

SPRING 2017 ePortfolio Development Community

Folio Thinking: Effectively Integrating ePortfolios into Your Curriculum

LEARNING OUTCOMES

These materials are adapted from Simon Fraser University's Rethinking Teaching workshop, building on work done at McGill University and detailed in Alenoush Saroyan and Cheryl Amundsen's 2004 book *Rethinking Teaching in Higher Education: From Course Design Workshop to a Framework for Faculty Development*.

Preparation for February 7

1. Based on January 24 feedback, continue to refine your concept maps and begin to rethink your course learning outcomes. Your learning outcomes should be based directly on your concept map; you should be able to explain how the learning outcomes are derived from the concept map.

Bring your “revised” learning outcomes with you today as we will begin to brainstorm/talk through ways in which portfolios can help students document their learning to meet those outcomes.

2. Reading – required:
 - a. Outcomes section ([below](#)) of Development Community resource binder or website.
 - b. Sections from *Documenting Learning with ePortfolios* in Chapters 1, 2 and 3 (esp. 41-49) specifically focused on learning outcomes and assessment.
 - c. [Learning Outcomes](#) page on the SLCC FACULTY EPORTFOLIO RESOURCE SITE [This online resource from SLCC provides examples of ways in which learning outcomes can connect to a range of assessment options, some of which may lend themselves to folio-oriented assignments.]
 - d. University of Waterloo – [Course Design Fundamentals](#) [Learning Outcome Slides 13-24.]
 - e. LBST 100 Learning Outcomes – Evolution [PDF. A record of how the LBST 100 learning outcomes have evolved as the program’s thinking about the role and function of portfolios within the Liberal Studies BA has deepened.]
 - f. LSBA Portfolio Integration [Power Point. Slides from presentation given at the AAEEBL Annual (July 2017) in Portland illustrating how ePortfolios and other high impact practices (HIPs) have been integrated into the Liberal Studies BA.]
 - g. WGST 222 Learning Outcomes – Evolution [PDF. A record of how the learning outcomes evolved over the course of the Spring 2017 ePortfolio Development Community.]

3. Reading – supplementary:

- a. Fink, L.D. (2003). A taxonomy of significant learning. [PDF on website. Provides another taxonomy (in addition to Bloom's) as a way of thinking about what this author terms "significant learning"; examples of learning outcomes associated with each type of learning.]
- b. Matthews-DeNatale, G. (2014). [Are We Who We Think We Are? ePortfolios as a Tool for Curriculum Redesign](#). *Journal of Asynchronous Learning Networks*. [PDF. A valuable discussion of a program redesign process, including learning outcomes, informed by a commitment to foregrounding [inquiry, reflection, and integration \(IRI\) as design principles](#), which are nested in [Connect to Learning](#) (C2L's) model for successful ePortfolio implementation.] *
- c. Northeastern University. [What We've Learned](#). [Overview of M.Ed. program redesign process described in the Matthews-DeNatale article above.] *

* Especially valuable for faculty interested in program-level ePortfolio initiatives.

4. Resource - supplementary:

- a. Fink, L.D. (2005). *A Self-Directed Guide to Designing Courses for Significant Learning*. [PDF. An example of how Fink approaches course design and redesign for significant learning.]

Objectives for February 7

1. Revise learning outcomes based on the feedback received on February 7.
2. Leave with emerging ideas for assignment and assessment design foregrounding opportunities for "folio thinking" and deepening/enhancing the students' ability to meet the course's stated learning outcomes. This emergent thinking will be further enhanced by the Assessment section materials and readings.

Suggested steps/advice for creating your course's learning outcomes

Adapted from "Characteristics of Good Learning Outcomes," accessed from UT's Centre for Teaching Support & Innovation" on 6 January 2017.

1. Plan for about one to three learning outcomes for every major topic in your course. Generally, a course has five to twelve learning outcomes.
2. Use very **specific** and **active language** well carefully selected verbs to make expectations clear. Where possible avoid terms such as "understand," "demonstrate," or "discuss" that can be interpreted in many ways.

