



Learning
Outcomes
Workbook

Student
Services

How to write Learning Outcomes

Academic
Affairs
March 2009

Overview of the Learning Outcomes Workbook

This workbook will serve as your introduction to the concept of *learning outcomes*. It was designed to provide a broad introduction to learning outcomes and serve as a base for further study into the subject. The workbook includes:

- A definition of learning outcomes
- Guidance on how to write learning outcomes
- Support for developing learning outcomes

Learning Outcomes at PBCC

What are Learning Outcomes?

What exactly is a “learning outcome”? Learning outcomes are statements that indicate what is expected that the student will be able to do upon completion of an activity, course, program, or degree. Although relatively new to colleges accredited under the Southern Association of Colleges and Schools (SACS), the learning outcomes approach has been an integral part of accreditation standards in western states such as California, and in nations such as the United Kingdom.

The movement toward learning outcomes changes the way we think about curriculum and teaching. Education has either focused on teaching small, discrete skills which can be “mastered” or teaching abstract concepts without connecting or integrating them with how students actually use or apply those concepts in daily life. (Please see Appendix C for a list of terms for learning outcomes).

Learning outcomes are statements that indicate what is expected that the student will be able to do upon completion of an activity, course, program, or degree.

This focuses what we do towards two very simple questions:

- What did the student learn? (Learning Outcome)
- How do we know it? (Assessment)

To be considered a learning outcome, the outcome must be able to be achieved by the learner and they must be observable and measurable. If the learning outcomes states:

- who is to do the action
- what action is to be done, and
- what result will come from that action

it is a good student learning outcome statement.

Why do Learning Outcomes?

As an institution dedicated to student learning, refocusing our curriculum towards learning outcomes will allow us to demonstrate that learning has occurred in our students in an objective, measurable way. Focusing on learning and student success also helps support the college mission through the strategic plan.

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SACS, our accrediting agency, has recently emphasized the importance of learning outcomes. Learning outcomes assessment has become an integral part of the revised principles of accreditation (<http://www.sacscoc.org/pdf/PrinciplesOfAccreditation.PDF>).

Therefore, the development and assessment of learning outcomes will become a major part of PBCC's next reaffirmation of accreditation in 2012.

How Learning Outcomes differ from Learning Objectives

Although at first glance the terms *learning objectives* and *learning outcomes* may seem interchangeable, they are different. Some consider the difference between the terms *learning objective* and *learning outcome* as what we hope our students will learn (objective) and what our students actually learn (outcome). Others consider objectives to be similar to short-term goal statements. In this definition, objectives signify steps that must be accomplished in order to achieve a goal.

Learning objectives and learning outcomes are different.

In general, a *learning objective* focuses more on a discrete learning event within a course. Contrastingly, the term *learning outcome* focuses more on learning that occurs after a student has completed the activity, and through a process of reflection assimilates the knowledge at a higher level. These are subtle, but important, differences.

The chart below indicates some of the significant differences between learning objectives and learning outcomes.

Objectives	Student Learning Outcomes
Represent valuable skills, tools, or content (nuts and bolts) that enable a student to engage a particular subject.	Represent overarching products of the course.
Focus on content and skills important within the classroom or program; what the staff and faculty will do. Often termed the input in the course.	Express higher level thinking skills that integrate the content and activities and can be observed as a behavior, skill, or discrete useable knowledge upon completing the class.
Can often be numerous, specific, and detailed. Assessing and reporting on each objective for each student may be impossible.	An end product that can be displayed, observed, and evaluated against criteria.
*Excerpt from: Section 3, "Objectives and SLOs" in <i>Assessing Student Learning in Community Colleges</i> , Janet Fulks.	

Constructing Learning Outcomes

Steps to Writing Effective Learning Outcomes

As mentioned earlier, learning outcomes will be developed at three different levels: General education, program and course. Although all learning outcomes share certain characteristics, learning outcomes at the general education and program level tend to be more global and broad in nature. Those developed at the course level are more specific in nature in relation to the course subject. There are numerous approaches to take in developing learning outcomes. These examples illustrate some of the approaches many institutions have adopted.

