

The Assessment Quarterly

A Publication of the Heartland Community College Assessment Committee

Principles of Learning

Research Findings on Instruction Methods and Learning

Gardiner, 1996, and Angelo, 1993

- Although lecture is an effective way to teach low-level factual material, discussion is far more effective for the retention of information, the transfer of knowledge to other applications, problem solving, and changes in attitude.
 - Learning can take place through several sensory channels; the more channels engaged in learning, the better.
 - Compared with individual learning, cooperative learning leads to greater reasoning ability and higher self-esteem.
 - Students succeed best in developing higher-order learning skills when such skills are reinforced throughout the semester.
 - Changes in student's ability to think critically are significantly and positively correlated with levels of praise from faculty.
 - Identifying misconceptions and correcting them through active discussion and involvement with other students is essential.
- To be remembered, new information must be meaningfully connected to prior knowledge, and it must be remembered in order to be learned.
 - There is a direct correlation between hours spent studying and academic outcomes.
 - Over 50 percent of students report studying five or fewer hours per week.
 - Students tend to routinely use study methods that are known not to work (such as re-reading textbooks) and must be taught how to learn effectively.
 - There is a positive correlation between the frequency of out-of-class contact between students and faculty and student retention of material, and social and intellectual development.
 - High expectations encourage high achievement.

Adopted from handout: California State University-Sacramento. Teaching and Learning Online. Available (online): <http://www.csus.edu/uccs/training/online/index.htm>.

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Message from the Chair



While at the ICCFA Fall *Teaching and Learning Excellence Conference*, held October 21-22 in Springfield, I had the opportunity to hear a presentation by Libby Roeger. Libby is an English Instructor at Shawnee CC and is past President of the ICCFA. She is working on her Doctoral degree and has shared her work in the area of metacognition, which is how students are taught to apply their cognitive resources. Her advice to other instructors is to have students not only learn the course content, but examine how they learn it.

I think her message is a good one. Not only should we teach the

“Students may make tremendous strides in the classroom if they learn how to monitor and regulate their learning.”

~ George Schraw

content of our courses, but also how to learn the specific discipline. For many years, I have advocated the “less is more” philosophy by removing less important material and helping students to focus on how to learn Chemistry. I don’t worry that the students are missing the material because I have shown them how to learn the subject. This gives them the ability to teach themselves what I don’t cover in the course. A recent student confirmed this is true by relating his experience over the summer in Organic Chemistry. This former student was not one of my best students—he struggled to get a B out of CHEM 162. He told me that not only was he getting an A in Organic Chemistry, but that other students were coming to him for help. I asked him what was the difference between him and the other students, in this course, and his reply was, “You taught us how to learn Chemistry.”

This is exactly why schools like Alverno College have been successful because they use a form of metacognition through self-assessments. By using self-assessments, students are required to actively reflect on their learning from the day they enter Alverno until the day they leave. I see this emphasis of metacognition in our Nursing program. The students in the program are not only asked to learn the content, but also asked to reflect on the learning process. I’m sure this occurs in other parts of our college.

For those of you who would like to have students develop the “Learning how to Learn” concept, I will share a few strategies. One strategy is to have students keep a learning journal. Each day, a student would reflect on what was learned and how it was learned. A second strategy is to use self-assessments after a particular assignment is returned (sometimes without a grade, but includes instructor comments). A third strategy is to model the learning process in the class. This can be done in a small group or with the entire class.

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Message from the Chair (continued)

For example, you will show students the process to solve a problem. This can be done with test questions after an exam by examining the information needed to solve the problem, then examine how the solution was arrived, followed by examining the logic of the solution.

Other News...

At the ICCFA Conference, it was announced that in February 2004, Dr. Joe Cipfl, CEO of the Illinois Community College Board will retire. Joe has been a true advocate for the Illinois community college system and his leadership, promotion, and lobbying abilities will be missed. The ICCB Board is currently conducting a search for his replacement. I wish to extend my gratitude to Joe for all of his hard work and dedication over the years.

ICCFA awarded four scholarships; one was awarded to a HCC student, Ruth Underhill. The ICCFA scholarships are awarded to students based on a variety of factors including volunteer and community service work.

If you have any ideas, comments, or suggestions for *The Assessment Quarterly* Newsletter, please feel free to email them to me or the editor. If you would like to share your best practices in the classroom, but don't have time to write an article, please contact me or someone on the committee.

R. John Muench, Assistant Professor of Chemistry

Heartland Mathematics Courses Seek to Improve Critical Thinking

By Jennifer J. Swartout, Instructor of English

In math, there is just "one right answer," right?