VAGUE OUTCOME

By the end of the course, I expect students to increase their organization, writing, and presentation skills.

MORE PRECISE OUTCOME

By the end of the course, students will be able to:

- produce professional quality writing
- effectively communicate the results of their research findings and analyses to fellow classmates in an oral presentation

VAGUE OUTCOME

By the end of this course, students will be able to use secondary critical material effectively and to think independently.

MORE PRECISE OUTCOME

By the end of this course, students will be able to evaluate the theoretical and methodological foundations of secondary critical material and employ this evaluation to defend their position on the topic.

3. **Focus on the learner** rather than explaining what the instructor will do in the course; good learning outcomes describe the knowledge or skills that the student will employ, and help the learner understand why that knowledge and those skills are useful and valuable to their personal, professional, and academic future.
4. Be **realistic**, not aspirational: all passing students should be able to demonstrate the knowledge or skill described by the learning outcomes as the conclusion of the course. In this way, learning outcomes establish standards for the course.
5. Focus on the **application** and **integration** of acquired knowledge and skills: good learning outcomes reflect and indicate the ways in which the described knowledge and skills may be used by the learner now and in the future.
6. Indicate useful **modes of assessment** and the specific elements that will be assessed: good learning outcomes prepare students for assessment and help them feel engaged in and empowered by the assessment and evaluation process.
7. Offer a **timeline** for completion of the desired learning.
8. Refer to one of the taxonomies for learning domains on the follow pages to help you with articulating the level and specific skill or behaviour your students are to demonstrate.
9. Think about how you will measure the outcomes and whether your assessment methods will thoroughly determine whether the learning outcomes have been met.
10. Consult with colleagues – and students.
11. Be **flexible**: while individual outcomes should be specific, instructors should feel comfortable adding, removing, or adjusting learning outcomes if the initial outcomes prove to be inadequate.

When writing your outcomes, keep in mind . . .

Learning outcomes should be **SMART (TT)**:

SPEAK TO THE LEARNER: learning outcomes should address what the learner will know or be able to do at the completion of the course

MEASURABLE: learning outcomes must indicate how learning will be assessed

APPLICABLE: learning outcomes should emphasize ways in which the learner is likely to use the knowledge or skills gained

REALISTIC: all learners who complete the activity or course satisfactorily should be able to demonstrate the knowledge or skills addressed in the outcome

TIME-BOUND: the learning outcome should set a deadline by which the knowledge or skills should be acquired;

TRANSPARENT: should be easily understood by the learner; and

TRANSFERABLE: should address knowledge and skills that will be used by the learner in a wide variety of contexts

The SMART(TT) method of goal setting is adapted from Blanchard, K., & Johnson, S. (1981). *The one minute manager*. New York: Harper Collins.

Domains of Learning

Many educational specialists believe there are three main learning domains: cognitive, affective, and psychomotor. Each of these domains calls for a specific set of objectives. Psychomotor skills are not as common in university curricula, while affective objectives, though common, are rarely articulated.

Categories	Objectives
Cognitive (thought, or knowledge)	What the student is able to do
Affective (feelings, or choice)	How the student chooses to act
Psychomotor (physical skills)	What the student can perform

Depending on the learning domain, written objectives typically take one of two forms:

1. "Student will be able to," used for cognitive and psychomotor learning domains.
2. "Student will choose to," used for affective learning domain.

Suggested ways to critique your learning outcomes

Adapted from an archived page at the University of Wisconsin, La Crosse.

