepts and the realities of everyday life. Every semester, this assignment provokes some of the most interesting, thoughtful, and at times heated discussions we have in class.

## **A Clicker Case Study: The Effect of Audience Response Systems on Student Engagement and Learning**

Elizabeth Bush, Health Careers Lecturer II  
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This presentation will share the findings of a study investigating student perceptions about using audience response systems, also known as clickers, in the classroom. The study also examines clickers' ability to actively engage students and increase learning. The research was conducted in a college survey Anatomy and Physiology course with twenty-two current students and twenty-four past students who completed the same course with the same instructor. Research reveals that students are very receptive to clickers. Results indicate a slight increase in student perception of learning and participation as a result of clickers along with an increase in class performance during the clicker study period. This study supports the use of innovative technology in the classroom.

## **Sequenced Writing and Peer-Inspired Collaboration in the Graduate Class**

Professor Gary Harrison, Erin Penner, and Dan Cryer, Department of English  
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Frequently used by writing instructors in undergraduate courses, sequenced writing assignments can benefit graduate courses too. Such assignments enable students to scaffold low-risk short papers upon one another to establish a strong foundation for a longer final paper, to develop a dialogue between instructor and student on a focused topic or array of topics, and to get in the habit of revision. In the course that we will discuss in this session, sequenced writing also fostered organically a robust workshop atmosphere wherein students had a chance to take part in the ongoing analysis and revision of their shorter papers, test their ideas among their peers, and ask for constructive help in analyzing their seminar-paper topics—all with the final paper in mind as the ultimate goal.

The particular combination of assignments in this course—formal presentations, informal discussions, “working papers,” and a final research-based critical paper—is probably pretty typical. But the class evolved into a web of integrated learning activities, not so much by the instructor’s design but by the students’ initiative and innovation. In this session, we’ll speak—from the faculty member’s and from the students’ perspectives—about the strengths of this course design and about how it might be adopted for other classes, as well as improved

## Exploration, Play, and Codeswitching: Better Student Engagement for a Better Transfer of Skills

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When students are not engaged and when we, as teachers, fail to recognize our students' educational and linguistic expertise, our students often fail to transfer the skills they learn in our First Year Writing classrooms. We have found that we can get our students engaged by inviting them to deeply explore genre, play with language, and, importantly, recognize their linguistic rights. In addition to teaching students to play and explore, but we teach them to "codeswitch"—choose the variety of language based upon their target audiences.

In our classrooms, students *explore* by *informing*, *reflecting* upon, and *modifying* genres, and they play by using language and punctuation to create meaning. For instance, we allowed students to not only look at genre, but imitate it, repurpose it, and then reflect upon it. We also invited students to play with language and its many registers to recognize and generate meaning; we engaged them to discuss these created meanings with each other; and we had them participate in a Grammar B activity to spark their creativity with language. It worked. Students enjoyed these activities and presented a deeper understanding of how to "situate" themselves within any writing sphere.

Additionally, we spent a few classes addressing the multiple and varying voices our students bring to the classroom. Through discussion of the idea of different "Englishes," their rich linguistic backgrounds, and documents like the CCCC's "Students' Right to Their Own Language"<sup>1</sup>, our students realized that writing is not about "correctness," and they also gained more confidence in their own writing skills. We tied our discussions of different "Englishes" to writing exercises, in which we first asked students to write to different audiences, in the language they felt would be most appropriate for each audience. Second, through peer review, we had the students address their peers' language choices, offering questions and responses to each other's writings based on the rhetorical situation and reader comprehension. Conducting these activities and discussions simultaneously with genre exploration and language play helped the students to recognize the language appropriateness for any specific genre, audience, place, time, and purpose, a practice they can readily apply throughout their academic and professional careers.

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<sup>1</sup> Committee on CCCC Language Statement, "Students' Right to Their Own Language." *College English* 36:6 (Feb. 1975):709-726. *JSTOR*. Web. 17 Aug. 2009.

