
March 1997 University of Illinois at Urbana-Champaign

ACADEMIC PROGRAMS

From the Office of Associate Dean and Director

20 Precious Minutes

By R. Kirby Barrick, Associate Dean

My commute from campus to home used to be about 20 minutes long during non-rush hour travel times. On some days, that could be a long trip--same freeways, same scenery, same radio station. But on days when I taught a late afternoon class, those were the most valuable 20 minutes I spent all week!

After the class session was finished, I had answered all the students' individual questions, and I had literally dropped all the materials in the middle of my desk, I would head out of the office, jump into my car, and start for home. But my mind was still on class. I frequently found myself reliving the entire session: remembering the good parts, thinking through an answer that made less sense to me now than when I gave it, reviewing the "slow parts" (Why is the Central Limit Theorem so difficult to teach?), remembering that one overhead transparency is difficult to read from the back of the room, recalling the parts that flowed, that I felt good about, that it seemed the students were "with me." While it is a natural tendency to dwell on the bad, there was enough good to keep me going, at least until the next class!

The evaluation of teaching frequently seems to be a controversial subject. Some purport that teaching performance cannot be evaluated. Others offer that the reason teaching performance is not evaluated is because most people have not been trained to evaluate teaching! Most agree that a single measure of performance is probably not sufficient. The most under-used measure is self-evaluation.

Now don't get too excited. Promotion and tenure guidelines will not be changed to rely solely on self-evaluation of teaching as a quality indicator! Typically, formal evaluation is more concerned with what the teacher has done to improve performance in response to peer and student evaluations. So self-evaluation may be

of benefit only to the instructor and the students. Not all bad . . .

How do we assess our own performance?

Typically, we can ask ourselves just a few questions.

What was/were the objectives for the class session? What evidence do I have to indicate that students reached the objectives? What did the students do during the class? What could they have been doing differently that would enhance learning? What did I do during the class? What could I have done differently that would enhance learning?

The next article includes a listing of performance indicators to assess teaching. While all are beneficial to helping improve student learning by improving teaching, self-evaluation may be a new approach for many. Spend a few minutes at your desk, or on the way home, right after class, thinking about how you can do even better the next time.

Sources of Information for Assessing Teaching Performance

Adapted from Peter Sedlin,

Successful Faculty Evaluation Programs

FROM THE STUDENTS

- ICES forms for each course taught
- teacher/student interactions
- formal and informal evaluations of student advising
- mid-course evaluations
- student achievement in the course

FROM FACULTY PEERS

- review of teaching materials, including assignments, handouts, tests
- mastery of current, research-based content
- classroom performance, including clarity, variability, enthusiasm, business-like behavior, student opportunity to learn

FROM ADMINISTRATORS

- exit interviews of students
- classroom observation
- improvement based upon set goals
- recognition by the profession and/or the academy

FROM THE INSTRUCTOR

- self-appraisal
- change in response to student and peer evaluations

Some Basic Principles of the Teaching-Learning Process Substantiated by Research

J. Robert Warmbrod, Presidential Professor Emeritus, The Ohio State University

1. Learning proceeds much more rapidly and is retained much longer when that which is learned possesses meaning, organization, and structure that are clear to the students.
2. "Directed" learning is more effective than "undirected" learning. In the development of concepts, the teacher must present clues for the purpose of directing the students to the successful discovery and application of the concepts, principles, understandings, and relationships.
3. Readiness for learning is a prerequisite. Any type of curriculum arrangement (organization) which is to be successful must provide experiences (content) which begin where the learner is.
4. Students must be motivated to learn. Individuals possess some basic physical needs and some personality or social needs--the desire for recognition, security, response, and new experiences. The wants, interests, and motives of students should be identified, and learning activities which take these into account should be provided.
 - a. An effective means of motivation is the setting of goals by the group which leads to a greater identification of students with learning objectives.
 - b. Success in achievement is one of the strongest motivation forces. Students who are successful and who therefore derive satisfaction from a learning activity are motivated toward additional learning.
 - c. The most effective effort is put forth by students when they attempt tasks which fall in the "range of challenge"--not too easy and not too hard--where success seems quite possible but not certain.
5. Behaviors which are rewarded (reinforced) are more likely to recur. Reward, to be most effective, must follow almost immediately after the desired behavior and be clearly connected with that behavior in the mind of the learner.

6. Sheer repetition without indications of improvement or any kind of reinforcement (reward) is a poor way to attempt to learn. When students are aware of their learning progress, their performance will be superior to what it would have been without such knowledge.

7. The best kind of practice is that which occurs in a functional educational experience. Under such conditions, students use skills and apply facts and principles previously learned and thus maintain learning in a meaningful context.

8. The worth of the lecture method is dependent on the objectives desired. If the objective is to transmit knowledge about some topic, the lecture method is efficient. If the objective is to develop problem-solving abilities and attitude of inquiry, discussion is superior.

9. The use of group discussion has been shown to bring more ideas into the classroom, to make reading more interesting and more discriminating, and to result in a definite gain in the understanding of problems by students.

10. "Problem-oriented" approaches to teaching improve learning. The important thing is that the student in his learning, and in the teaching that accompanies it, should inquire into rather than be instructed in the subject matter.