Once you have written your outcomes, ask yourself these questions:

1. Do the learning outcomes describe what my course intends for students to know, think, or do?
2. Can my learning outcomes be measured and/or observed? Is learning being demonstrated? If you cannot answer “yes” to both these questions, revise your outcome.
3. Are my outcomes specific and do they use active language so that my expectations are clear?
4. Are my outcomes focused on the learner, rather than explaining what I plan on doing in the course?
5. Can the outcomes be realistically achieved by all passing students?
6. Are they focused on students’ actions, rather than the subject matter?
7. Can I create an activity to enable students to learn the desired outcome?
8. How will I know if the learning outcome has been met? (Starts you thinking about your assessment.)
9. Who will be gathering the evidence to know that this outcome has been met? (Also starts you thinking about your assessment – e.g. self-assessment, peer-assessment, instructor-assessed?)
10. Will the learning outcome provide me with evidence that will lead me to make a decision for continuous improvement?

Resources

Bloom's revised taxonomy for the cognitive domain

Accessed via Simon Paul Atkinson's *enabling learning : educational technologies and social change* site on January 6, 2017: <https://spatkinson.wordpress.com/tag/blooms-taxonomy/>

Taxonomy of Educational Objectives Cognitive Domain

Version 3 – October 2012

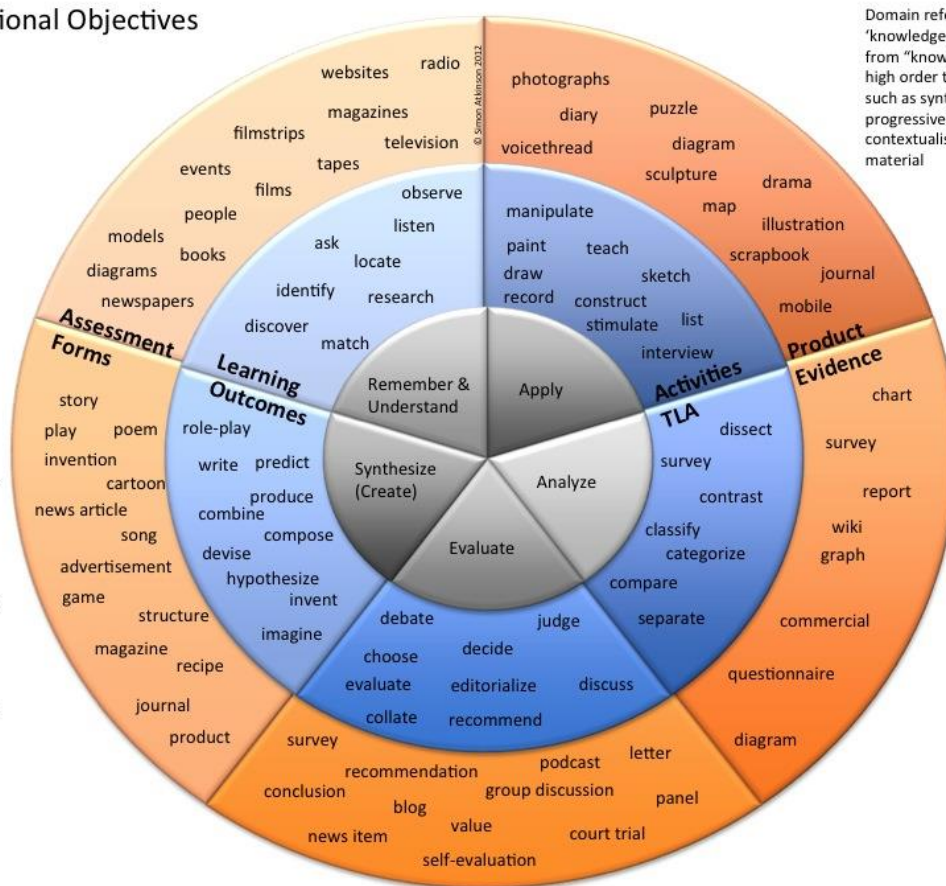
Remember & Understand – ability to recognise information and comprehend it and to recall and restate said information. *NB: Rather than reference this domain against a 'knowledge dimension' a separate structured Subject Domain is suggested.*

Apply – ability to apply factual information and presented theories, models and structures to real world contexts and problems.

Analyze – ability to construct complex relationships from single factual elements, reconstruct relationships and assess needs.

