Learning Outcomes

The clearer the picture your students have of what you expect them to do at the end of your course and the greater their understanding of what their role will be and of the criteria that will be used to determine success or failure, the more effective the course will be. (Diamond, 1998)

- What is a learning outcome and how does alignment of learning outcomes, assessment, and Windsor graduate learning outcomes work?
- How do I write a learning outcome?
- How do I know students have achieved the outcome(s)?
- Samples/examples of courses centred on learning outcomes

What is a learning outcome and how does alignment of learning outcomes, assessment, and Windsor graduate learning outcomes work?

University of Windsor’s document, To Greater Heights, provides an outline of the learning outcomes that are to be found in all University of Windsor graduates. This document is meant to be the foundation that every course is built on, with guidelines that are cross-curricular and assessable by instructors. The reasoning behind our university’s direction of learning outcome-centredness is as follows:

In addition to whatever specialized knowledge he or she learns in a given field of study, every Windsor graduate will be known for attributes like the following (which have been adapted by the Programme Development Committee of Senate from a list originally prepared by Dr. Harry Hubball of the University of British Columbia during his visit to Windsor in February, 2003):

The ability to demonstrate:
- the acquisition, application and integration of knowledge
- research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
- critical thinking and problem-solving skills
- literacy and numeracy skills
- responsible behaviour to self, others and society
- interpersonal and communications skills
- teamwork, and personal and group leadership skills
- creativity and aesthetic appreciation
- the ability and desire for continuous learning

In addition to the document To Greater Heights, an excellent power point presentation, Learning Outcomes: Teaching with the “End” in Mind, presented by Drs. Yvette Daniel and Allison
McInnes at the May 2007 Centre for Teaching and Learning Workshop Series *Centred on Learning 2007* link on the CTL website. This resource defines what learning outcomes are, why they are necessary, the teacher and learner’s perspectives, the cognitive perspective, educational psychology, the components of learning, what learning outcomes should address, the characteristics of learning outcomes, the prioritization of ideas, essential understandings, assessment, and additional tips.

This document presents a variety of definitions and resources concerning learning outcomes from universities throughout Ontario, as well as from universities and colleges in the United States and other parts of the world. The top results are marked with an * beside them on a scale from *** being the top suggested choice.

**How do I write a learning outcome?**

Determine what you want your students to take away from the course in terms of learning and practice.

**American Association of Law Libraries** offers the professional education resource, *Writing Learning Outcomes*, which defines what a learning outcome is, lists key questions instructors should ask themselves before writing learning outcomes, describes and provides examples of effective learning outcomes, uses examples of ineffective learning outcomes and solutions to fix them, and explains the importance of action verbs.

[Diagram of course flow and learning outcomes](image)

**British Columbia Institute of Technology (BCIT)** offers the document *Writing Learning Outcomes*, which explains the importance and role of learning outcomes in a course. BCIT describes learning outcomes as follows: “learning outcomes specify what learners’ new behaviours will be after a learning experience...the knowledge, skills, and attitudes that the students will gain through your course...[that] begin with an action verb and describe something observable or measurable.” A useful diagram maps the flow of a course and its connection to its learning outcomes.

**University of California, Santa Barbara** offers *Writing learning outcomes for the Core Curriculum* as a brief explanatory guide for learning outcomes and their importance in education.
This site offers the how, what, and why of learning outcomes as well as a listing of verbs specifically relating to knowledge, comprehension, application, analysis, synthesis, and evaluation.

**University of California, Santa Cruz (UCSC)** website offers a resource to new and current faculty to assist in the design of a course. The document *Designing a Course* can be found in the UCSC’s Teaching Toolbox, which breaks down all the parts of a syllabus and provides a brief, yet thorough, explanation for all parts of course design – defining a learning outcome and the role it plays in a course. UCSC defines a learning objective as “what [the teacher] want[s] students to take away from [the] course”. The UCSC’s “Designing a Course” document proposes that course designers “think backwards”. This suggestion ties into Drs. Yvette Daniel and Allison McInnes’ presentation referred to above.

