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Planning and Pacing

Dr. Willow Brown (Education) Reprinted with permission by William J. Owen, Editor, 2010 UNBC Teaching Manual

Careful planning that occurs before, during, and after instruction is a foundation of effective teaching. First, the instructor organizes course content around central concepts and constructs a developmental sequence, distributing all topics, readings, and assignments over a manageable timeline. The expected characteristics of increasingly diverse groups of learners are considered and adaptations are made to course content, strategies, and resources to increase the likelihood of student interest and success. The recent trend is to develop and clarify learning objectives in terms of what students will do rather than in terms of instructor behaviours.

Once philosophical aims and corresponding objectives are clarified, resources, teaching methods, assignments, and evaluation are planned to have congruence with specific objectives. All parts of the plan must relate to each other; care must be taken to achieve objectives with appropriate student assignments and then to evaluate or test that which has actually been taught.

Planning frameworks and syllabi shared by colleagues can help to scaffold beginning instructors but the ability to create plans and timelines that correspond closely to course delivery must be refined through experience. Instructors at any level can improve their planning skills through reflective practice, which is most effective as a collaborative exercise among peers or in a mentoring relationship. A factor that is often overlooked is the value of planning as a device that allows learners to know what to expect and invites them to increase responsibility for their own learning.

Tips for planning and pacing

 Begin systematic planning for congruent objectives, activities, and evaluation strategies with four key questions: (1) What do I want the students to achieve? (2) What resources are available or

needed? (3) How will learning be achieved, that is, what teaching methods and activities? and (4) How will I know that the objectives have been achieved?

- Accept that you cannot teach everything about every topic: choose the most significant material and emphasize the content required for success in subsequent courses
- Diagram important course concepts, with the central course theme as a tree trunk, main concepts as tree branches and related facts as leaves; emphasize topics in proportion to their relationship to the central theme
- Avoid an instructional pitfall validated in research: when allocating time to topics, instructors often consider their own interest in the material rather than the difficulty of the content for students
- Share broad philosophical aims for the course, and specific objectives for each topic, with students; enlist them as allies to achieve objectives and adhere to the schedule
- Discipline yourself to deal with each topics on schedule; build flex time or optional topics into the schedule to allow for unanticipated delays or opportunities
- Stagger assignment due dates in your course load to allow for timely grading; consider student presentations rather than lengthy papers at the end of the term, so that final grades can be submitted on time
- Balance required reading so that the amount is similar each week; consider reducing reading assignments in the weeks before midterms and final exams, or before due dates for major assignments
- During teaching, make note of adjustments to pacing and revise subsequent courses accordingly
- At the end of the course, seek student feedback with respect to pacing and planning, and revise course plans in response to feedback

Aligning Teaching for Constructing Learning

By John Biggs

Constructive alignment' starts with the notion that the learner constructs his or her own learning through relevant learning activities. The teacher's job is to create a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes. The key is that all components in the teaching system - the curriculum and its intended outcomes, the teaching methods used, the assessment tasks - are aligned to each other. All are tuned to learning activities addressed in the desired learning outcomes. The learner finds it difficult to escape without learning appropriately

Teaching and learning take place in a whole system, which embraces classroom, departmental and institutional levels. A poor system is one in which the components are not integrated, and are not

tuned to support high-level learning. In such a system, only the 'academic' students use higher-order learning processes. In a good system, all aspects of teaching and assessment are tuned to support high level learning, so that all students are encouraged to use higher-order learning processes. 'Constructive alignment' (CA) is such a system. It is an approach to curriculum design that optimises the conditions for quality learning.

To access and read the free article online: Biggs, J. (2003). Aligning teaching for constructing learning. Online at: https://www.heacademy.ac.uk/sites/default/files/resources/id477 aligning teaching for constructing learning.pdf

Seven Steps to Design Your Course

Before you start updating your course outline or syllabus, make sure you have thought about the design of your course.

Here are seven basic steps to get you going – often done in the order presented.

1. Recognize who your learners are

• prior knowledge, emotional and intellectual development levels, demographics etc.