Evaluate – ability to make complex judgments about the nature of context, information and processes to establish new conclusions not represented in the original information.

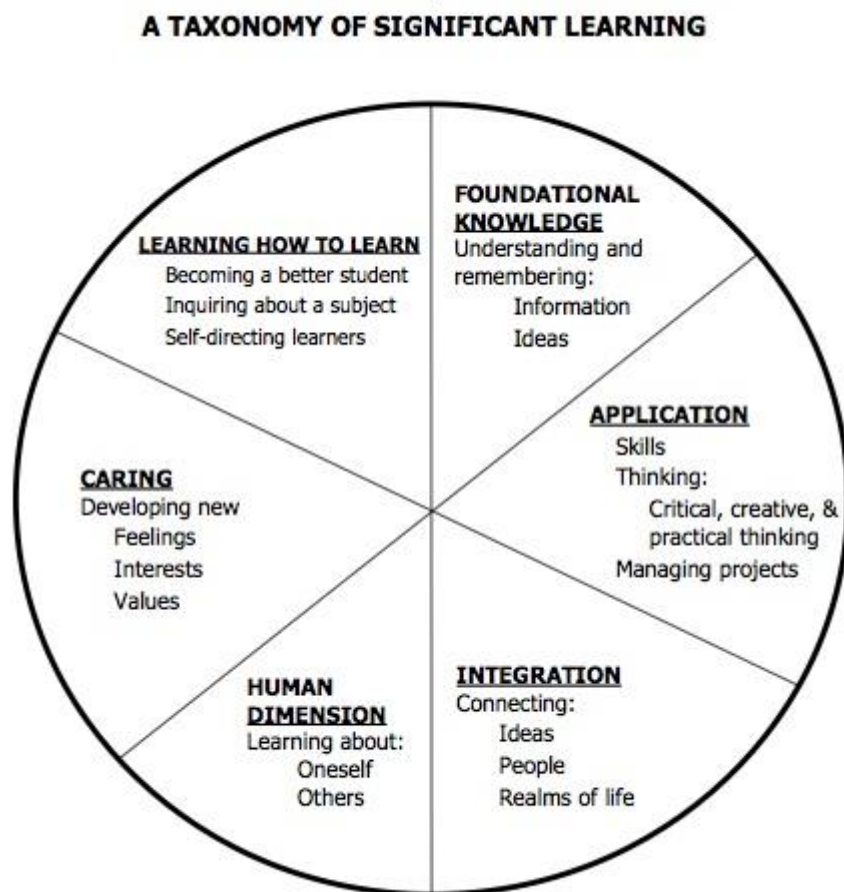
Synthesize – ability to create new representations of knowledge structures, combining complex assemblages of information in original contexts.



Atkinson 2010 adapted from

Anderson, L W, & Krathwohl D R (eds.) (2001). A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. NY, Longman

Fink's Taxonomy of Significant Learning



Fink, L.D. (2003). A taxonomy of significant learning (p. 30).

Levels of Thinking

REMEMBER Retrieving relevant knowledge from long-term memory	Instructional Objectives	Key Terms
Remembering requires the recall or recognition of specific elements in a subject area in a way similar to how it was learned. In its simplest form, this includes knowledge of the terminology and specific facts associated with an area of subject matter. At a more complex level, it means knowing the major sub-areas, methods of inquiry, classifications and ways of thinking characteristic of the subject area, as well as its central theories and principles. Testing for knowledge objectives requires that students offer the answer out of memory (fill-in the blank questions) or choose items from which they select a set of given alternatives (multiple choice questions).	• Knows common terms • Knows specific terms • Knows methods and procedures • Knows basic concepts • Knows principles • Knows how to carry out algorithms & simple computations (no decision making)	define, describe, identify, label, list, match, name, outline, recall, recognize, reproduce, state, compute
UNDERSTAND Determining the meaning of instructional message, including oral, written, and graphic communication	Instructional Objectives	Key Terms
Understanding goes one step beyond the simple remembering of material, and represents the lower level of understanding. It requires that the learner differentiate essentials of the message from aspects unimportant to the message. Understanding suggests that the learner comprehends or internalizes and systematizes the knowledge. Understanding may be shown by translate material from one form to another (words to numbers), by interpreting material (explaining or summarizing), or by extrapolating from the literal communication itself to determine implications, inferences, extensions or conclusions. The student is asked to translate,	• Chooses relevant information • Understands facts and principles • Interprets verbal material • Interprets charts, graphs, and problems • Knowledge of rules, principles, and generalizations	interpret, exemplify, select, classify, compare, convert, explain, extend, generalize, identify, predict, infer, paraphrase, rewrite, summarize,

