Knowing When You Have It Begins With Defining What It Is!

Developing Goals & Objectives Workshop, 11/16/2005

Vocabulary:

- **Learning Objective:** Clear, meaningful, and measurable statements of student performance
  Statement of what we want students to be able to do/know/feel (desired outcomes)
- **Outcome:** The actual results we get from students after instruction (actual behaviors)
- **Goal:** Broad statements of long-term intentions (desired long-term impacts)
- **Standards:** Criteria for determining if a goal or learning objective has been met

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Workshop Goal: **To enable participants to develop high-quality objectives for their courses, departments, and the General Education program**

Workshop Objectives:

1. Participants will list at least two reasons why it is important to have well-written GenEd objectives
2. Participants, when asked, will recall at least 3 of the 4 characteristics of effective objectives
3. Participants will analyze an objective and determine if it has the 4 characteristics of effective objectives
   a. Clarity (the Stranger test)
   b. Meaningfulness (the So What test)
   c. Measurability (the Prove It test)
   d. Focus on students (Focus test)
4. Participants, working in groups, will make improvements to General Education objectives
5. Participants will produce new effective objectives for GenEd

To meet these objectives, the workshop will consist of the following activities:

1. An explanation of the importance of having effective General Education objectives (accreditation, accountability, focused planning)
2. A review of the current General Education objectives (how they were developed and organized)
3. An explanation of the four characteristics of effective objectives
   a. Explanation of the characteristic (why it is important for objectives to have the characteristic)
   b. How to evaluate an objective to see if it has the characteristic
   c. Examples of objectives that do or do not have the characteristic
4. Work in groups to evaluate a set of General Education objectives
5. Work in groups to draft improved General Education objectives
6. Share and evaluate improved General Education objectives
7. Work in groups to develop new General Education objectives

1. Why do we need objectives?

A. Course Development & Instructional Design

Facilitates the development of courses aligned with the department, GenEd, or University goals/mission
Aids in determining if a course fits in the General Education program
Guide in designing instructional strategies to obtained the desired outcomes
Enhances the possibility to create focused independent learning materials
Makes teaching more directed and organized
Forces faculty to think carefully about what is important in their courses
Helps avoid unnecessary repetitions in teaching
Causes careful thinking about what is to be accomplished through instruction

B. Communication

Inform students and faculty of the purpose of the course
Guide for the student to focus learning and prioritize; allows for self-assessment
Informs the public of what we value
Helps foster relationships with students (the instructor is viewed less in an adversarial role)
Communicates to colleagues what is taught, thus enhancing collaboration
Bridges the gap between vague, but relevant & important, institutional goals and actual instruction
Provides models for the creation of objectives by students
Provides feedback to students as objectives are accomplished

C. Assessment

Guides the development of assessment instruments
Guides in evaluating the effectiveness of a course, a program, or a teaching strategy
Provides guidance in measuring student attainment of General Education goals

D. Accreditation

Will developing high-quality learning objectives cause an increase in student achievement?

Two articles published in 1972:

Behavioral Objectives? Yes!	Objectives are effective in increasing learning and retention
Behavioral Objectives? No!	There is no significant difference in achievement due to objectives

The research regarding the effectiveness of explicit learning objectives is mixed. However, most research does not investigate the quality of the written objectives. **Furthermore, almost all research into student achievement assumes learning objectives have already been developed (learning objectives are needed before valid assessment can take place)**

2. Review of current General Education objectives

* **General Education Program Mission, Philosophy, and Goals (see hand-out)**

* **General Education Learning Objectives:**

Cognitive Domain = Understanding/Content ("Know") = Knowing Something

Refers to intellectual learning and problem solving (memory, thinking, reasoning)

Taxonomy: Knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom)

GenEd: Explain the goals of science, and both describe and apply the methodology that scientists use in their work

Outside: Students will Explain the a, r, and t parameters of the exponential function $f(t) = a(1+r)^t$