2. Write measurable and observable course learning outcomes

- skills, knowledge and attitudes to achieve deep learning of key concepts
- 3. Identify evaluation methods for demonstrating learning outcomes
 - assignments, projects, tests, demonstrations, presentations (% and marking schemes)
- Outcomes 3. Teaching & Learning Strategies Methods

1. Learning

4. Consider informal assessment methods to use throughout course

• minute papers, tickets out door, surveys, peer sharing, consultations (no marks)

5. Choose appropriate teaching and learning strategies to allow students to practice new learning

active learning, student-centered, authentic, engaging and experiential strategies

6. Keep scope of content around key concepts and enduring understandings

• absolutely essential and necessary content to include vs. nice to know content

7. Plan out your course content and how it will be organized

• topics, content, scaffolding of learning experiences, time for application

The Basics of Writing Learning Outcomes

Program or Course Level

The next pages outline some of the basic components to consider when writing learning outcomes for your program or course.

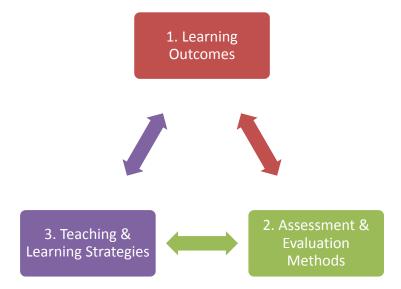
Definition of Learning Outcomes

- broad statements about intended student learning after the course (or program) has been completed in terms of the desired end product
- what students should know and be able to demonstrate, as well as the depth of the learning that
 is expected
- knowledge, skills and values required by students to demonstrate learning of core concepts and essential components of the course (or program)
- often presented separately in the cognitive, psychomotor and affective domains, but also reflect a range of interacting knowledge, skills and attitudes
- another way to look at learning outcomes is by referring to the 3 H's:
 - habits of the head (what you want students to know)
 - habits of the hand (what you want students to be able to do)
 - habits of the heart (what qualities and attributes you want students to have)
- Based on unique program situational factors and contexts, the number of learning outcomes that represent a graduate's integrated and essential learning might be demonstrated through:
 - 5-8 broadly-stated COURSE learning outcomes
 - 10-15 broadly-stated PROGRAM learning outcomes

Note: While you will create learning outcomes as best as you can with the curriculum, course content and student learning in mind, unintended learning outcomes do arise during the progress of a course or over a program's time. Therefore, some learning outcomes may be more constant, whereas other learning outcomes may need to be adjusted, enhanced or created due to learning situations, student needs or course design needs. Learning outcomes are not fixed and should evolve as the course evolves and as students engage in their learning experiences.

How Do They Fit Within The Course Design?

- The learning outcomes are linked to the assessment and evaluation methods, along with the teaching and learning strategies.
- It is best practice to write/edit your learning outcomes first, before your other methods and strategies are chosen.
- · Keep the learner front and centre at all times during the planning process.



Difference Between Learning Objectives and Learning Outcomes

Objectives are often written from a **teacher's perspective** and typically are written more in terms of their **teaching intentions** and indicate what content they intend to cover through instruction, curricula, programs or activities:

For example:

- This course will use videos and guest speakers to cover the historical events that happened in manufacturing between 1910 and 1950 in Canada.
- This course will present various human resource challenges and explore implications for business decisions.

Outcomes are statements about anticipated achievements from students. They are often more student-centered and describe what the learner should learn.

For example

- By the end of this course, students will explain the core historical Canadian events in manufacturing that happened between 1910 and 1950 through creation of a poster presentation.
- By the end of this course, students will describe the four human resource challenges and the associated implications for business decisions through a case analysis of a northern BC town.

Creating Well-Written Learning Outcomes

- Start with an action verb that is measurable and observable. See charts on following pages.
 It important that the student can demonstrate the learning and you can observe and measure their degree of accomplishment.
- 2. Follow the verb with a **statement** that indicates the **depth of learning** to be demonstrated
- 3. End with a **statement** to give the learning outcome **context** and to identify **criteria** for an acceptable performance. Use the words "by" or "through" that will help with stating how the learning outcome will be assessed.
- 4. Be **specific and not ambiguous**. The following verbs are not that specific and do not result in observable demonstrations of student learning. Try other verbs from the charts on next pages.