From a very broad perspective, a learning objective should be:

- learner-centered
- specific
- measurable/observable

To further distill these concepts, many institutions have adopted the A-B-C-D formula (Carlson School of Management, University of Minnesota, Office of Learning Excellence <http://www.csom.umn.edu/Page3073.aspx>).

This formula uses four elements to construct a learning outcome:

A	Audience
B	Behavior
C	Condition
D	Degree

Examples

Here is an example of an outcome written using this formula:

the student	Audience
will apply appropriate techniques for addressing a policy decision problem	Behavior
when given one,	Condition
90% of the time.	Degree

As implied above, not all outcomes will need to state a degree. In fact, it is more likely they will not.

Note also that the order of the A-B-C and sometimes D parts is not important. We could have written the objective this way:

Given a policy decision problem,	Condition
the student	Audience
will apply appropriate techniques for addressing it	Behavior
90% of the time.	Degree

Here are other examples of learning outcomes:

1. For a given decision, students can *predict* industry-wide costs (effects on other parts of the industry).
2. Given information about successful business ventures, students will *identify* the organizational factors that contributed to their success.
3. Given pricing information about spot and forward markets, students will be able to *identify* buying opportunities to maximize profits.

Activity:

Given the three learning outcomes listed above, identify each part of the outcome using the A-B-C-D Method:

Notice that the learning outcome examples are all easily measurable; as you read them, you can easily imagine test questions, projects or problems that would reveal whether, and the degree to which, the learning outcomes have been met.

Bloom's Taxonomy

Another helpful example many cite for developing learning outcomes is the use of Bloom's Taxonomy (1956). Bloom's taxonomy can help faculty develop a precise language for expressing the learning outcomes of programs and courses. Each of the six categories of Bloom's Taxonomy allows the faculty member to assess a different type of skill/behavior in the course, starting from the lowest level of learning, the knowledge level, to the highest level, that of evaluation.

By specifying outcomes that display different levels of learning, Bloom's taxonomy offers more depth and detail than behavioral objectives. Learning outcomes expressed at various levels of Bloom's taxonomy become the foundation for the selection and design of assignments (including examinations), teaching strategies, readings, and instructional materials such as technology.

Bloom's Taxonomy

Category	Definition	Related Behaviors
Knowledge	recalling or remembering something without necessarily understanding, using, or changing it	define, describe, identify, label, list, match, memorize, point to, recall, select, state
Comprehension	understanding something that has been communicated without necessarily relating it to anything else	alter, account for, annotate, calculate, change, convert, group, explain, generalize, give examples, infer, interpret, paraphrase, predict, review, summarize, translate
Application	using a general concept to solve problems in a particular situation; using learned material in new and concrete situations	apply, adopt, collect, construct, demonstrate, discover, illustrate, interview, make use of, manipulate, relate, show, solve, use
Analysis	breaking something down into its parts; may focus on identification of parts or analysis of relationships between parts, or recognition of organizational principles	analyze, compare, contrast, diagram, differentiate, dissect, distinguish, identify, illustrate, infer, outline, point out, select, separate, sort, subdivide
Synthesis	relating something new by putting parts of different ideas together to make a whole.	blend, build, change, combine, compile, compose, conceive, create, design, formulate, generate, hypothesize, plan, predict, produce, reorder, revise, tell, write
Evaluation	judging the value of material or methods as they might be applied in a particular situation; judging with the use of definite criteria	accept, appraise, assess, arbitrate, award, choose, conclude, criticize, defend, evaluate, grade, judge, prioritize, recommend, referee, reject, select, support

In another visual way at looking at Bloom's Taxonomy, it can be thought of a pyramid, where the most basic methods of cognition occur at the lowest levels. And, in some cases, we might also relate this to educational levels.