Well, not exactly. Though perhaps you've heard students say this in reference to why they prefer their math and science courses over Humanities or Social Science courses—where papers or essay exams might seem to demand more pondering of debatable (and, perhaps, frustratingly, "unsolvable") points.

To be fair, in the past, a course in mathematics typically included daily lectures on formulas, strategies, and concepts, which the students then practiced in homework drills to prepare for a major test. Until recently, this was also the case for many math courses at Heartland Community College.

However, the College's efforts to effectively teach and assess critical thinking at all curriculum levels has led to a revamping of mathematics teaching strategies and course design, led by a number of faculty members. According to Allan Saaf, Vice-President of Instruction, math courses at Heartland are moving away from a passive learning model that discourages real problem-solving strategies.

"Instead, we've implemented a far more conceptual approach, where a situation or problem is posed and the students figure out which conceptual model best applies to solve the

problem," Saaf explains.

What this also means is that students can count on working in groups to solve a problem—something that is reflective of the workplace.

More than ever, writing is a major component of getting the problem "right." On a test, the student must demonstrate mathematical knowledge (principles and concepts which result in a solution) and strategic knowledge (identification of important elements of the problem and the use of models, diagrams, symbols and/or algorithms to systematically represent and integrate concepts). Instructors now require students to write an explanation in words by outlining the steps of the solution process and provide a justification for each step.

This approach to teaching and learning mathematical concepts is still relatively new to faculty and students, and the change causes some stress as all adjust to the new approach to learning and assessment. But, Saaf says, it's worth it: "We want our students to leave us with critical thinking skills, no matter what direction their schooling and career takes them."

Reflecting on a Conference Session: A Lesson in Assessment

By Nick Schmitt, Instructor of Psychology

On Friday, October 24, 2003, I attended the ICCFA Fall *Teaching and Learning Excellence Conference* in Springfield. The theme of the conference was *Fostering a Learner-Centered College Classroom*. One of the sessions I attended was titled “*Gen X, Gen Y, and the Boomers: Learning Resources in the Classroom*”. The presenter was Susan Deege from John Wood Community College.

I know that exposure to diversity is valuable for students and instructors. From the session, I expected to learn about teaching strategies that would help me take advantage of the age diversity in the classroom. I didn't get much of that directly from Susan. Rather, she spent the time describing different characteristics of the Traditionalist, Gen X, Gen Y, and Baby-Boomer students. Her presentation strengthened the notion that we are products of the social time in which we live. It was up to me to decide how I could use this information to benefit the quality of instruction that students receive in my classes. Here are just a few characteristics that Susan mentioned during her presentation:

Matures or the Traditionalists (born prior to 1945) prefer information in summary form. They may be more comfortable with instructors who tell them what to know (through lecture).

Boomers (born around 1945 to 1964) may have been more likely to be born into prosperity, and feel that they are “deserving of riches.” They tend to embrace inclusiveness, and they like self-assessments.

Gen Xers (born 1965 to 1980) are fairly technology savvy. They like to do things on their own and they expect immediate gratification. They also crave success on their own terms, are responsive, and enjoy active role-playing. These students are also skeptical, and as a result, they want the whole truth and nothing but the truth.

Gen Yers/Millennials (born 1981 to 2001) want to be seen and heard. They are used to getting lots of attention, and they want to know why, not just how something is done. They also crave change and like convenience. They dislike self-assessments.

The greatest benefit from attending this session actually came to me after I had time to reflect. What can I do to “reach” all of these students, to keep them engaged in active thinking, learning, and participation in the classroom? What can I do to take advantage of this diversity? This was just another

lesson that students learn differently and they have different expectations about the role of the instructor. They prefer to input, process, and output information in a variety of ways. It's no wonder that some of my students want me to lecture more, while others prefer class discussion, research projects, presentations, demonstrations, debates, role-plays, and application exercises.

A variety of instructional methods is great for “reaching” a diverse group of students. It provides students with opportunities to use their strengths, and to strengthen their weaknesses. A student who struggles presenting information in written form may shine brighter if given an opportunity to demonstrate their learning through art. A student whose strength lies in building ideas upon each other may really shine during class discussions or debates, but not in individual activities. Diversity can shine through in the classroom when students have opportunities to shine.

Did students get from these activities what you expected them to get? Did they get something from this that you didn't anticipate, which could benefit them and you as an instructor? Are they learning what has been established in the course objectives?

I am comfortable with the fact that students can learn in a variety of ways, and that they can learn on their own through a variety of activities. I know that I don't have to lecture to them in order for them to learn. Nonetheless, some of them need more structure to guide their learning. How do you know what students are getting from your in-class activities? It's called **assessment**. Assessment doesn't always have to be fancy. Classroom assessment techniques (CATs) can be short, simple, and reflective in nature. But waiting until the end of the unit to assess learning can't tell you anything about the effectiveness of your teaching methods and class activities. These activities might be fun and interesting, but are they effective?

