My Students Will Be Able To

Developing Quality Learning Objectives

Workshop Summary

This workshop will model learning objectives and Bloom's Taxonomy through a series of group/peer activities. Primarily, students will have a handout of sample learning objectives that they will review, edit, evaluate and improve. The instructor will give two short presentations. The first will the cover the basic structure of learning objectives, and the second will describe Bloom's Taxonomy.

Discussion

DISCUSS
Why are goals useful?

Q:/ Why are learning objectives useful?

Prompts:

- What is the difference between goals, objectives, and performance tasks?
- How do clear learning objectives impact lesson-planning?
  - Selection of content
  - Development of an instructional strategy
  - Development and selection of instructional materials
  -
- How do students know what is expected from them?
- How do you assess your course?
- How do you assess your students?

Learning Objectives

The Process Behind Learning Objectives

Knowledge: After a brief presentation on learning objectives, students will be able to define the four main parts of a learning objective.

Before determining your learning objectives, it is often useful to brainstorm the topics and activities you wish to cover or incorporate into your course. Brainstorming is a tool that can help you see your content in a new light. (It is often useful to find a colleague with five minutes to spare and brainstorm in a group setting.) Once the topics are on paper, review them and reduce them to a manageable and coherent set.

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Some organizations provide an established curriculum that must be completed within the scope of a semester, a class or workshop. In these situations, it is useful to flesh out the content as much as possible and brainstorm for the most effective way to present the information to your students.

Notes:
If you are developing an online course, you may find activities could potentially loose their impact if translated to an online environment. Before eliminating elements from your content set, ask yourself the *pedagogical purpose* behind incorporating said elements in a face-to-face class and research online alternatives that fulfill the same *purpose* or help students accomplish the same *learning objective.*

Discussion

DISCUSS
What is the difference between learning objectives and learning goals?

Q:/ What is the difference between learning objectives and learning goals?

Prompts:

- Goals are broad objectives are narrow.
- Goals are general intentions; objectives are precise.
- Goals are intangible; objectives are tangible.
- Goals are abstract; objectives are concrete.
- Goals can't be validated as is; objectives can be validated.[1]

Learning Goals & Objectives

After completing a thorough brainstorming session, write down the general overarching learning goals that students should accomplish in order to successfully pass the course. These goals will ideally address higher thinking skills, rather than focus on specific content knowledge.

Take these goals and expand upon them in the following three categories:
Basic (i.e. goals that the average student must accomplish in order to pass the course)
Supplemental (i.e. goals that the above-average student can accomplish in order to gain a desirable grasp of the course)
Advanced (i.e. goals that the excellent student will accomplish due to high motivation and interest in the course)

[1] http://edweb.sdsu.edu/courses/EDTEC540/objectives/Difference.html

After you have grouped your goals and structured them into your course outline, turn your attention to the specific learning objectives for each lesson. Successful learning objectives explicitly define the following ***four*** components:

1. **The who** – An effective learning objective is student-centered

   The student…

2. **The condition** –An effective learning objective highlights the conditions under which a student is expected to perform the task. These conditions will describe the situation, aids, references, and/or tools provided to the student.[2]

   … after an (activity, explanation, discussion, demonstration, etc) on [topic]…

3. **The behavior** - An effective learning outcome will describe an observable behavioral outcome. It is vital to choose a verb that targets the nature and level of performance expected.

   …will be able to [insert action verb]

4. **The criteria** - An effective learning outcome helps a student clarify expectations on behalf of the instructor, as well as indicate how performance will be measured/assessed.

   … [insert measurable outcome such as: 80%, 2 supporting statements, three out of four correct, etc.]

Comprehension: After reviewing a handout with 10 sample learning objectives, students will be able to identify one sample objective that models the correct four-part format and 9 sample objectives that do not.

TASK
Determine which objectives are correct.

Exercise

Review the handout provided and identify which of the objectives listed can be considered successful learning objectives and which cannot.

[2] http://captain.park.edu/facultydevelopment/writing_learning_objectives.htm

Valuable Questions to Ask:

Does the learning objective stem from a course goal or objective?
Is the learning objective measurable?
Does the learning objective target one specific aspect of expected performance?
Is the learning objective student-centered?
Does the learning objective utilize an effective, action verb that targets the desired level of performance?
Do learning objectives measure a range of educational outcomes?
Does the learning objective match instructional activities and assessments?
Does the learning objective specify appropriate conditions for performance?
Is the learning objective written in terms of observable, behavioral outcomes?