Affective Domain = Attitudes/Values ("Think About") = Feeling Something

Refers to the emotions and value system of a person

Taxonomy: Receiving, responding, valuing, organizing, and characterizing by a value
Krathwohl, D. et al. (1956). Taxonomy of educational objectives. Handbook II: Affective domain. New York: David McKay

GenEd: Accept the consequences of their own actions and words

Outside: The student will demonstrate a commitment to improving case presentation skills by regularly seeking feedback on presentations

Psychomotor Domain = Skills ("Do") = Doing Something

Refers to movement or mental activities

Taxonomy: Imitate, manipulate, precision, articulation, naturalization
Dave, R. (1967). *Psychomotor domain*. Berlin: International Conference of Educational Testing

GenEd: Successfully evaluate the quality of a source in terms of bias, reliability, timeliness, authority

Outside: The student will set up, focus, and use a microscope properly during an investigation of pond water

Objective: Clear, meaningful, and measurable statements of student performance (as a result of learning)

Clear: Easily understood by other faculty and students

Stranger Test: Faculty members who did not write the objective are able to (1) identify ways to teach to the objective and (2) identify ways to measure student achievement of the objective.

Students clearly understand what outcomes they are supposed to achieve as a results of General Education courses.

Tips:
- Keep the objective concise. Be brief, clear, and specific.
- Objectives should focus on a single outcome. This allows us to determine if an objective has been met without having to distinguish between partial completion and success.

Examples:

GenEd: Use writing as a tool for learning
Write a paper with graphs, tables, and pictures using word-processing skills
Explain the goals of science and both describe and apply the methodology scientists use in their work

Theater: To develop a conversant knowledge of theatre history from Ancient Greeks to the contemporary
To develop a better understanding of humanity

English: English majors should know a variety of critical approaches to literature
Define and explore a meaningful critical problem, research primary and secondary sources, and formulate a position on a text

Political Science: Gain an entry-level knowledge of police, courts, juvenile justice, corrections, and prevention-security practices

Languages: To provide students with a strong understanding of grammar. This comprises acquiring expertise in both the target language and in the native language. We want our students to graduate with a sufficient foundation in grammar in order to be able to understand, write and speak the target language in a variety of situations.

Meaningful: Consensus that the intended learning outcome is important and realistic

So What Test: Faculty members who did not write the objective agree that the skill / knowledge / attitude / value indicated in the objective is important and relevant for students to learn.

Students recognize the relevance and importance of each intended outcome.

Tips:
- Ask yourself, "Is the behavior specified in this objective important for all students to demonstrate after completing a general education course?"
- 'Mechanics' objectives (narrowly stated) are unimportant; vague objectives (generally stated) are not measurable
- Objectives should not be limited to lower-level cognitive skills

Examples:

GenEd: Develop and make a presentation using presentation software
Recognize that the basis for knowledge in the social sciences is grounded in the application of the scientific method to behavior

Biology: Each student will possess a repertoire of basic laboratory skills necessary for entry into active participation as a laboratory or field biologist

Chemistry: To develop the student's ability to access the chemical literature

Sociology: The students will contrast, compare, apply, and evaluate a broad range of alternative world views, domain assumptions, and theoretical perspectives through presentations, class discussions, written papers and essays, written exams, and projects

Theology: An awareness of and appreciation for the rich tradition of the Judeo-Christian Catholic tradition from biblical/patristic sources to the present, emphasizing the most recent theological/pastoral synthesis of Vatican Council II.

Measurable: The objective should denote an observable action or the creation of an observable product.
(1) The desired student behavior should be observable (what students will be able to do)
(2) The conditions of performance should be stated (how students will be able to do it)
(3) The performance criteria should be stated (minimally acceptable level of performance)

Prove It Test: Faculty members who did not write the objective are able to identify evidence they would use to prove an objective was either met or not met. Faculty members should also clearly understand the conditions under which the student behavior will be observed along with criteria for determining if the observed behavior meets the objective.

Students should clearly understand what outcomes they are supposed to achieve and under what conditions.