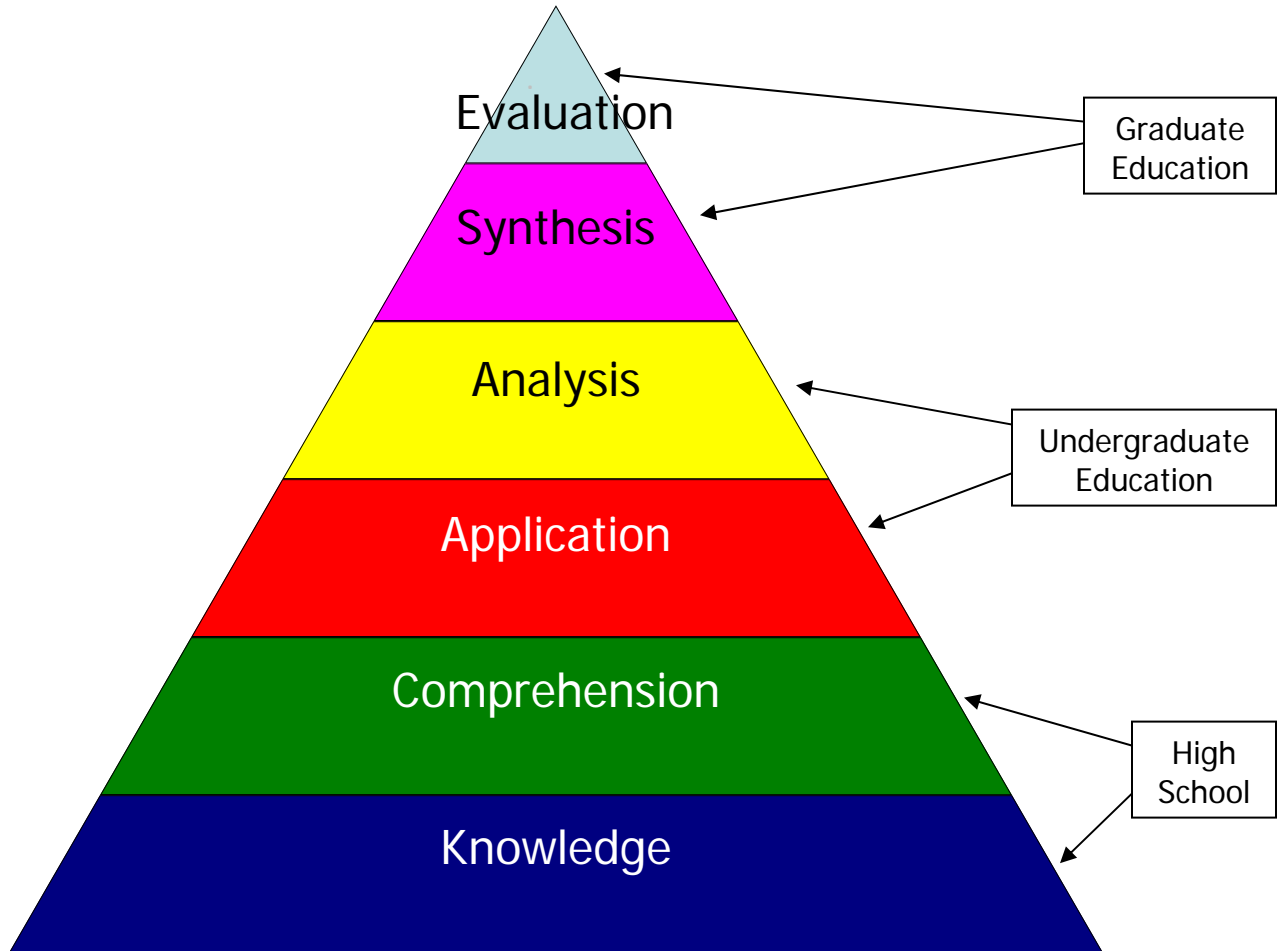


Figure 4 – Bloom's Taxonomy

Suggested Verbs to Use in Each Level of Bloom’s Taxonomy

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Define	Choose	Apply	Analyze	Arrange	Appraise
Identify	Cite examples of	Demonstrate	Appraise	Assemble	Assess
List	Demonstrate use of	Dramatize	Calculate	Collect	Choose
Name	Describe	Employ	Categorize	Compose	Compare
Recall	Determine	Generalize	Compare	Construct	Critique
Recognize	Differentiate between	Illustrate	Conclude	Create	Estimate
Record	Discriminate	Interpret	Contrast	Design	Evaluate
Relate	Discuss	Operate	Correlate	Develop	Judge
Repeat	Explain	Practice	Criticize	Formulate	Measure
Underline	Express	Relate	Deduce	Manage	Rate
	Give in own words	Schedule	Debate	Modify	Revise
	Identify	Shop	Detect	Organize	Score
	Interpret	Use	Determine	Plan	Select
	Locate	Utilize	Develop	Prepare	Validate
	Pick	Initiate	Diagram	Produce	Value
	Report		Differentiate	Propose	Test
	Restate		Distinguish	Predict	
	Review		Draw conclusions	Reconstruct	
	Recognize		Estimate	Set-up	
	Select		Evaluate	Synthesize	
	Tell		Examine	Systematize	
	Translate		Experiment	Devise	
	Respond		Identify		
	Practice		Infer		
	Simulates		Inspect		
			Inventory		
			Predict		
			Question		
			Relate		
			Solve		
			Test		
			Diagnose		

Verb Use in Constructing Learning Outcomes

Learning outcomes should be expressed through the use of active verbs that state what students will be able to do as the result of the learning. In order to be clear, verbs and expressions such as **'to know', 'to understand', 'to appreciate', 'to be acquainted with'**, should be avoided, since they are often too vague to convey the exact nature of the learning outcome being sought.

More active and explicit verbs such as 'state', 'show', 'explain', 'define', 'describe', 'predict', 'recognize' and 'criticize' should be used where possible.