[3]

Application: After successfully identifying which objectives are non-examples, students will collaboratively be able to edit the 9 non-examples provided in a handout, ensuring that each objective contains "the who", "the condition", "the behavior" and "the criteria".

TASK
Work in groups and edit the objectives from the handout.

Exercise

In pairs, review the list of non-examples and convert them into successful learning objectives by inserting the missing component(s).

Bloom's Taxonomy

Reading

Following the 1948 Convention of the American Psychological Association, B S Bloom took a lead in formulating a classification of "the goals of the educational process". Three "domains" of educational activities were identified: the Cognitive Domain, the Affective Domain and the Psychomotor Domain.

The first of these, the Cognitive Domain, involves knowledge and the development of intellectual attitudes and skills

Eventually, Bloom and his co-workers established a hierarchy of educational objectives, which is generally referred to as Bloom's Taxonomy, and which

[3] http://captain.park.edu/facultydevelopment/writing_learning_objectives.htm

attempts to divide cognitive objectives into subdivisions ranging from the simplest behaviour to the most complex.

Knowledge.

Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.

Examples of learning objectives at this level are: know common terms, know specific facts, know methods and procedures, know basic concepts, know principles.

Comprehension

Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.

Examples of learning objectives at this level are: understand facts and principles, interpret verbal material, interpret charts and graphs, translate verbal material to mathematical formulae, estimate the future consequences implied in data, justify methods and procedures.

Application

Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.

Examples of learning objectives at this level are: apply concepts and principles to new situations, apply laws and theories to practical situations, solve mathematical problems, construct graphs and charts, demonstrate the correct usage of a method or procedure.

Analysis

Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the

identification of parts, analysis of the relationship between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.

Examples of learning objectives at this level are: recognize unstated assumptions, recognises logical fallacies in reasoning, distinguish between facts and inferences, evaluate the relevancy of data, analyse the organizational structure of a work (art, music, writing).

Synthesis

Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structure.

Examples of learning objectives at this level are: write a well organized theme, gives a well organized speech writes a creative short story (or poem or music), propose a plan for an experiment, integrate learning from different areas into a plan for solving a problem, formulates a new scheme for classifying objects (or events, or ideas).

Evaluation

Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

Examples of learning objectives at this level are: judge the logical consistency of written material, judge the adequacy with which conclusions are supported by data, judge the value of a work (art, music, writing) by the use of internal criteria, judge the value of a work (art, music, writing) by use of external standards of excellence.

Taken from: University of Capetown, South Africa
http://web.uct.ac.za/projects/cbe/mcqman/mcqappc.html

Bloom's Taxonomy: Psychomotor Domain

Modification of works by Simpson, Gronlund, and others

Descriptors of Major Categories in the Psychomotor Domain	*Illustrative Verbs for Stating Objectives*
1. Imitation - early stages in learning a complex skill, overtly, after the individual has indicated a readiness to take a particular type of action. Imitation includes repeating an act that has been demonstrated or explained, and it includes trial and error until an appropriate response is achieved.	**Imitation** - begin, assemble, attempt, carry out, copy, calibrate, construct, dissect, duplicate, follow, mimic, move, practice, proceed, repeat, reproduce, respond, organize, sketch, start, try, volunteer
2. Manipulation - individual continues to practice a particular skill or sequence until it becomes habitual and the action can be performed with some confidence and proficiency. The response is more complex than at the previous level, but the learner still isn't "sure of him/herself."	**Manipulation** - (same as imitation), acquire, assemble, complete, conduct, do, execute, improve, maintain, make, manipulate, operate, pace, perform, produce, progress, use
3. Precision - skill has been attained. Proficiency is indicated by a quick, smooth, accurate performance, requiring a minimum of energy. The overt response is complex and performed without hesitation.	**Precision** - (same as imitation and manipulation), achieve, accomplish, advance, automatize, exceed, excel, master, reach, refine, succeed, surpass, transcend
4. Articulation - involved an even higher level of precision. The skills are so well developed that the individual can modify movement patterns to fit special requirements or to meet a problem situation.	**Articulation** - adapt, alter, change, excel, rearrange, reorganize, revise, surpass, transcend
5. Naturalization - response is automatic. The individual begins to experiment, creating new motor acts or ways of manipulating materials out of understandings, abilities, and skills developed. One acts "without thinking."	**Naturalization** - arrange, combine, compose, construct, create, design, refine, originate, transcend