*University of Guelph*’s Teaching Support Services (TSS) offers many useful resources online. *Course Planning and Design* covers the following topics with additional website links for more information: words of advice - the voice of experience; getting started; course planning guides; assessment; teaching practices and methods; incorporating technology; course syllabus; syllabus resources; first class meetings; lesson planning; and TRC resources - a selection. Another resource available through TSS is a 3-page document entitled *Learning Objectives: A Basic Guide*, which defines and deconstructs the learning objective, giving examples. The *2007-2008 Undergraduate Calendar* provides an overview of the university’s objectives and how they tie into their mission statement. *Note: learning objectives and learning outcomes are similar but not the same. This resource is intended to be a reference tool only.*

The Higher Education Academy’s Physical Science Centre 2005 document *Writing Learning Outcomes* provides the reasoning behind the use of learning outcomes as well as instructions for their formulation and samples. Common verbs found in learning outcomes are listed. The article *Aligning teaching for constructing learning* by John Biggs offers further background information on effective intended learning outcomes (ILOs) and their constructive alignment in a course, reasons for choosing teaching/learning activities (TLAs) with references to resources for further information, and a diagram that demonstrates the relationship between the teacher and student perspectives of a course (shown below).

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Teacher perspective  ----> objectives  ----> ILOs  ----> teaching activities  ----> assessment

Student perspective  ----> assessment  ----> learning activities  ----> outcomes
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**League.org** offers an online resource called *Getting Results*, a Professional Development Resource for Community College Educators with six modules: Module 1: Creating a Community of Learners; Module 2: Planning for Outcomes; Module 3: Active Teaching and Learning; Module 4: Moving Beyond the Classroom; Module 5: Teaching with Technology; and Module 6: Assessing Teaching and Learning. Module 2 has an 8 minute video clip that explains why and how learning outcomes are so important to a course, how three professors at a college in the United States discuss learning outcomes, and how they them demonstrate the role of learning outcomes in a course in front of their classes. In addition to the video, Module 2 includes an informative pdf document called *Module 2: Planning for Outcomes* as well as the power point presentation entitled *Getting Results*. 
University of Manchester’s document *Guidance on writing aims and intended learning outcomes* offers tips on how to write learning outcomes with levels and what factors to consider when creating the levels. The chart below, excerpted from the document, lists factors of levels and the words and phrases to help introduce the factor.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Words and phrases to help introduce factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of ability</td>
<td>Coherent knowledge; systematic comprehension; application to unseen problem; conceptual analysis; wide-ranging synthesis; critical evaluation; generate alternative scenarios.</td>
</tr>
<tr>
<td>Combination of abilities</td>
<td>Interplay between; in light of; taking into account the impact of; while also; an integrated approach; at the same time as.</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Within a structured and managed environment; some self direction, awareness of own learning; initiate and carry out projects; manage or advance own learning; monitoring progress; personal responsibility; autonomous planning; evaluating your own performance; enhancing your skills.</td>
</tr>
<tr>
<td>Context</td>
<td>Specialist and non–specialist audiences; variable demands; use scholarly reviews and primary sources; effectively adapting to new demands; unpredictable situations; incomplete data; appreciate uncertainty; identify a range of solutions; managing dynamically complex work.</td>
</tr>
<tr>
<td>Originality</td>
<td>Established techniques; standard methods of solution; current problems; devise novel approaches; recent research; creative responses; informed by the forefront of the discipline; at the forefront of discipline; innovations in practice; extending the theoretical basis; limits of knowledge; originality in the application of knowledge; creation and interpretation of new knowledge; meriting publication.</td>
</tr>
</tbody>
</table>

University of North Carolina’s Centre for Teaching and Learning provides instructors with guidelines for course planning and teaching in the resource entitled *Teaching at Carolina, A Handbook for Instructors*. The section specifically devoted to course planning indirectly refers to learning outcomes and places the focus of the course and the responsibility for the learning of course materials on the student. This document provides what are called “operative planning questions” for the instructors to consider, which can be viewed as learning outcomes:

- In what ways will students be better thinkers when they finish the course?
- What should students be able to do with the knowledge and skills gained in the course?
- What portions of the content are germane to these learning goals?
- What kinds of tasks should students perform in order to achieve these goals?