## Information Survival Skills: Librarians in Medical Education

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The crisis in scholarly communication and the increased emphasis on evidence-based practice highlight the need for information literate health care professionals. Health sciences librarians play a critical role in raising student awareness of issues related to the evaluation, use, and communication of medical information by healthcare providers. To address this challenge, library faculty members Ingrid Hendrix, MILS and Sarah Morley, MLS, created a medical school elective covering these important issues. Since its inception in 2006, the course has been taught four semesters in the UNM School of Medicine curriculum.

Overall course objectives were to:

1. Understand the changing nature of scholarly communication and online publishing;
2. Identify resources and strategies for searching current best evidence;
3. Apply methods for presenting and managing information.

By using a “soup to nuts” approach, 2<sup>nd</sup> and 3<sup>rd</sup> year medical students are given the opportunity to become familiar with and understand all facets of the information cycle. The syllabus includes sessions on the publication process, the rising cost of medical information leading to alternative publishing models, literature searching, resource management, and presentation skills. The authors were interested in introducing concepts and strengthening skills that students will use in their future careers as researchers and evidence based practitioners.

This hands-on course elective provides practical application of evidence-based concepts and skills for students working on research projects or for students in the clerkship phase. Feedback from student participants reiterates the value of providing this type of information and has given us greater insight into optimal placement of topics in the broader School of Medicine curriculum.

## Quantitative Measuring of Different Classroom Presentation Approaches and Their Impact on Learning

Sherwin H. Kraye, Lecturer, and Steven Yourstone, Associate Professor  
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The research that will be presented discusses on how substantive differences in learning outcomes between traditional classrooms and those using different digital techniques. Randomized block experiments were designed in different sections of 300 level undergraduate Operations Management classes at Anderson to determine if different digital techniques had a quantitative (measureable) impact on student learning outcomes. Both quantitative and conceptual material was studied. Learning was measured using the difference between the scores on an entrance examination and the final examination. The techniques that have been studied included: (a) the use of “clickers”; (b) “on line grading”; (c) multiple attempts at doing computational problems; and (d) hands on learning. Only the clicker technology had an impact on student learning as measured by test scores.

The purpose of the research was to examine the effect on learning outcomes using different digital technologies in undergraduate Operations Management classes. Rather than examine attitudes of students and faculty about the new technologies, we examined changes in student learning outcomes. In short, we sought evidence to assess the difference in learning outcomes, as measured by examinations, covering both conceptual and quantitative material, using different digital techniques.

For each digital technology studied a control group class and a test group were set up. The control group did not use the digital technique being studied while the test group did. Assignment, quiz, and entrance and final exam scores between the two groups were then compared using various statistical techniques. The studies were conducted as a randomized block experimental design where the manipulated variable is a particular digital technology. Research was conducted during the spring 2006 semester and is currently ongoing.

The only digital technology that showed a significant difference in learning outcomes between the control and test groups was “clickers”.

### Bibliography:

1. Steven A. Yourstone, Howard S. Kraye, and Gerald Albaum; “**Classroom Questioning with Immediate Electronic Response: Do Clickers Improve Learning?**” *Decision Sciences Journal of Innovative Education* Volume 6 Number 1 January 2008
2. Steven A. Yourstone, Howard S. Kraye, and Gerald Albaum; “**Online Quantitative Based Assessments – Are More Attempts Better for Learning?**” To be published in *Decision Sciences Journal of Innovative Education* July 2010

## **Mathematics 120: What's Old is New**

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**Mathematics 120:** At UNM, Math 120 is probably the most difficult mathematics course to teach. Many of our students—for a variety of reasons—are way behind in their basic mathematics skills, as well as in their study skills and their test-taking skills. In addition, some students have poor attitudes about math. A number of these students could go on to do great things—provided they caught up their basic skills so that they could obtain quality educations. Our success in teaching this class has not been good. In recent years we have used a lecture format, aided by calculators and computer packages. Typical class size has been 60 students. This paper presents the updated, student-centric approach we are using to teach this class. The approach is in many ways a return to the old ways of teaching in that it emphasizes students doing and exploring math to learn math and eliminates calculators and computer packages.