comprehend, or interpret information based on prior learning.	Is able to follow a line of reasoning	distinguish, give an example
APPLY Carrying out or using a procedure in a given situation	Instructional Objectives	Key Terms
Applying refers to the ability to use or apply learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. The student is asked to select, transfer, and use data and principles to complete a problem task with a minimum of direction.	- Applies concepts and principles to new situations - Applies laws and theories to practical situations - Solves routine mathematical problems - Constructs charts and graphs - Demonstrates correct use of a method or procedure - Is able to analyze data	execute, implement, change, compute, discover, demonstrate, manipulate, modify, operate, prepare, predict, produce, relate, show, solve, use, construct
ANALYZE Breaking material into its constituent parts and detecting how the parts relate to one another and it an overall structure or purposes.	Instructional Objectives	Key Terms
Analyzing is the breakdown of a communication into its component ideas or parts so that the relative hierarchy of the ideas is made clear and/or the relations between the ideas are made explicit. 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. The learner must be able to identify the important elements in a communication and recognize the structure that holds the communication together. The student is asked to distinguish, classify, and relate the assumptions, hypotheses, evidence, conclusions, and structure of a statement or question. Analysis refers to what is called logic, induction and deduction, and formal reasoning.	- Classifies words and statements according to a given analytic criteria - Perceives and infers relationships between elements - Discovers similarities/differences - Discerns a patter, order or arrangement of materials - Infers particular qualities or characteristics not directly stated in the reading or lecture - Solves non-routine problems	classify, analyze, distinguish, organize, structure, compare, contrast, categorize, order, differentiate, outline, separate, subdivide, break down
EVALUATE		

Making judgments based on criteria and standards	Instructional Objectives	Key Terms
Evaluating is the making of judgments about the value of ideas, solutions, methods, or material. It involves the use of criteria as well as standards for appraising the extent to which particulars are accurate, effective, economical, or satisfying. The judgments may be quantitative or qualitative, and the criteria may be either self-determined or provided externally (Bloom, 1956, p. 195). Evaluation requires that the student make judgments about something he or she knows, analyzes, synthesizes, and so forth, on the basis of criteria which can be made explicit. Evaluation has two steps. The first step is to set up appropriate standards (criteria) and the second is to determine how closely the object or idea meets these standards.	• Judges the logical consistency of written material • Judges the adequacy with which conclusions are supported by data • Judges the value of a work (art, music, writing) by use of internal criteria • Judges the value of a work (art, music, writing) by use of external standards of excellence	critique, check, appraise, compare, conclude, contrast, criticize, describe, discriminate, explain, justify, interpret, relate, summarize, support
CREATE Creating something new based on some criterion	Instructional Objectives	Key Terms
Creating is putting together elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc., and arranging and combining them in such a way as to constitute a pattern of structure that was not there before. Therefore, students who create integrate and combine ideas into a product, plan, or proposal that is new to them. This cognitive process refers to what is called creative or divergent thinking.	• Writes a well-organized theme • Gives a well-organized presentation • Proposes a plan for an experiment • Integrates learning from different areas into a plan for solving a problem • Formulates a new scheme for classifying objects or events, or ideas • Generates missing links • Combines parts to form a whole • Develops a course of action • Generates a high-level conclusion • Explains why	combine, compile, compose, create, devise, design, explain why, generate, modify, organize, plan, produce, rearrange, reconstruct, relate, reorganize, revise, rewrite, elaborate, give reasons, or support

References

Originally created by Champlain College: PAREA Research Team – Winter 2004 based on:

- Taxonomy of Educational Objectives (Bloom, 1956)
- Krathwohl, D.R. (2002). A revisions of Bloom's taxonomy: An overview. *Theory into Practice*, 41 (4), 212-217.