×	Appreciation for	×	Knows
×	Awareness of	×	Has knowledge of
×	Capable of	×	Learns

x Comprehendx Likesx Conscious ofx Memorizes

x Familiar withx Understandsx Shows interest inx Will be able to

- 5. Create a **balanced set** of learning outcomes. Too broad a learning outcome will be difficult to assess, while an extensive list of detailed learning outcomes will limit flexibility and adaptability of the curriculum.
- 6. Be **concise and clearly state** the intended learning outcomes. Make it friendly for students, faculty and others.
- 7. The learning outcomes have to be **realistic** (related to the real-world) **and attainable** within the time period of the course or program.

Categories of Learning: Creating a Variety of Learning Outcomes

	Affective (Feelings/Attitudes)	Cognitive (Mental Skills/Knowledge)	Psychomotor (Manual/Physical Skills)	
Lower Levels of Learning	Overview The student is aware of the situation and is able to control attention to it. The student also is able to be actively involved in the situation and has appropriate responses. Examples Respectfully listens to group leader. Participates in discussions and suggests new ideas. Assists colleagues with tasks.	Overview The student retrieves and recalls basic information from memory. Students show their ability to construct meaning from material that results in demonstrating comprehension. This knowledge provides the foundation for other kinds of learning. Example Recites a poem. Translates a foreign language paragraph. Explains in own words how to perform the experiment.	Overview The student uses sensory clues to inform his/her motor activity. The student is ready to act and is set to take on a task. Examples Able to operate a simple tool. Copy or create art after taking lessons from an instructor. Shows basic balance beam movements with some assistance.	
Medium Levels of Learning	Overview The student has a set of internalized values and is able to accept and have commitment to a value. Examples Shows sensitivity towards others in awkward situations. Shows problem solving abilities when a situation has arisen.	Overview The student is able to demonstrate an application of knowledge. The student is also able to break down, examine and analyze information. Examples Applies formula to a new set of variables. Uses a spreadsheet to calculate taxes. Compares two magazine design proposals in terms of pros/cons.	Overview The student practices a simple skill under the supervision of instructor. The student moves on to carry out that skill by demonstrating confidence and proficiency. The student moves to handling more complex tasks in a smooth manner. Examples With fewer errors and through coordination of many actions, a final video cut is produced with sound and graphics.	
Higher Levels of Learning	he student is able to organize alues, resolve conflicts and create new value system. In addition, the tudent is able to develop a consistent response to a set of alues and use them in a variety of alues and use them in a variety of ituations. Examples Coverview The student is able to problem solve and make judgments the evaluating and supporting information along with creating and designing new knowledged and designing new knowledged and the solve and make judgments the evaluating and supporting information along with creating and designing new knowledged and make judgments the evaluating and supporting information along with creating and designing new knowledged and make judgments the evaluating and supporting information along with creating and designing new knowledged and designing new knowledged and make judgments the evaluating and supporting information along with creating and designing new knowledged and designing new kn		Overview The student adapts motor responses when encountering new situations and problems. The student is also able to create new motor responses for adapting when new skill sets are required. Examples Demonstrates advanced and nature movements of tennis strokes without having to take time to thin and react.	