**Impetus for Back-to-Basics Approach:** Two years ago I taught an intersession class to help students who almost passed Math 121 prepare for and re-take the final. It did not make sense to lecture to students who had already heard "everything". Instead students were given extensive, carefully-prepared problem sets covering all important skills, as well as other problem sets designed to help them make connections. As "instructor", I ran around answering questions. The students stated that they learned much more than they had all semester and they asked why we didn't teach math classes that way. The answers: (1) in a regular math class we must teach multiple new skills on a daily basis; and (2) no appropriate materials existed.

**Development of the Approach:** Over the next two semesters, I developed a set of self-contained materials, including text—with a few illustrative problems—and extensive homework sets, with space provided for work. Homework was designed to address a diversity of skill levels, to promote mini-discoveries, and to otherwise engage students. The classroom format included a daily mini-lecture, with the class completing the introductory problems together, followed by a work period to start homework and ask individual questions. After two semesters, I approached the Math Department about using the book and was told we could pilot it in 4 sections. Subsequently we tried 7 sections. Currently we are teaching all sections this way. Title V peer mentors help in half of our classrooms.

**Intent of Approach:** At the core of the approach is active learning. The emphasis is on maximizing the amount of time students actually spend doing math and on being certain that time is productive. To the greatest extent possible, the approach seeks to individualize help for all students, helping students with poor math backgrounds catch up while still challenging well-prepared students. The approach promotes students taking responsibility for their own math educations.

**Results for Instructors:** Instructors have reported a significantly improved teaching experience. Every day they help many students. They get to know their students much better than in a typical megaclass. And instructors see their students making progress daily. Each day students come to class better prepared because they have done at least some of the previous day's homework. Over the course of the semester, instructors see students coming together into a "community". All this positively reinforces instructors who in the past have received negative feedback, from the high failure rates and depersonalized classrooms.

**Results for Students:** Students like the approach for variety of reasons: their own questions get answered (and they don't have to listen to everyone else's questions); most of a student's time is directed toward individual learning; it is their choice whether to work with other students; (within certain parameters) they get to choose what to work on; the classroom is a comfortable (no pressure) place; the book is self-contained and includes all their notes and homework, making studying easier; the book is focused; and last but not least the book is cheap (\$26).

**Challenges:** To implement the active-learning essence of the approach in approximately 20 or more sections of Math 120 taught by an ever-changing group of 12-15 part-time, lecture-loving instructors while allowing the strengths of the individual instructors to shine is the primary challenge. Eliminating counterproductive educational practices which have crept into our teaching is another challenge.

## **Using Peer Learning Facilitators to Engage Students During In-Class Active Learning**

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The use of Peer Learning Facilitators in our large (100-140 students) introductory Geology and Biology courses over the last 2 semesters indicates that peer-to-peer collaborative learning in our classes encourages active learning and engages our students. Peer Learning Facilitators (PLFs) are undergraduate students that assist instructors to effectively implement active learning in large-enrollment classes. “Peer” emphasizes that these are students have a peer relationship with learners in the classroom and “learning facilitator” emphasizes that PLFs work to facilitate learning in the classroom through one-on-one interaction with learners rather than through traditional teaching. PLFs are currently hired and trained by Title V programs at UNM in collaboration with the Office of Support for Effective Teaching.