Tips:
- Ask yourself, "What evidence could I use to prove a student has met this objective?"
- Use active verbs: recognize, construct, evaluate, identify, analyze, write, describe, apply, discuss, predict
- Avoid vague verbs: appreciates, understands, learns, knows, comprehends, familiarizes, studies, is aware of, covers, gains knowledge of
- If a "understand" is used, make sure you state how "understanding" will be demonstrated
- Conditions: Upon request, students will… Given (an object) the student will… On an essay…
- Criteria: …with 80% accuracy … at a proficient level on the rubric

Examples:

GenEd: achieve <u>personal</u>, academic, and professional goals using written communication

express the ethical implications of human communication

<u>respect</u> others and what they have to say

<u>appreciate</u> the right to take an adversarial stance against bodies of information in order to test them

recognize the rich tradition of the Judeo-Christian/Catholic community: both historical or classical sources and contemporary ecumenical perspectives flowing from Vatican II

Mathematics: Understand the concepts and techniques of core subjects: calculus, linear algebra, analysis and statistics.

MCJ.: Understand the relationship between crime theory, crime policy, & professional practice

MOL: Learn multiple theoretical frameworks to better understand themselves, their strengths and weaknesses as leaders, and how to enhance their personal development as leaders.

Outside: Given four works of short fiction of contrasting genres, the student will match each work with its correct genre.

Student Performance: **Objectives should describe what behaviors we expect from students after instruction (knowledge, skills, attitudes, values, beliefs). Objectives state the intended learning outcome, behavior, or product of instruction; not what form instruction will take.**

Focus Test: Does the objective describe a student behavior (good) or a teacher behavior (bad)? The objective should not address the instruction that takes place prior to the behavior.

Tips: Make sure the objective states what *students* should be able to do, produce, or demonstrate

Examples:

GenEd: Use alternative methods of finding information

Physics: To develop the student's ability in accessing reference materials

Political Science: Majors will be encouraged to develop communication skills essential to political participation

History: To offer students opportunities for advanced study in world civilization, American History, and the history of Christianity

Music: To provide a musically rich performing and listening environment for our student-musicians

Chemistry: To provide the student with both a theoretical and practical knowledge of the four main areas of chemistry: inorganic, organic, analytical and physical, and offer laboratory experiences enabling the student to obtain the skills needed in a modern chemical laboratory

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_____ Is the learning objective clear? Can you identify ways in which the objective could be addressed?

_____ Is the learning objective meaningful? Is the outcome important (non-trivial)? Is it realistic?

_____ Does the learning objective state the conditions under which the behavior will be observed?

_____ Can you easily identify ways to determine if an objective has been met? Does it use an action verb?

_____ Does the learning objective specify the criteria for the minimum level of acceptable performance?

_____ Is the learning objective student-centered?

_____ Do the objectives include all important outcomes of the course/department/program?

_____ Are the objectives aligned with the mission of the department/college/university?

Action Verbs: (Dr. Bob Kizlik, http://www.adprima.com/verbs.htm)

Domain	Emphasis	Relevant Verbs
Cognitive	Knowledge	Recall, identify, recognize, acquire, distinguish, state, define, name, list, label, reproduce, order
Cognitive	Comprehension	Translate, extrapolate, convert, interpret, abstract, transform, select, indicate, illustrate, represent, formulate, explain, classify, comprehend
Cognitive	Application	Apply, sequence, carry out, solve, prepare, operate, generalize, plan, repair, explain, predict, demonstrate, instruct, compute, use, perform, implement, employ, solve
Cognitive	Analysis	Analyze, estimate, compare, observe, detect, classify, discover, discriminate, explore, distinguish, catalog, investigate, breakdown, order, determine, differentiate, dissect, contrast, examine, interpret
Cognitive	Synthesis	Write, plan, integrate, formulate, propose, specify, produce, organize, theorize, design, build, systematize, combine, summarize, restate, argue, discuss, derive, relate, generalize, conclude, produce
Cognitive	Evaluation	Evaluate, verify, assess, test, judge, rank, measure, appraise, select, check, judge, justify, evaluate, determine, support, defend, criticize, weigh, assess
Affective		Agree, ask, avoid, choose, differentiate, justify, support, participate, cooperate, praise, help, offer, join
Psychomotor		Adjust, repair, taste, bend, measure, perform, operate, use, move

APPLY A RULE: To state a rule as it applies to a situation, object or event that is being analyzed. The statement must convey analysis of a problem situation and/or its solution, together with the name or statement of the rule that was applied.