Action Verbs Used in the Creation of Learning Outcomes

	Affective (Feelings/Attitudes)		Cognitive (Mental Skills/Knowledge)			Psychomotor (Manual/Physical Skills)	
Lower Levels of Learning	Aid Ask Assist Attempt Choose Conform Discuss Follow Give	Identify Locate Name Observe Perform Question Report Request Respond	Cite Define Estimate Find List Name Recognize Rephrase Select State Transfer Acquire	Clarify Describe Explain Identify Locate Outline Record Report Show Summarize Translate Memorize	Choose Draw File Label Match Recall Relate Review Sort Tell Write Repeat	Choose Detect Differentiate Display Distinguish Explain Identify Isolate Link	Listen Observe Point To Proceed React Relate Respond Select Show
Medium Levels of Learning	Accept Appreciate Choose Complete Concern Demonstrate Describe Differentiate	Distinguish Explain Express Invite Join Justify Propose Share	Adjust Apply Classify Differentiate Examine Illustrate Inspect Modify Prepare Question Tabulate Use Survey Contrast Organize	Alter Calculate Compare Discriminate Extract Infer Investigate Order Produce Separate Test Dissect Probe Detect Translate	Analyze Categorize Compute Distinguish Extrapolate Interpret Manipulate Predict Relate Solve Uncover Verify Inquire Deduce	Adjust Assemble Build Close Dismantle Dissect Draw	Grind Heat Load Manipulate Organize Replace Rotate
Higher Levels of Learning	Act Arrange Adhere Change Compare Contrast Demonstrate Formulate Generalize	Integrate Influence Mediate Organize Propose Qualify Revise Solve Synthesize	Appraise Assess Compile Choose Construct Design Develop Formulate Implement Justify Propose Rate Reorder Revise Synthesize	Approve Build Compose Conclude Create Devise Diagnose Generate Indicate Organize Prove Rearrange Research Support Transform	Assemble Combine Conceive Confirm Criticize Discover Evaluate Integrate Judge Plan Rank Recommend Resolve Structure Validate	Adapt Alter Build Create Change Combine Compose Construct	Design Devise Initiate Modify Originate Rearrange Reorganize Revise

Gross & MacKeracher. (n.d)

Examples of Learning Outcomes

Geology: By the end of this course, students should be able to demonstrate how magma geochemistry relates to partial melting of the mantle by contrasting the outcomes of this process in different tectonic regimes through the critical analysis of specific case studies.

Biochemistry: By the end of this course, students should be able to apply the principles underpinning the use of molecular graphics in the design of drugs to illustrate general and specific cases through a computer-based presentation.

English: Students should be able to analyze the relationship between the language of satire to literary form by the close examination of a selected number of eighteenth-century texts in a written essay.

Integrated Course Design

This brief paper by L. Dee Fink outlines the main components of his Integrated Course Design model. It provides step-by-step breakdown of the procedures to follow when designing a well-structured and learning-centred course. The first paragraphs are below:

Teaching is a complex human action. The many tasks that are involved comprise four general components:

- Knowledge of the subject matter
- Decisions about the purpose and nature of the learning experience.
- Interactions with students (through lectures, discussions, office visits etc.
- Management of the entire instructional event.

The degree to which these tasks are performed well directly affects the quality of the learning experience that students have. We have traditionally relied on graduated schools to instill the needed subject matter mastery. Faculty development programs commonly include efforts to improve communication strategies and the quality of interactions with students. The department or its curriculum committee frequently controls decisions about the purpose and nature of the learning experience. But the problem of designing and managing the instructional event is the responsibility of the faculty member and, in many cases, the area in which he/she is least prepared.

To read the rest of this free article access: Fink, L.D. (2005). Integrated course design. IDEA Paper No. 42 Online at: http://ideaedu.org/sites/default/files/Idea_Paper_42.pdf

Universal Instructional Design: The Seven Principles

The learner-centredness approach to education aims to develop in each student, as early as possible, a sense of responsibility for his/her own learning. The emphasis is on self-reliant learning, which involves setting learning goals and monitoring one's own growth and development. It also includes making explicit the research/teaching link, skill development, and experiential learning.

For this approach to be successful, an academic environment must be fostered in which students are actively supported as they take responsibility for their own learning.

Universal Instructional Design (UID) guides educators in their endeavor to develop learner-centred instruction and course content.

What is Universal Instructional Design? The core principle of UID is inclusiveness and equity. It suggests that ideally all students should be able to fulfill course requirements without special accommodations.

What are the benefits of implementing UID? UID avoids segregating or stigmatizing any student. UID creates a learning environment that respects and values diversity.

Principle 1 - Be Accessible and Fair

Guiding question: Is it likely that students will have difficulties accessing course materials or participating in any essential activities related to my classes?

