

THE IMPACT OF A SUMMER WORKSHOP: STAFF ORIENTATION AT MESA COMMUNITY COLLEGE

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The Arizona Collaborative for Excellence in the Preparation of Teachers (ACEPT) is a National Science Foundation (NSF) funded project to reform teacher preparation in Arizona. One of the major modes for initiating both collaboration and reform between and among university and community college staff has been the Summer Faculty Enhancement Workshops developed and offered by ACEPT co-principal investigators each summer since 1996. The summer of 1999 featured five workshops, one of which was the *Geology Summer Workshop* which brought participants into close contact with eighteen reformed practices appropriate for large lecture style classes. One of the nineteen participants was Ray Grant, Department of Science Chair at Mesa Community College, one of the collaborating institutions in ACEPT. This report describes what Ray, as department chair, did as a follow-up to the summer workshop. What occurred completely transformed the Department of Science “staff orientation” meeting held just prior to the fall semester. Some of the surprising events are described in this report. The transformation of the staff meeting not only speaks to the impact of the *Geology Summer Workshop*, but also suggests creative roles for staff orientation meetings in community college settings.

“Saturday’s meeting prompts this note. . . By virtue of many district policies, adjuncts usually feel like second class citizens. In my experience, no other department has made as much of an effort to lessen that impression as yours. . . I felt very good about being exposed to the same teaching improvement techniques as the full-time faculty. . . I got the feeling that improvement of my skills was deemed important. In short, that I was being treated like a professional.”

Ann Slater, Adjunct Staff member
Mesa Community College
August 23, 1999

What Happened on Saturday?

Ray Grant, Chair of the Physical Science Department at Mesa Community College, usually has an orientation meeting welcoming full-time and adjunct instructors to the fall session. The Fall 1999 meeting was different. For the first time, it wasn’t only about arranging for voice

mail or handing out keys or dispensing coffee. It was different enough to prompt Ann Slater, an adjunct staff member, to pen the remarks quoted above. She wrote these remarks the following Monday, the first day of fall classes. What happened on Saturday to motivate such a response?

An ACEPT Summer Workshop

A few months earlier (May 1999), Ray Grant had participated in a Faculty Enhancement Workshop led by Dr. Stephen Reynolds, a member of the Geology Department at Arizona State University (ASU) and a Co-Principal Investigator of the Arizona Collaborative for Excellence in the Preparation of Teachers (ACEPT). It was one of many summer workshops offered by ACEPT as a major venue for sharing reformed pedagogy among college and university faculty. Dr. Reynold's *Geology Summer Workshop* had focused on eighteen reform-oriented instructional strategies and techniques, such as the learning cycle, concept maps, advanced organizers, analogies, think-pair-share, minute papers, jigsaw, cooperative learning, and multimedia — all suitable for use in the large lecture setting. Ray was convinced that sharing some of these methods with his staff would lead to better science teaching at Mesa Community College. The Saturday staff meeting would therefore be much more than a business meeting. Because of the intrinsic connection to the Geology Summer Workshop, Ray knew his plans for Saturday would be of interest to ACEPT personnel. He sent an open invitation to Sue Wyckoff, ACEPT Principal Investigator, welcoming any and all ACEPT personnel to the Saturday orientation at Mesa Community College. Two members of the ACEPT Evaluation Facilitation Group, Jeff Turley and Daiyo Sawada, accepted the invitation, arrived bright and early for the 8:30 a.m. meeting/workshop on Saturday August 21, 1999, picked up information packets, and enjoyed breakfast while relaxing with Mesa staff.

Déjà Vu

The meeting took place in a small lecture-style theatre (recall that the Geology Workshop had focused on pedagogical techniques appropriate for lecture-style classrooms) with seating for about 55 participants. The sloping tablet desks were arranged in five rows, each row elevated slightly above the row in front of it. At the front of the room was a long lab demonstration table. An RGB projector and a regular overhead projector were in front of it. Off to the side was a TV playback system on a cart.