A Multicultural Classroom: Getting to Know Your Students

By Katherine I. Starks-Lawrence, Adjunct Instructor of Business

The ICCFA *Teaching and Learning Excellence Conference* in Springfield offered a session entitled “*Student-Directed Activities in a Multicultural Classroom*.” The presenters were Marty Attiyeh and John Stasinopoulos from the College of DuPage.

Although the session was originally designed for ESL instructors, I came away with some strategies on how to develop activities for students from different cultures. For example, according to Attiyeh and Stasinopoulos, Hispanic students may have a different concept of time and may need extra time to complete homework and exams.

One thing we know about learning is that cultural influences on students’ learning are profound, and similarities in learning styles are likely to exist from a cultural group. Some of the best strategies to enhance the learning in multicultural classrooms include

getting to know the students’ culture and country by talking to them, watching travel videos, reading books and using current-event materials to develop assignments.

An instructor can give students more ownership of their learning by allowing them to share ideas in group settings, by giving extra time for test taking, devising tests students can take home, and using portfolio assessments.

Save the Date ~ HCC 2004 Spring Workshop

January 8, 2004

Details to be announced.

All faculty, full-time and adjuncts,
are encouraged to attend.

Where Evaluation and Assessment Meet

By R. John Muench, Assistant Professor of Chemistry

One of the most frequently asked questions by faculty with regards to assessment is, “I give four exams and a term paper—isn’t that assessment?” The answer is—maybe. It really depends on how you use the exams and term paper (or other assignments).

The first thing that most instructors do with an exam or paper is evaluate it. That is, assign a grade to it based on judgment. But, that same instrument can also be used for assessment of student learning and here are some examples.

In my courses, I give quizzes that are of a show-your-work type and exams that are all multiple choice. For the quizzes, after I grade them I will review them to see if I notice any patterns among the incorrect work. If I do, then at the beginning of the next class session, I will spend time discussing the topic and re-explain the problem. In some cases, I may even rethink how that particular topic is taught and adjust my teaching for the next semester. For the exams, I use the item analysis that is offered through our ParScore system. Once again, I look for patterns of the questions that are missed. If a certain topic or type of question has a low correct response, then usually a similar question will appear on the final exam. During the review for this last exam, I will use

the opportunity to discuss each of the questions again with the emphasis on where most students tend to make their mistakes with the hope that the students will learn from them.

For those of you that assign papers, one way to obtain assessment data might be to develop a rubric. The rubric may assess certain elements within the paper or it might assess the overall product. Regardless, you can go back through each paper and score it against the rubric (the rubric can also be used to assign the grade). Once again, you will want to look for patterns in student work and then report that back to the class as well as reflect on your own teaching.

With regards to the initial question—if all you do is feed your Scantron forms through the scoring machine and assign a grade, then you are only doing evaluation. If, however, you also take the time and effort to analyze student work for commonalities and use that information to improve student work, then you are using the same instrument for both **evaluation and assessment**. Obviously, the latter case takes more work, but remember good assessment practice improves both student and teaching performance. Which is why we are here.

Calendar of Events

December 1, 2003: Proposal Deadline

Oakton Community College in Des Plaines, IL is seeking proposals to present at the Eighth Annual Assessment Fair scheduled March 3, 2004. Deadline to submit proposals is December 1, 2003. For more information contact John Muench, HCC Assessment Committee Chair.

May 30, 2004: Proposal Deadline

The ICCFA, Teaching & Learning Excellence Conference, *The 21st Century College Classroom*, scheduled for November 18-19, 2004, is calling for presentation proposals. For additional information contact Kevin Weston, Rend Lake College by phone at 618-437-5321, ext. 1816 or by e-mail at westonk@ric.edu.

Educational BookShelf

Designing Assessments to Inform and Improve Student Performance

by Grant Wiggins

BookShelf (continued)

Teaching Tips for College & University Instructors

by David Royse

The Learning-Centered College

by Terry O'Banion

Becoming a Critically Reflective Teacher

by Stephen D. Brookfield

The American Community College

by Arthur Cohen and Florence Brawer

NEWSLETTER ARTICLES

The Assessment Committee is seeking articles about research, classroom assessment techniques, rubric development or use for publication in *The Assessment Quarterly* newsletter. Articles can be e-mailed to the editor, Katherine I. Starks-Lawrence at katherine.starks-lawrence@Heartland.edu. Please keep articles to 400 words. *Newsletter is published using The Associated Press Stylebook.*

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