PLFs have various tasks depending on the courses they help facilitate. The most important task is to work with small groups of learners to support the successful completion of in-class assignments or to lead small-group in-class discussions that actively engage students in learning. This task includes (a) clarifying and explaining assignment expectations or introducing the discussion (b) checking answers when requested by students who desire to build confidence before moving on with an exercise, and (c) employing the Socratic approach of answering student questions with new questions that support successful completion of, and learning from, in-class assignments and discussions. Other tasks include writing test, quiz and clicker questions, designing handouts and PowerPoint slides on classroom materials, providing feedback on assignments to students and feedback to the instructor on areas of confusion for students, and acting as liaisons between the instructor and students. They are also very useful in giving insight into what is relevant and interesting to their student peers.

The use of active-learning techniques in our classrooms has improved student attendance, student participation, student attitudes and learning gains. This however requires one-on-one, or at least small group, discussions and guidance as the students explore and reinforce understanding of course material. PLFs enable instructors to use active-learning techniques that would otherwise be very challenging in a large class size with a single instructor. They also help to keep students “on task,” and help facilitate learning at the individual level. Student surveys have indicated that they like the active engagement of assignments in class and the help from their PLFs. They feel confident that the PLFs help them understand the conceptual ideas presented during class. Comparison of exam scores also indicate that students have higher scores on exams in classes using PLFs than those taught without PLFs.

## **Teaching Physical Geology with a Learning Activity Sequence Motivates Student Interest, Learning, and Success**

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To maximize student learning, we designed a learning-activity sequence (LAS) for introductory non-majors physical geology (enrollments 20-100) that integrates in-class instruction with structured out-of-class learning. The LAS has 3 essential parts: Students read before class to acquire knowledge used during in-class collaborative, active-learning activities that build conceptual understanding. Then, students review notes and synthesize what they've learned before moving on to the next topic. Our teaching model combines online and in-class learning and assessment: Reading quizzes before class; active-learning experiences during class; learning assessments after class. Class sessions include short lectures, peer instruction with personal response systems ("clickers"), and small-group problem solving (lecture tutorials).

Students are motivated to participate in the LAS by assigning points for completing tasks. Students are motivated to read by having online multiple-choice reading quizzes. After taking these quizzes, they have acquired some basic fundamental concepts which they are asked to apply during in-class learning tutorials. Their acquired knowledge from their reading is also applied to clicker questions answered by students using their student response systems. In-class learning allows students to interact with the instructor on more challenging conceptual content and to help correct misconceptions. After class, students are given online questions that mimic potential exam questions. Students are given individual feedback on short answer questions. Students recognize that these interconnected tasks help prepare them for exams. Students eventually appreciate that the goal is not to memorize factual material but to use their newly acquired knowledge to apply in different circumstances or to develop more sophisticated conceptual understanding.

Effectiveness of the LAS approach is reflected in three types of measurements. In 7 sections of Pun's class using the LAS approach, more than 90% of students complete the course with a grade of C or higher (compared to a 70% average for all department sections during this same time). Anonymous student surveys show that: 83% of students feel that they learned more in the LAS approach than with traditional instruction; 90% favor active learning in the classroom to only lecture; learning opportunities motivate 85% to attend class to participate in peer instruction and in-class exercises, even if these assignments did not contribute at all to their grade. Learning gains were assessed with the geoscience concept inventory (GCI) of Libarkin and Anderson (2005, *J Geo Ed* 53(4):395-401). Paired pre- and post-test scores (n=349) in the 7 classes show an improvement from 43.6% to 56.0% (29% gain) compared to the national data set of Libarkin and Anderson showing a change from 43% to 47% (9% gain). The normalized gain ranged from 18% to 36% in different classes, at and above the target goal that McConnell et al. (2008, *GSA Abst Prog* 41(1):49) propose for introductory geology courses that produce improved conceptual geoscience learning.