University of Victoria provides its students with a *Learning Skills Program* that aids in the students’ preparation for higher-level thinking and education. One of the handouts available is a chart from the Learning Skills Program on *Bloom’s Taxonomy*. This resource is a representation of the foundation of learning outcomes and acts as a useful resource for both teachers and students alike, defining the purpose and reasoning behind a course.
**Wisconsin Speech-Language Pathology and Audiology Professional Association (WSHA-P) has an exceptional resource, *Writing Measurable and Observable Learner Outcomes Assessment of Learning Outcomes*. This document provides the user with the “how to’s” as well as the “what not to do’s” while designing a course and outlining the specific learning outcomes. The document also includes an action verb list for easy reference, as well as the definition of a learning outcome: “learning outcomes define the skills, knowledge, and/or attitudes that the learner should be able to demonstrate following the learning experience”. Included in the document is also the reasoning behind the decisions an instructor must make during the course design process.

**How do I know students have achieved the outcome(s)?**

**ABET**’s webpage *Assessment Planning with Gloria Rogers* provides links to useful resources in relation to learning outcomes, assessment, and the evaluation of courses. A great visual in the form of a power point presentation, called *Assessment for Quality Assurance*, is available for download. It defines learning outcomes as “statements that describe what students are expected to know and/or be able to do by the time of graduation. If students have achieved these outcomes, it is anticipated that they will be able to achieve the educational objectives after graduation.” This document also demonstrates how learning outcomes tie into the mission of the institution through the following diagram:

**Cabrillo College** provides an in-depth look at learning outcomes, how to write them, and how to evaluate them in *Student Learning Outcomes and Instructional Planning, A Work Book*. The document includes checklists, exercises, further background information behind the logic of learning outcomes and how they influence a course and its students, and an effective guide that can assist in the process of assessment of student learning outcomes (SLO).
Mount Royal College’s Academic Development Centre created the document *Outcomes-Based Curricula*, which lists and defines the six college-wide learning outcomes (CWO) the college supports: Communication, Ethical Reasoning, Information Retrieval & Evaluation, Computer Literacy, Thinking, and Group Effectiveness; and includes an explanation of how these outcomes are incorporated into their curriculum. A useful diagram illustrating the outcomes/assessment feedback loops is included as below as well as a link of suggested resources for further information on learning outcomes.

![Outcomes/Assessment Feedback Loop](image)

**Western Washington University**’s newsletter *Dialogue* is made up of discussion papers with relevant teaching topics that are central to its teaching staff, mission, as well as other educators. The topic of Issue 2 is *Assessment, Accountability, and Student Learning Outcomes*, a great guide for writing and assessing student learning outcomes.

**Samples/examples of programs/courses centred on learning outcomes**

**University of Alaska Fairbanks** provides an *Example Degree and Certificate Student Learning Outcomes Objectives* for Electrical Engineering in the form of a chart that lists and compares Intended outcomes/objectives to Assessment Criteria to Implementation Procedures (what, when, who) of an Electrical Engineering Undergraduate Student upon graduation. This example can be referenced by other programs for the layout and defense/mission behind the learning outcomes listed, bearing in mind that the chart is a representation of an undergraduate student’s education throughout their degree.

**Lakehead University** provides a *synopsis of learning outcomes* and how to identify them with suggestions on mistakes and words to avoid through their Instructional Development Centre. This resource also includes sample learning outcomes from Lakehead’s Department of English. Lakehead references Camosun College’s *Program Review and Renewal (PRR)* website, which also provides additional information on learning outcomes as well as samples from their courses.

***UCE Birmingham’s* Guide to Learning Outcomes* is essentially your “one stop shop” for learning outcomes as it provides the what, why, and how of the process, plus examples of learning outcomes for easy reference. Below is UCE Birmingham’s figure for how a program should be organized and how the learning outcomes fit in. An emphasis is placed on the assessment of learning outcomes. Additional visual aids are available on this site.
Tuskegee University provides their program mission statement, a listing of their objectives, their outcomes, and charts that map the program outcomes vs. objectives and how the outcomes relate into their various courses in their *Program Mission, Objectives and Outcomes.*