11. What is learned is most likely to be available for use if it is learned in a situation much like that in which it is to be used and immediately preceding the time when it is needed. To attain maximum transfer of learning:

a. Bring out the feature to be transferred. The "thing" to be transferred from one experience to another could be a fact, a method, a general principle, an attitude, or a way of life.

b. Develop meaningful generalizations. Transfer is more likely to take place when the thing to be transferred is a generalization, a general rule, or a formula. It is important that the students become clearly aware of the formula, rule, or generalization to be transferred.

c. Whenever a principle or generalization is to be transferred, it is very important to use a variety of experiences to develop the generalization.

d. Practice the application of the "thing" to be transferred to other fields. Provide students practice in transfer. Just as students can learn to learn, so they may learn to transfer.

A teacher affects eternity; he can never tell where his influence stops.

--Henry Adams, Historian

Key Words of Teaching - Learning

Meaning, organization, structure
Directed learning
Readiness
Wants, needs, interests, aspirations of learner
Reward, reinforce
Application
Objectives
Problem-focused, inquire into
Real-life
Teach for transfer

Preparing Instructional Objectives

From Preparing Instructional Objectives by Robert F. Mager, 1984 and Teaching Agriculture Through Problem Solving by Crunkilton and Krebs, 1982

"Instruction is effective to the degree that it succeeds in changing students in desired directions and not in undesired directions."

To plan for effective instruction, written objectives must contain three elements: performance, conditions, and criterion. Objectives are written from the standpoint of the student, not the course or the instructor.

Performance--what the learner is able to do as a result of the instruction

Conditions--important conditions under which the learner is expected to perform

Criterion--the quality or level of performance that will be considered acceptable

An objective is only as good as the performance verb it contains. The literature uses a variety of terms to describe objectives: behavioral objectives, student or learner objectives, performance objectives. Once the instructor accepts the fact that the objective is based on the learner, the "type" of objective is really not very important. Education-ese need not get in the way of writing good objectives.

Most educators are familiar with Benjamin Bloom's "Taxonomy of Educational Objectives," in which Bloom identified three domains of learning: Cognitive,

Affective and Psychomotor. Further, the domains of the Cognitive Taxonomy illustrate a hierarchy of learning from the simple to the complex: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. Most educators and psychologists agree that learning is more satisfactory when it involves the higher domains of cognition.

Putting the two concepts together, objectives should be clear in terms of performance, conditions and criterion, and should contain an identification of performance that is higher on the cognitive scale. To achieve that goal, specific action verbs must be included in the objective to indicate the desired performance. Here is a list of action verbs for the performance section of an instructional objective for each of the six cognitive domains of learning.

COGNITIVE DOMAIN

Knowledge Comprehension Application

acquire associate apply
count classify calculate
define compare change
draw compute classify
identify contrast complete
indicate convert demonstrate
label describe discover
list differentiate employ
match discuss examine
name distinguish illustrate
outline estimate manipulate
point explain operate
quote extrapolate practice
read interpret prepare
recall interpolate produce
recite predict relate
recognize rewrite solve
record translate use
repeat utilize
state
tabulate
trace
write

Analysis Synthesis Evaluation

analyze arrange appraise
construct categorize assess
detect combine compare
diagram construct critique

differentiate create determine
explain design evaluate
infer develop grade
outline explain judge
separate formulate justify
subdivide generate measure
summarize generalize rank
integrate rate
organize recommend
plan select
prepare support
prescribe test
produce
propose
rearrange
reconstruct
specify
summarize

Examples of Objectives for a Unit in Establishing a Lawn

These examples are adapted from Crunkilton and Krebs, 1982. Only performance is included to illustrate that part of writing objectives. All are written in the cognitive domain.

1. List the steps to follow in preparing a seedbed for a home lawn. (Knowledge-to list)
2. Indicate the tools needed to establish a home lawn. (Knowledge-to indicate)
3. Select the appropriate variety of seed for various home lawn situations. (Evaluation-to select)
4. Interpret soil test data. (Comprehension-to interpret)
5. Apply the soil test data in determining fertilizer and /or lime requirements. (Application-to apply)
6. Compare the advantages and disadvantages of the methods of seeding lawns. (Comprehension-to compare)
7. Explain why mulches are used. (Synthesis-to explain)

8. Solve problems for giving estimates on establishing a home lawn. (Application-to solve)

You may note that some of the verbs in the lists on page three appear in more than one category. That should not be a concern. The learner must achieve some degree of success in knowledge and comprehension objectives before moving on to the more complex objectives. (Remember that one of the teaching-learning principles is readiness!) But to expect students to learn satisfactorily when only knowledge and comprehension are the objectives is short-sighted. (Remember that application, problem-focus, real-life and teach for transfer are also teaching-learning principles!)

Learning was so dangerous: for how could one tell in advance, while still ignorant, whether a thing could ever be unlearned or forgotten, or if, once known and named, it would invalidate by its significance the whole of one's former life, all of those years wiped out, convicted of one blow, retrospectively darkened by a sudden light.
--Margaret Drabble, Author

A successful teaching experience of the instructor and learning experience for the student begins with well-written objectives that reflect accepted principles of teaching and learning.



ACADEMIC PROGRAMS is a publication of the Office of Academic Programs,
College of ACES, University of Illinois at Urbana-Champaign
Office of Academic Programs College of ACES 104 Mumford Hall, MC-710 1301
W. Gregory Drive Urbana, IL 61801