A number of lists of suitable vocabulary for expressing learning outcomes have been developed in other higher education institutions. The lists which follow have been compiled from numerous sources from the Internet. These are a guide only - they have to be applied to subject knowledge, understanding and skills.

Cognitive Skills

- **Activities which give evidence of knowing** - Define, describe, identify, label, list, name, outline, reproduce, recall, select, state, present, extract, organize, recount, write, measure, relate, match, record.
- **Activities giving evidence of comprehension** - Interpret, translate, estimate, justify, clarify, defend, distinguish, explain, generalize, exemplify, infer, predict, rewrite, summaries, discuss, perform, report, present, indicate, find, represent, formulate, contrast, classify, express, compare, recognize, account.
- **Activities giving evidence of application of knowledge/understanding** - Apply, solve, demonstrate, change, compute, manipulate, use, employ, modify, operate, predict, produce, relate, show, select, choose, assess, operate, illustrate, verify.
- **Activities giving evidence of analysis** - Recognize, distinguish between, evaluate, analyze, break down, differentiate, identify, illustrate how, infer, outline, point out, relate, select, separate, divide, compare, contrast, justify, resolve, examine, conclude, criticize, question, diagnose, categories, elucidate.
- **Activities giving evidence of synthesis** - Arrange, assemble, organize, plan, prepare, design, formulate, construct, propose, present, explain, modify, reconstruct, relate, re-organize, revise, write, summaries, account for, report, alter, argue, order, select, manage, generalize, derive, synthesize, enlarge, suggest.
- **Activities giving evidence of creativity** - Originate, image, begin, design, invent, initiate, state, create, pattern, elaborate, develop, devise, generate, engender
- **Activities giving evidence of evaluation** - judge, evaluate, assess, discriminate, appraise, conclude, compare, contrast, criticize, justify, defend, rate, determine, choose, value, question, measure