## **Using Clickers to Engage Students in the Classroom**

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Clickers allow for immediate feedback to students and instructors in the classroom and can be used to serve a wide variety of educational objectives. In this presentation I will explain the basics for implementing clickers in my course (CHEM 111L, Elements of General Chemistry), how clickers can enhance student learning, how clicker usage has evolved in my course over the past three years, and what have been the most valuable lessons concerning clicker use. Upon implementing clickers in the spring of 2007, the optimal strategy for using them as an effective learning tool were not immediately apparent. Through mostly trial and error approaches, several general 'ground rules' were established that will be discussed in detail. Overall, the use of clickers in CHEM 111L has lead to increased peer learning and, more importantly, by replacing traditional paper-based quizzes with clickers, assessment scores improved by >10%.

## **“Reading It Gave Me Information, but Living It Gave Me Understanding”: Using Excursions to Enhance the Classroom Experience**

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Students will not remember your one and a half hour lecture. Few students will remember the essay prompt for a final exam. Many will not remember the PowerPoint distributed. But, they will always retain the information of what they saw, experienced, and felt when given the opportunity to journey outside of the classroom for learning.

Research has shown students are not learning through standard lecture styles that many professors use. The trend has been to turn towards technology as a way to impart information. And there is a logical reason for that. The vast majority of today's collegiate student has spent their lifetime being educated by the reviewing the printed word and seeing information through the cold medium of technology. Television, computers, cell phones, Twitter, Facebook, blogs... There are countless ways to share data today. But, this information is often processed through filters rarely allowing students to truly scrutinize what is theory and what is reality. And while there can be a gut reaction for instructors to gravitate towards a medium that imparts information in the method students say they want to learn, it is essential that we reach out to students using uncommon methods of acquiring and processing information. One way is through field trips and by incorporating the human experience into the learning process.

My presentation will expound on the benefits of taking students outside of the classroom to see theory put to practice. I will also discuss the intangible skills students gain when they connect research to application. I will discuss the lessons learned by myself and the students when we have visited prisons, courthouses, gang intervention meetings, beauty salons, places of worship, and conducted community interviews. I will talk about the challenges of taking students off campus and the success that have come in the increased richness to classroom discourse and student analysis in their written work.

### **References:**

Van Oostrum, D., Steadman-Jones, R., & Carson, Z. (2007). Taking the imaginative leap: Creative writing and inquiry-based learning. *Pedagogy*, 7, 556-566.

Academic Empowerment: Reading, writing, & self-evaluation across disciplines through collaborative learning ©2010

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**Purpose:** Student-centered learning builds efficacy, responsibility, and communication skills essential for multi-cultural, global workplaces. Knowing how to *work collaboratively* with diverse populations and perspectives is now a requirement, not an option. Just as vital, being able to critically *read* for information, clearly *answer* the question, and accurately *cite* supportive evidence builds academic skills, scholarly confidence, and discipline. When engagement is initially established through “front loading” of relevant writing or media prompts and discussion, effectiveness of the lesson is enhanced. Implementation of research-based strategies delivered in a learner-driven, collaborative classroom methodology has application for students of all ages and learning styles.

**Strategies:** Personal power and independence are primary concerns for most students. Learning is most effective when skill relevance (useful application) is combined with engaging content (high interest). Essential front-loading through personally relevant issue discussion engages and optimally prepares students to work. Secondly, successful mastery depends on clearly stated expected outcomes and the use and understanding of rubrics. Students see examples of high, mid-level, and deficient work as defined by rubric criteria. Thirdly, collaborative teamwork helps students understand the process thereby reducing the “affective filter” and improving learning.

**Implementation:** Front-loading initially engages students through media or writing prompts combined with reflective writing and/or provocative class discussion. Students then learn to work with a reading/writing graphic organizer—answering a question pertaining to the discussion, citing and documenting evidence (quoting) from the assigned excerpt, and expanding with opinion or additional examples. Using rubric criteria as a guide, students determine their own academic skill levels. Team “role” assignments are reviewed before groups break out for the assigned reading sample and a group essay answering the reading-related question. As groups formulate their three part responses—answering the question, citing the supportive evidence in the reading, and expanding their answers through examples or opinions—they closely monitor rubric criteria for accurate reading and quality writing. A group selected “reporter” presents the collaborative paper with the group rationale for their self-assessed rubric “rating”.