UID is anticipating varying student needs and circumstances. It involves a commitment to remove barriers to accessing course materials and taking part in essential activities. Suggestions:

- In your syllabus, include an invitation for students with disabilities to meet with you to review their specific needs.
- In advance of a lecture, post an online summary of the key points to be covered in the class.
- Ensure all online materials are formatted so that they can be used with screen reading software.

Principle 2 - Be Straightforward and Consistent

Guiding question: Are there major areas of confusion or inconsistency among course objectives, your own expectations and/or how the course is presented?

UID is overcoming confusion, coordinating all parts of the curriculum, and clarifying communications. Implementing what is known about learning and study skills. Suggestions:

- · Confirm that every question on your exam relates directly to information covered in class or within the written materials.
- Verbally communicate changes to course syllabus and provide changes in writing (e.g., online).
- Ensure consistency between written materials and PowerPoint slides this guides learning by providing visual and cognitive clues, i.e., predicting meaning and actions.

Principle 3 - Provide Flexibility in Use, Participation and Presentation

Guiding question: Does the course offer students enough choices in how it is presented so that they can, to a reasonable extent, approach the course in a way that suites their needs and abilities?

UID is offering options in order to enable physical use, allow fuller participation, and permit suitable demonstration of mastery of course requirements. Use your imagination to create a rich learning environment for all involved. Suggestions:

- Offer students the option of submitting a written report or doing a class presentation.
- Choose textbooks early and ensure the publisher will provide them in alternative formats (e.g., digital/electronic).
- Design group work projects so that students have choices in how they participate

Principle 4 - Be Explicitly Presented and Readily Perceived

Guiding question: Are there barriers to students receiving or understanding the information and resources they need in this course?

UID is maximizing all communication media, without presumption that students are physically or cognitively enabled for all media. Use a two-pronged review of course materials, resources and delivery. There is a difference between explicitly presented and readily perceived. Imagine a clearly spoken lecture presented in a dim room with a hearing-impaired student in the back row. Suggestions:

- Provide an in-class demonstration of the course website or WebCT.
- Post online summaries of key lecture points and/or provide online lecture notes.
- Ensure all online pictures and graphics have text-based descriptions.
- Provide a choice of file formats on your website or WebCT.
- Provide verbal explanations of key information presented in class through visual aides.

Principle 5 - Provide a Supportive Learning Environment

Guiding question: Will students feel respected as individuals, welcome to express their thoughts and able to explore new ideas in the course?

UID is attitudes and actions that demonstrate respect for students as adults, contributing to the learning of all. Encouraging questions and comments and respecting individual needs. Suggestions:

- Encourage experimentation and make it ok not to succeed at first.
- Provide an online option where students can post comments and ask each other questions
- Encourage students to sit beside someone different at each lecture and give them 2 minutes to introduce themselves.
- Encourage more experienced students to share their knowledge with others

Principle 6 - Minimize Unnecessary Physical Effort or Requirements

Guiding question: If there are physical challenges or obstacles to participating in this course, can they be reduced or avoided?

UID is recognizing that students will be of a wide range of ages, backgrounds, physical characteristics and personal circumstances. Systematically eliminate, or adjust, anything that requires physical effort. Suggestions:

- Ensure you have an efficient, user-friendly interface for your course website or online materials.
- Assignments requiring physical effort should be designed as group activities.
- If the course includes online conferencing provide students with a summary of netiquette, include a reminder to put new information at the top of a forwarded message so that students using screen readers do not have to re-listen to old information before hearing the new information.

Principle 7 - Ensure a Learning Space that Accommodates Both Students and Instructional Methods

Guiding question: Is it likely that students will find any of the materials or activities in this course to be inappropriate or unsuitable?

UID is recognizing that learning happens in intellectual as well as physical space. Review the entire student experience from the standpoint of appropriateness, suitability, and psychological accord, avoiding discord. Suggestions:

- Check your class numbers and visit assigned classroom prior to the beginning of the semester.
- Adapt your course plans if needed, be creative.
- Design an online component that will enhance learning and alleviate classroom constraints.

10 High Impact Educational Practices

For over 15 years, data gathering has occurred through the administration of the National Survey of Student Engagement (NSSE) across North America (including Canada). Follow up investigations have happened around campuses that have high achieving students with high retention and engagement rates.