Transferable Skills

- **Psycho-motor skills** - Perform, execute, operate, manipulate
- **Self Appraisal and Reflection on Practice** - Reflect, identify, recognize, evaluate, criticize, judge
- **Planning and Management of Learning** - Plan, priorities, access, use, select, explore, identify, decide
- **Problem-solving** - Identify, choose, select, recognize, implement, define, apply, assess, resolve, propose, formulate, plan

Communication/Presentation Skills

1. Communicate, express, articulate, question, examine, argue, debate, explain, formalize, respond, rebut, justify, defend, listen, illustrate, demonstrate, organize, pace, model, summaries

Interactive and Group skills

2. Accommodate, interact, collaborate, participate, cooperate, coordinate, structure, arbitrate, initiate, lead, direct, guide, support, decide, set goals, motivate, reflect, evaluate, recognize, enable

Sample Student Services Learning Outcomes from El Camino Community College:
Admissions and Records - Students will be able to utilize web technology to accurately and successfully apply and register on-line.

Assessment and Testing - By participating in the Assessment/Testing Program, students will develop attention to detail and will enhance their computer skills by completing their college placement exams on-line.

Counseling - By completing a series of career assessments, undecided students will be able to choose a major and track declaration of majors.

EOPS - By participating in the educational planning process in EOPS, students will be able to create and follow a 6 semester educational plan.

EOPS/ CalWORKs/CARE - By participating in the Education to Work activities created by CalWORKs, students will be able to connect their educational training to a direct job skill.

Financial Aid - Students using the online Financial Aid Orientation will use more online financial aid services

First Year Experience - Students in First Year Experience learning community courses will demonstrate the ability to formulate an educational plan that supports their academic and career goals.

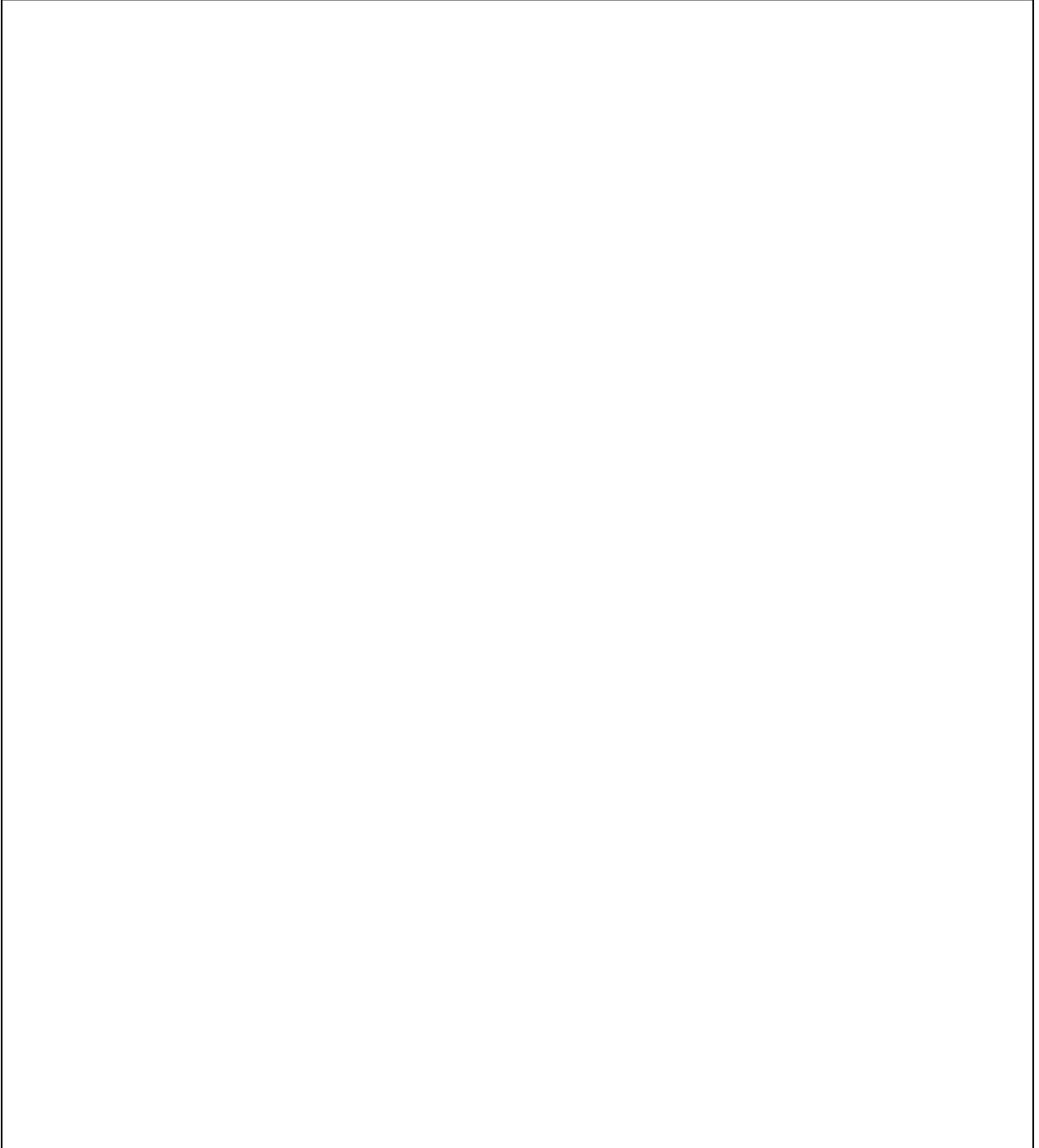
Outreach and School Relations - After speaking with an El Camino College Outreach Representative, prospective students will be able to make informed decisions about ECC programs and services.