Verbs often associated with different levels of cognitive domain

Knowing

define
relate
recall

label
distinguish
list

identify
memorize
recognize

Understanding

classify
review
organize
generalize
explain

report
estimate
identify
illustrate
apply

interpret
restate
demonstrate

Thinking

analyze
propose
categorize
justify
produce
develop
criticize

rate
appraise
argue
deduce
contrast
solve
assess

formulate
compare
evaluate
synthesize
judge
originate
contrast

Adapted from LaSere Erickson, B. & Weltner Strommer, D. (1991). *Teaching College Freshman*. San Francisco: Jossey Bass.

Bloom's Taxonomy
Cognitive Domain – Thinking and Knowledge

Knowledge					
Comprehension		Application		Synthesis	Evaluation
Remembers previously learned material.	Grasps the meaning of material – lowest level of understanding	Uses learning in a new and concrete situation – higher level of understanding	Understands both the content and structure of material.	Formulates new structures from existing knowledge and skills.	Judges the value of material for a given purpose.
cite define describe numerate identify indicate label list match name outline point recall recognize reproduce select state tabulate write	approximate articulate associate characterize clarify classify compare compute contrast convert differentiate describe discuss estimate explain give example interpret locate paraphrase predict	adapt apply assign calculate classify complete construct demonstrate determine discover employ explore expose factor illustrate investigate manipulate modify predict prepare	analyze break down categorize compare contrast correlate detect differentiate discriminate examine figure out group manage maximize minimize optimize order outline select separate	arrange assemble budget code combine compile construct create cultivate design develop enhance explain facilitate formulate generalize generate improve integrate plan	assess conclude counsel criticize critique defend estimate evaluate grade interpret judge justify measure predict prescribe rank rate recommend release select

	review summarize	produce relate simulate solve	train transform	prepare produce propose revise specific	support test validate verify
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Simpson's Taxonomy
Psychomotor Domain – Doing / Skills

Perception	Set	Guided Response	Mechanism	Complete Overt Response	Adaptation	Origination
Senses cues that guide motor activity.	Is mentally, emotionally, and physically read to act.	Imitates and practices skills often in discrete steps.	Performs acts with increasing efficiency, confidence, and proficiency.	Performs automatically.	Adapts skill sets to meet a problem situation.	Creates new patterns for specific situations.
detect hear listen observe identify recognize see sense smell taste view watch	achieve posture; assume a body stance; establish a body position; place hands, arms, etc.; sit stand station observe organize respond	copy imitate manipulate w/ guidance; operate under supervision; practice repeat try reproduce match	complete w/ confidence; conduct demonstrate execute improve efficiency increase speed make show dexterity perform assemble manipulate set up	act habitually advance w/ assurance; control direct excel guide maintain efficiency manage master organize perfect perform automatically; proceed coordinate integrate combine regulate refine	adapt reorganize alter revise change adjust standardize	designs originate combine compose construct formulate develop

Krathwohl-Bloom's Taxonomy
Affective Domain – Feeling / Attitude

Characterization by Value				
Receiving	Responding	Valuing	Organization	
Selectively attends to stimuli.	Responds to stimuli.	Attaches value or worth to something.	Integrating a new value into one's general set of values, giving it some ranking among one's general priorities.	Acting consistently with the new value.
accept acknowledge be aware notice tolerate pay attention listen	agree to answer freely assist care for communicate comply consent cooperate participate visit volunteer	adopt assume responsibility behave accordingly choose commit desire express prefer seek show concern	adjust arrange balance classify formulate organize rank theorize	act upon advocate defend exemplify influence justify behaviour support maintain serve

Examples

Example #1 – SFU Rethinking Teaching Workshop

See Concept Map in **Content** section – Example 1.