**Results/conclusions:** In a 100% Navajo alternative high school, a whole-school year-long strategic application yielded results which met the required Adequate Yearly Progress (AYP). Relevance of topic, clear expectations, and collaborative learning prepare students for self-directed academic mastery.

## Techniques for Evaluating Second-Language Writing

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In commenting on the writing of students who are in the process of acquiring literacy in a second language, instructors often find it difficult to decide how to respond to surface-level issues. Line-by-line comments on word- and sentence-level issues are time consuming for instructors, and may not help students as much as instructors hope (indeed, such comments may do little more, for students, than to instill a sense that competence in the target language is out of reach). On the other hand, surface-level issues can impede comprehension, stop the reader from engaging deeply with the author's ideas, and prevent the student writer from establishing a credible voice for themselves. How is an instructor to negotiate all of the considerations involved? What types of contents are genuinely helpful to L2 writers? How much weight should surface-level issues be given in grading?

The presentation groups tools for engaging with L2 writing into three strategies: concentrating on errors that impede comprehension as opposed to those that don't, focusing on patterns of errors as opposed to individual mistakes, and avoiding engaging with surface-level issues in order to focus on deeper concerns such as organization and content. The presentation draws on the presenters' own classroom experience, as well as the collective experience of instructors and tutors (respectively) at the Center for English Language & American Culture and the CAPS Multicultural Writing & Language Center. The presentation focuses neither on ESL students nor learners of non-English languages, but rather is intended to serve as a starting point for discussion across campus on issues related to second-language writing.

Abstract for “Creating Activity-based Learning Environments: Lessons from the SCALE-UP project

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The Student-Centered Activities for Large Enrollment University Physics (SCALE-UP) project offers instructors of large classes an economical and effective alternative to the lecture/recitation/laboratory format. Lecture and laboratory are blended together in a studio approach that uses technology and minimal lecturing to create a highly collaborative learning environment for classes of 50-100 students. This talk will discuss the lessons learned about classroom design, classroom management, and curriculum to make this activity-based curriculum successful. Relative to students in traditional lecture courses, SCALE-UP students are better problem solvers, achieve two to four times the gain on conceptual tests in both semesters, and report greater satisfaction with instruction. We have cut the failure rate for all students in half and even more for underrepresented minorities while improving overall student performance.

## **Getting to Synthesis: A few tools in the toolbox**

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In Spring 2007 and again in 2009, UNM's Honors Program offered 2 linked classes (7 units) that focused on an interdisciplinary, comparative study of arid zones in the Americas: New Mexico and Western Argentina. These classes (4 units in Biogeography and 3 in Social Sciences) examined human and natural history of these two locales. The primary premise was that geology and physical geography influence both cultural and biotic systems.

Our presentation will focus on the teaching methodology of this interdisciplinary approach. We will emphasize the various tools we used to help students get to synthesis. We will include examples of course journals, field study, and final essays and how these worked to achieve synthesis between the two seminars. One primary goal of these two integrated courses was to train undergraduate students in research methods in both the social and natural sciences, while working on topics that provided students with an international awareness and understanding. We had a number of successes, and students in the class responded favorably. One student reported, "... As a result of the From the Rockies to the Andes Program, I learned to truly put different subjects together – taking two entirely separate entities of knowledge and combining them to analyze their effects on one another and search for commonalities.

## Employing Student Discussion to Improve Comprehension of Archaeological Analysis

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Science laboratory classes can be challenging for students who are new to the sciences or whose skills and interests lie elsewhere. Teaching introductory courses that also meet the UNM core curriculum requirements for science credits presents the instructor with certain challenges in meeting a wide range of student needs in a classroom where engagement and interest vary.