ASSESS: To stipulate the conditions by which the behavior specified in an objective may be ascertained. Such stipulations are usually in the form of written descriptions. For obvious reasons, assess is rarely used as a verb in behavioral objectives at the elementary school level.

CLASSIFY: To place objects, words, or situations into categories according to defined criteria for each category. The criteria must be made known to the student.

COMPOSE: To formulate a composition in written, spoken, musical or artistic form.

CONSTRUCT: To make a drawing, structure, or model that identifies a designated object or set of conditions.

DEFINE: To stipulate the requirements for inclusion of an object, word, or situation in a category or class. Elements of one or both of the following must be included: (1) The characteristics of the words, objects, or situations that are included in the class or category. (2) The characteristics of the words, objects, or situations that are excluded in the class or category. To define is to set up criteria for classification.

DEMONSTRATE: The student performs the operations necessary for the application of an instrument, model, device, or implement. NOTE: There is a temptation to use demonstrate in objectives such as, "the student will demonstrate his knowledge of vowel sounds." As the verb is defined, this is improper use of it.

DESCRIBE: To name all of the necessary categories of objects, object properties, or event properties that are relevant to the description of a designated situation. The objective is of the form, "The student will describe this order, object, or

event," and does not limit the categories that may be used in mentioning them. Specific or categorical limitations, if any, are to be given in the performance standards of each objective. When using this verb in an objective, it is helpful to include a statement to the effect of what the description, as a minimum, must reference.

DIAGRAM: To construct a drawing with labels and with a specified organization or structure to demonstrate knowledge of that organization or structure. Graphic charting and mapping are types of diagramming, and these terms may be used where more exact communication of the structure of the situation and response is desired.

DISTINGUISH: To identify under conditions when only two contrasting identifications are involved for each response.

ESTIMATE: To assess the dimension of an object, series of objects, event or condition without applying a standard scale or measuring device. Logical techniques of estimation, such as are involved in mathematical interpolation, may be used. See MEASURE.

EVALUATE: To classify objects, situations, people, conditions, etc., according to defined criteria of quality. Indication of quality must be given in the defined criteria of each class category. Evaluation differs from general classification only in this respect.

IDENTIFY: To indicate the selection of an object of a class in response to its class name, by pointing, picking up, underlining, marking, or other responses.

INTERPRET: To translate information from observation, charts, tables, graphs, and written material in a verifiable manner.

LABEL: To stipulate a verbal (oral or written) response to a given object, drawing, or composition that contains information relative to the known, but unspecified structure of these objects, drawings, or compositions. Labeling is a complex behavior that contains elements of naming and identifying.

LOCATE: To stipulate the position of an object, place, or event in relation to other specified objects, places, or events. Ideational guides to location such as grids, order arrangements and time may be used to describe location. Note: Locate is not to be confused with IDENTIFY.

MEASURE: To apply a standard scale or measuring device to an object, series of objects, events, or conditions, according to practices accepted by those who are skilled in the use of the device or scale.

NAME: To supply the correct name, in oral or written form for an object, class of objects, persons, places, conditions, or events which are pointed out or described.

ORDER: To arrange two or more objects or events in accordance with stated criteria.

PREDICT: To use a rule or principle to predict an outcome or to infer some consequence. It is not necessary that the rule or principle be stated.

REPRODUCE: To imitate or copy an action, construction, or object that is presented.

SOLVE: To effect a solution to a given problem, in writing or orally. The problem solution must contain all the elements required for the requested solution, and may contain extraneous elements that are not required for solution. The problem must be posed in such a way that the student that the student is able to determine the type of response that is acceptable.

STATE A RULE: To make a statement that conveys the meaning of the rule, theory or principle.

TRANSLATE: To transcribe one symbolic form to another of the same or similar meaning.