The first part of the morning did indeed witness a business meeting. Welcomes were extended, announcements were made, information packets were distributed, and as Ray said in a joking manner, coffee was available in case anyone felt a powerful urge to sleep! Several

business items, such as voice mail arrangements and accessing funds for supplemental support, were also discussed. After the mid-morning break, however, the agenda shifted. A brief video clip reminiscent of a classroom scene from *Ferris Buehler's Day Off* triggered several telling chuckles from attendees. The humorous portrayal of traditional teaching was a perfect backdrop for Ray and colleague John Zikopoulos to introduce the mission of the morning workshop. They did so by introducing the reform vision of ACEPT. Ray indicated that he appreciated the effort ACEPT had put into sharing reformed teaching practices and he hoped the morning's workshop would help everyone in carrying out their teaching responsibilities this fall. As an "advanced organizer," Ray distributed a two-page overview of the teaching techniques that would be the focus of the remainder of the day (see Appendix A). The first item on the handout was "Advanced Organizers" which was precisely what Ray was doing at the time! This "practice as you preach" or "model what you profess" attitude was characteristic of the rest of the workshop. It was also a major characteristic of the *Geology Summer Workshop* that Ray had attended earlier.

In addition to discussing items in the hand-out, participants engaged in two major, hands-on activities. The first was led by Jim Giles and embodied the learning cycle, and the second was guided by Ray with assistance from Donna Benson, a Department of Geology staff member at Mesa who also attended the Geology Summer Workshop. The activity was based on the module produced by Ray and Donna as part of that workshop. Both of these activities generated intense yet light-hearted discussion and critique.

Déjà Vu with Something New

Despite the obvious inspiration from and reliance upon the *Geology Summer Workshop*, what happened on this day was much more than a scaled down version. Not only were the instructional techniques tailored to the community college context, the techniques themselves were elaborated upon and used in creative ways. A good case in point was the learning cycle activity led by Jim Giles. The "burning candle in an inverted beaker" experiment, often used to illustrate the learning cycle, was part of Jim's activity. As described earlier, the workshop was held in a small lecture hall with five rows of sloped tablet desks, each with eleven desks per row. With more than fifty staff in attendance, the hall was more than crowded. To add to the confusion, Donna wheeled in about fifteen sets of beakers, candles, litmus paper, matches, water, etc. Working in small groups, participants were encouraged to select materials and equipment and carry out experiments to generate and test hypotheses. With so many people moving into action and with so little space of an appropriate sort to carry out the activities, things became

more than a little problematic. Skeptical looks were exchanged between many of the participants. There were several nearby lab rooms which could have been used, but nothing was said about them. In this state of disorganization, Ray interrupted the proceedings for a special announcement. What Ray had to say caught many by surprise, but they understood his intent. "The activity itself is challenging enough, but I'm issuing you a special instructional challenge on top of that. Find a space in this lecture hall to do the experiment!"

Participants took on the challenge. The sloping tablet desks were useless because the experiment required a level surface for the water. Carts with AV equipment soon had no AV equipment on them. The platform steps leading from one tier to the next became lab tables. The demonstration lab table at the front of the room soon became the site of several experiments, as did the floor space around the demonstration table. It seemed that every square inch of level space was being put to good experimental use. It was impressive to see a lecture hall converted into a make-shift lab in about two minutes. No one complained about the space. All groups met the challenge. Many participants also felt the significance of what was happening. No longer would it be so easy to dismiss a hands-on activity in a lecture hall! Ray did NOT point this out. He didn't have to. It was there in the room; and the room was the message. His challenge triggered it; the participants enacted it. Again, Ray was *practicing without preaching*. The medium was the message; the message was the medium.

Readers familiar with the candle experiment will know that the activity revolves around generating alternate hypotheses about why the water rises in the inverted beaker as the candle burns. This activity never fails to generate heated discussion. After several sophisticated explanations were proposed and bantered about by the chemically erudite, one of the participants offered the final word concerning the rise in the water in the inverted beaker: "Hot air sucks!"