The anthropology course "Archaeological Method and Theory" serves a diverse student audience with a range of needs, both in terms of their general education and their professional and educational goals. Most are in their first two years at UNM and few are anthropology majors and fewer still are majoring in another science. However, the course is required for anthropology majors with a concentration in archaeology. This means that the course must be basic enough to be comprehensible to the student with no background in anthropology or archaeology, yet still meet the needs of those who will continue their career in archaeology and need to master the basic skills of the craft and science of archaeological research.

One of the problems with the course can be the mediocre quality of lab reports that constitute a large portion of the work and grade in the class. Some reports are woefully lacking in data analysis, some rely on the students' preconceptions about prehistory rather than on the observations made in lab, and some students fail to draw meaningful connections between material covered in the lecture, lab and readings and the activities done in lab, so that they cannot complete an informed analysis.

I believe that these issues are mainly rooted in a superficial understanding of the process of archaeological analysis and in a lack of practice in critical thinking. Both of these can be remedied or ameliorated by fomenting critical discussion and encouraging students to engage with the material, their own thought processes and their peers. In order to encourage such an environment, I employed a new tactic in Archaeological Method and Theory during the Fall 2009 semester. Labs are completed each week and are due one week later. However, in this course each lab has two due dates: a *discussion due* on the Tuesday following the lab and a *write-up due* that Thursday. On Tuesday we spend around 20 minutes discussing the analyses completed by the students and working through problems they have encountered. This has enabled me to clarify misconceptions or problems with unclear directions and has also allowed students to bring up difficulties they encountered before the lab is due.

Overall, the tactic has been surprisingly successful. Lab scores for this semester are higher than other years and my grading in fact has been more stringent because the overall quality of write-ups is substantially improved over other semesters. Additionally, I have fewer late or missing assignments, because the students know that they are responsible for their write-up on Tuesday and may be called upon to participate in the discussion. It is also in their own best interests to complete the lab before Tuesday, so that they can have problems resolved before the lab is graded.

(excerpt from, Seven Principles for Good Practice in Undergraduate Education, by Arthur W. Chickering and Zelda F. Gamson *AAHE Bulletin*, Mar 1987)

### Good practice in undergraduate education:

#### 1. Encourages Contact Between Students and Faculty

Frequent student-faculty contact in and out of classes is the most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students' intellectual commitment and encourages them to think about their own values and future plans.

#### 2. Develops Reciprocity and Cooperation Among Students

Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions sharpens thinking and deepens understanding.

#### 3. Encourages Active Learning

Learning is not a spectator sport. Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences and apply it to their daily lives. They must make what they learn part of themselves.

#### 4. Gives Prompt Feedback

Knowing what you know and don't know focuses learning. Students need appropriate feedback on performance to benefit from courses. When getting started, students need help in assessing existing knowledge and competence. In classes, students need frequent opportunities to perform and receive suggestions for improvement. At various points during college, and at the end, students need chances to reflect on what they have learned, what they still need to know, and how to assess themselves.

#### 5. Emphasizes Time on Task

Time plus energy equals learning. There is no substitute for time on task. Learning to use one's time well is critical for students and professionals alike. Students need help in learning effective time management. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty. How an institution defines time expectations for students, faculty, administrators, and other professional staff can establish the basis of high performance for all.

#### 6. Communicates High Expectations

Expect more and you will get more. High expectations are important for everyone -- for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. Expecting students to perform well becomes a self-fulfilling prophecy when teachers and institutions hold high expectations for themselves and make extra efforts.

#### 7. Respects Diverse Talents and Ways of Learning

There are many roads to learning. People bring different talents and styles of learning to college. Brilliant students in the seminar room may be all thumbs in the lab or art studio. Students rich in hands-on experience may not do so well with theory. Students need the opportunity to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily.



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**Faculty proposals to teach Freshman Seminars  
in the fall Freshman Learning Communities**  
are invited on November 1 each year, and are due on December 1 each year.

For more information Contact:  
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