Student Development - By participating in Student Government, students will be able to facilitate a group meeting using parliamentary procedure.

Worksheet for Developing Learning Outcomes

Activity:

Choose a student services activity and write some learning outcomes, using the A-B-C-D method

A large, empty rectangular box with a thin black border, intended for students to write their learning outcomes. The box is currently blank.

Assessing Learning Outcomes

The fourth phase of learning outcomes is assessment - how well are students attaining the learning outcomes of our programs and courses?

There are many approaches to assessing learning outcomes. In the design of PBCC's approach to assessment, we incorporated several key concepts:

- The assessment process should not put an undue burden on faculty and students;
- The assessment process should be based on authentic assessment and multiple measures that uses rubrics and other tools to assess learning outcomes;
- The assessment process should produce measureable objectives;
- The assessment process should result in continuous improvement in student learning.

From research, we developed a model that incorporates nine "steps" along the assessment pathway.

Each of these steps is a critical point where:

- the type of learning outcome to examine (general education or program) is identified;
- a performance standard is set for the learning outcome measurement;
- where the data are going to be measured has been identified;
- when the data are to be measured;
- how the data are going to be measured;
- who collects and submits data;
- how the data are to be analyzed;
- how the results are used to improve student learning.

Web Resources:

Cabrillo Community College -

<http://pro.cabrillo.edu/slos/Assessment%20of%20Student%20Services.html>

El Camino Community College -

<http://www.elcamino.edu/academics/slo/studentervices.asp>

Lewis University -

<http://www.lewisu.edu/studentervices/multicultural/outcomes.htm>

San Juan Community College -

<http://www.sanjuancollege.edu/MSDocs/SSLO%20Career%20Readiness.doc>

Santa Monica Community College -

<http://cos.edu/ImageUpload Links/SSLO%20SMC%20-2-2-07.pdf>

PBCC's Nine Step Assessment Model for Learning Outcomes