Overall workshop outcome: Come to view your teaching and your students' learning as open to questioning and investigation – adopt a “spirit of inquiry” about your teaching.

Specific workshop outcomes:

1. Describe the entire course development process.
 - a. Appreciate the interdependency of course components – i.e. content, learning outcomes, assessment methods, and teaching and learning strategies.
2. Use concept mapping in selecting and organizing course concepts.
3. Articulate clear and appropriate learning outcomes for your course.
 - a. Recognize and be able to explain the importance of learning outcomes that refer to different types of learning – e.g. levels of cognitive learning or affective learning.
 - b. Be able to explain the difference between “shallow” and “deep” approaches to learning.
4. Assess the strengths and weaknesses of various instructional strategies in relationship to your specified learning outcomes.
 - a. Explain the difference between *learning-centred* teaching, *student-centred* teaching, and *instructor-centred* teaching, and why differences may be significant to consider.
 - b. Shift your attention from “teaching” to how you can best support student learning.
 - c. Be able to provide a well-grounded reason for why you teach as you do, based on supporting student learning.
 - d. Provide your own argument for using a variety of teaching and learning strategies.
 - e. Be able to explain why the notion of “transparent teaching” is important to student engagement.
5. Assess the strengths and weaknesses of various assessment methods in relationship to your specified learning outcomes.
 - a. Be able to explain why the ways in which learning is assessed essentially define what students will learn best.
 - b. Provide your own argument for using a variety of assessment methods.
6. Demonstrate skill and self-confidence in making instructional decisions.
7. Develop a complete course outline by the end of the workshop.

Example #2 – Learning Outcomes for Advanced Neurology 582 **Karen Koopferstock, PhD**

Following this course, the students will be able to

- Identify potential complications secondary to a severe neurological event and explain their risk factors, pathogenesis and timeframe for occurrence.
- Develop a treatment plan that incorporates prevention and treatment of secondary complications.
- Justify why evaluation methods of these clients sometimes need to be modified and explain various ways of modifying an assessment.
- Write a prioritized patient problem list including realistic short term and long term goals.
- Develop treatment ideas that focus on the main problem area and also incorporate the associated problems.
- Manipulate the components of a wheelchair, adjust walking aids, transfer patients and demonstrate some treatment handling techniques for low level patients.

Example #3 – Learning Outcomes for EDUC 473 – Designs for Learning Reading **Paul Neufeld, Faculty of Education, SFU**

By the end of this semester

- You will create 3 year-long instruction plans for reading for the grade level/course you are preparing to teach.
- You will be able to identify, evaluate, and select appropriate instructional materials and methods of instruction using your understanding of the phases of reading development, cognitive processes related to reading, and factors relevant to the context of your classroom and school.
- You will be able to collect, analyze, and interpret data that provides information regarding students' levels of development in literacy and use this information in the planning process.
- You will view yourself as an emerging and engaged member of the reading education discourse community.

Example #4 – Learning Outcomes for EDUC 473 – Designs for Learning Reading **P.W. Coddington, Department of Chemistry, University of Victoria**

At the end of the course the student will be able to

- Understand the molecular basis for the properties of every materials.
- Determine the electronic structure of an atom and understand the theoretical basis for the arrangement of electrons.
- Determine the nature of chemical bonding in molecules and ions using the periodic table.
- Predict the shape of covalent molecules.
- Identify types of intermolecular forces and predict those that are important for a given molecule.
- Relate the chemical and physical properties of substances to molecular structure, chemical bonding, and intermolecular interactions.
- Identify organic functional groups and understand their chemical reactivities.
- Identify and name isomeric hydrocarbon structure.