Déjà Vu Déjà Vu Déjà Vu

The Saturday Meeting/Workshop at Mesa Community College is a strong testament to the impact of the reforms initiated by the Geology Summer Workshop. The same could also be said about the Biology Summer Workshop where Jim Giles encountered the candle experiment. The continuing reverberation of the pedagogical effects of these workshops is bringing a new feeling of professionalism among adjunct instructors who often feel "out of the loop." Moreover, the summer workshop reforms were not merely being sustained; they were being sustained in creative ways. The Mesa Saturday workshop was not just the *Geology Summer Workshop*

happening again. It embodied important elaborations not present in the original. With the Mesa Saturday Workshop in mind, it may not be unreasonable to suggest that, in the not too distant future, university staff may be attending state of the art summer workshops offered by community college staff.

During the luncheon break, the two ACEPT members attending as guests had the opportunity to chat with Ray and Donna. The conversation turned to the possibility of sustaining the momentum of the Saturday workshop through additional meetings where staff could share instructional experiences. Ray noted that holding such meetings on an ongoing basis would be a challenge because adjunct staff members are not regularly on campus. If the transformation of the lecture hall into a laboratory is any indication, Ray and his colleagues may have some further surprises up their sleeves. Meeting pedagogic challenges was the order of Saturday.

Later visits to Mesa Community College throughout the fall term indicated to ACEPT evaluators that, while not all participants took up the challenge of reforming their science classes, many expressed appreciation of the support available from the department chair's office. Details of evaluation studies carried out at Mesa Community College during that term are provided in ACEPT Technical Reports C99-1A and SW99-3 available from the authors. ■

Appendix A: Agenda for the Saturday Workshop

MCC ACEPT Workshop

Advanced Organizers

Day of Class:

- Outline of day's class
- Find out what students already know (at end of previous class or beginning of class)
- Activate students' prior knowledge (remind them what you did last class)

Entire Course:

- What-to-know list given at beginning of semester
- Early introduction of unifying concepts
- Post example test at end of first week (instead of right before test)

Classroom Activities

Learning Cycle Approach:

- Exploration phase
- Term and concept introduction phase
- Application phase

Ask questions (Minds-On learning-thinking about what is going on)

- Convergent questions for thinking about, not for answering out loud
- Divergent questions with student cooperation
- Wait time (minimum of 5 to 10 seconds; longer if divergent and very open-ended or complex)

Lecture Bursts (limit lectures to 10-15 minutes)

Consolidation Time (give students time to consolidate knowledge)

Do Sketches in Lecture

Think-Pair-Share

- Individually or jointly make observations/predictions/hypotheses
- Describe/explain to one another
- Make sketches and explain
- Compare and contrast; discuss similarities/differences

Minute Paper

- Short break to consolidate knowledge
- Compare with peers
- Can use for attendance and/or immediate feedback

Essay Questions

Even one on a test may make students study all the material differently because they know they may have to present coherent discussion about any topic.

Use Multimedia

- Observe/experience first
- Explain later (use learning cycle approach)

Journals

- Have students record key points of neatest thing they learned
- Write about how they felt about an activity

Memory Tricks

- Mnemonics
- Visualizing stories

Note: Some additional strategies for student learning

- Mix teaching techniques
- Have students actively solve meaningful problems together
- Ask for student feedback about reform effort – what worked today; what didn't work
- Have students reflect on and share connections to their own interests
- Minimize off-task time
- Use knowledge that is relevant and can be used again
- Do demonstrations; have students make predictions
- Emphasize learning and problem-solving or thinking skills
- Come prepared for class; choose what you lecture about carefully
- Use formal cooperative learning groups
- Content imbedded/required in problems

Students learn science best when

- They are actively engaged
- They are interacting with others
- They are solving problems
- The content is meaningful