Taken from:
http://www.olemiss.edu/depts/educ_school2/docs/stai_manual/manual9.htm

Bloom's Taxonomy: Affective Domain (Modification based on works of Kibler, et al., and Gronlund)

Descriptors of the Major Categories in the Affective Domain	Illustrative Verbs
1. Receiving – willingness to receive or to attend to particular phenomena or stimuli (classroom activities, textbook, assignment, etc.). Receiving has been divided into three subcategories: awareness, willingness to receive, and controlled or selected attention. From the teaching standpoint, receiving is concerned with getting, holding, and directing the student's attention.	**1. Receiving** – acknowledge, ask, attend, be aware, choose, describe, follow, give, hold, identify, listen, locate, name, receive, reply, select, show alertness, tolerate, use, view, watch
2. Responding – refers to active participation on the part of the student. The student is sufficiently motivated not to just be 1.2 Willing to attend, but is actively attending. Responding indicates the desire that a student has become sufficiently involved in or committed to a subject, activity, etc., so as to seek it out and gain satisfaction from working with it or engaging in it.	**2. Responding** – agree (to), answer, ask, assist, communicate, comply, consent, conform, contribute, cooperate, discuss, follow-up, greet, help, indicate, inquire, label, obey, participate, pursue, question, react, read, reply, report, request, respond, seek, select, visit, volunteer, write
3. Valuing – the student sees worth or value in the subject, activity, assignment, etc. An important element of behavior characterized by valuing is that it is motivated, not by the desire to comply or obey, but by the individual's commitment to the underlying value guiding the behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value clearly identifiable	**3. Valuing** – accept, adopt, approve, complete, choose, commit, describe, desire, differentiate, display, endorse, exhibit, explain, express, form, initiate, invite, join, justify, prefer, propose, read, report, sanction, select, share, study, work
4. Organization – bringing together a complex of values, possible disparate values, resolving conflicts between them, and beginning to build an internally consistent value system. The individual sees how the value relates to those already held or to new ones that are coming to be held. The integration of values is less than harmonious; it is a kind of dynamic equilibrium that is dependent upon salient events at a specific point in time.	**4. Organization** – adapt, adhere, alter, arrange, categorize, classify, combine, compare, complete, defend, explain, establish, formulate, generalize, group, identify, integrate, modify, order, organize, prepare, rank, rate, relate, synthesize, systemize

5. Characterization by a Value or Value Complex – internalization of values have a place in the individual's value hierarchy. The values have controlled one's behavior for a sufficiently long period of time to have developed a characteristic "life style." The behavior is pervasive, consistent, and predictable.	**5. Characterization** – act, advocate, behave, characterize, conform, continue, defend, devote, disclose, discriminate, display, encourage, endure, exemplify, function, incorporate, influence, justify, listen, maintain, modify, pattern, practice, preserve, perform, question, revise, retain, support, uphold, use

Taken from:
http://www.olemiss.edu/depts/educ_school2/docs/stai_manual/manual9.htm

Analysis: After a short reading on Bloom's Taxonomy, students will be able to classify the edited objectives from their group activities into "knowledge", "comprehension", "application", "analysis", "synthesis", or "evaluation".

Exercise

TASK
Classify the objectives into each of the six levels of Bloom's Taxonomy

In pairs, using the list of verbs provided by the instructor, classify the objectives listed in the handout into each of the six levels of Bloom's Taxonomy.

Prompts:

- Determine if each of the learning objectives contains the four basic components discussed previously.

Synthesis: After classifying the edited learning objectives from their handouts into each of the levels of Bloom's Taxonomy, students will find that one level of the taxonomy is not represented. Students will be able to create 2 well-formulated learning objectives to fill this gap.

Exercise

TASK
Write two objectives for the missing level of Bloom's Taxonomy

In pairs, review the classified objectives and identify which category is not represented. Write two well-formulated objectives to fill this gap.

Evaluation: Students will critique the learning objectives completed by a peer, based on the components ("the who", "the condition", "the behavior", "the criteria") and the appropriateness of the learning objective to the level of Bloom's Taxonomy.

Exercise

TASK
Critique learning objectives developed by peers

As a group, present the learning objectives developed in the previous exercise and discuss whether or not they satisfy Bloom's Taxonomy.