From these investigations, ten key impactful educational practices have been widely tested and have been shown to be beneficial for postsecondary education students from many backgrounds. On many campuses, assessment of student involvement in active learning practices such as these has made it possible to assess the practices' contribution to students' cumulative learning. The following is a list of high impact practices that educational research has shown to improve student retention and engagement in learning. You may wish to consider including some of them in your courses or program.

Ten High Impact Educational Practices: Descriptions and Examples

First Year Seminars and Experiences

Many schools now build into the curriculum first-year seminars or other programs that bring small groups of students together with faculty or staff on a regular basis. The highest-quality first-year experiences place a strong emphasis on critical inquiry, frequent writing, information literacy, collaborative learning, and other skills that develop students' intellectual and practical competencies. First-year seminars can also involve students with cutting-edge questions in scholarship and with faculty members' own research.

Common Intellectual Experiences

The older idea of a "core" curriculum has evolved into a variety of modern forms, such as a set of required common courses or a vertically organized general education program that includes advanced integrative studies and/or required participation in a learning community. These programs often combine broad themes—e.g., technology and society, global interdependence—with a variety of curricular and co-curricular options for students.

Learning Communities

The key goals for learning communities are to encourage integration of learning across courses and to involve students with "big questions" that matter beyond the classroom. Students take two or more linked courses as a group and work closely with one another and with faculty. Many learning communities explore a common topic and/or common readings through the lenses of different disciplines. Some deliberately link "liberal arts" and "professional courses"; others feature service learning.

4 Writing-Intensive Courses

These courses emphasize writing at all levels of instruction and across the curriculum, including final-year projects. Students are encouraged to produce and revise various forms of writing for different audiences in different disciplines. The effectiveness of this repeated practice "across the curriculum" has led to parallel efforts in such areas as quantitative reasoning, oral communication, information literacy, and, on some campuses, ethical inquiry.

Collaborative Assignments and Projects

Collaborative learning combines two key goals: learning to work and solve problems in the company of others, and sharpening one's own understanding by listening seriously to the insights of others, especially those with different backgrounds and life experiences. Approaches range from study groups within a course, to team-based assignments and writing, to cooperative projects and research.

6 Undergraduate Research

Many colleges and universities are now providing research experiences for students in all disciplines. Undergraduate research, however, has been most prominently used in science disciplines. With strong support from the National Science Foundation and the research community, scientists are reshaping their courses to connect key concepts and questions with students' early and active involvement in systematic investigation and research. The goal is to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions.

7 **Diversity/Global Learning**

Many colleges and universities now emphasize courses and programs that help students explore cultures, life experiences, and worldviews different from their own. These studies—which may address diversity, world cultures, or both—often explore "difficult differences" such as racial, ethnic, and gender inequality, or continuing struggles around the globe for human rights, freedom, and power. Frequently, intercultural studies are augmented by experiential learning in the community and/or by study abroad.

Service Learning, Community-Based Learning

In these programs, field-based "experiential learning" with community partners is an instructional strategy—and often a required part of the course. The idea is to give students direct experience with issues they are studying in the curriculum and with ongoing efforts to analyze and solve problems in the community. A key element in these programs is the opportunity students have to both apply what they are learning in real-world settings and reflect in a classroom setting on their service experiences. These programs model the idea that giving something back to the community is an important college outcome, and that working with community partners is good preparation for citizenship, work, and life.

Internships

Internships are another increasingly common form of experiential learning. The idea is to provide students with direct experience in a work setting—usually related to their career interests—and to give them the benefit of supervision and coaching from professionals in the field. If the internship is taken for course credit, students complete a project or paper that is approved by a faculty member.

Capstone Courses and Projects 10

Whether they're called "senior capstones" or some other name, these culminating experiences require students nearing the end of their post-secondary years to create a project of some sort that integrates and applies what they've learned. The project might be a research paper, a performance, a portfolio of "best work," or an exhibit of artwork.

From Association of American Colleges and Universities: Found online at http://www.aacu.org/leap/hip.cfm

Excerpt from High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter, by George D. Kuh (AAC&U, 2008)