جـامـعـة كـالـجـاري في قـطـر
UNIVERSITY OF CALGARY IN QATAR

Course Outline Working Session

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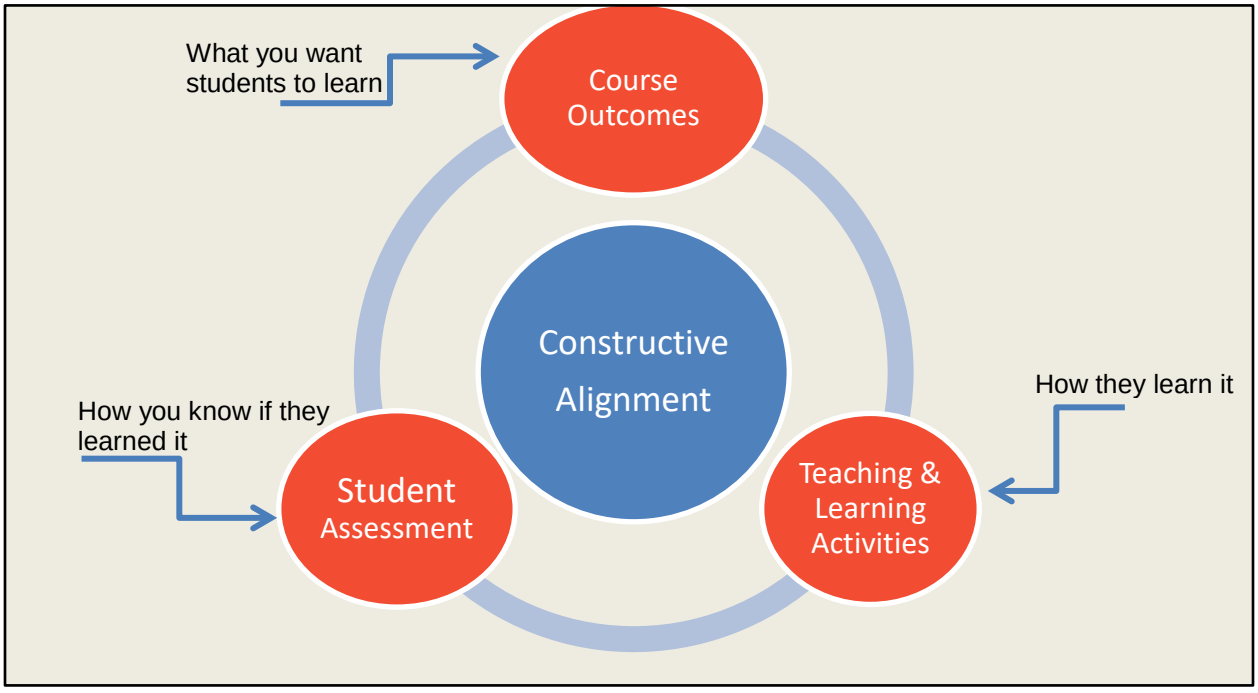

Biggs, 2007

Facilitators

Dr. Frances Kalu, Teaching and Learning Specialist
Centre for Teaching and Learning, University of Calgary in Qatar
fukalu@ucalgary.ca

Dr. Gilles Doiron, Teaching and Learning Specialist
Centre for Teaching and Learning, University of Calgary in Qatar
jagilles.doiron@ucalgary.ca

*Adapted from the Course Design Program Manual, University of Calgary. Contributing authors Patti Dyjur, Patrick Kelly, Lin You, Haboun Bair, Rosaline Pedersen & D'Arcy Norman

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Introduction

Course outlines are concise documents that contain important information about a course. It usually contains various components including the course description, expected course outcomes, teaching and learning activities, assessment, class expectations, grading structures and generic policies. It is a legal document and acts as a guide for both the instructor and the students.

In the following sections, we will review developing course outcomes, constructive alignment, teaching and learning activities, and assessment activities.

Course Outcomes

Course outcomes are statements of what students should be able to accomplish at the completion of a course. It can be both content and non-content focused. Course outcomes should be concise and written as a goal students may achieve.

To facilitate student's focus on their learning and achievement, keep one learning outcome per statement, and write as many statements as required (often five to ten) to prevent vagueness in individual statements. By sharing course outcomes with students, they can create a roadmap of the course and discover purpose for specific objectives.

One way to approach writing of course outcomes is to look at Bloom's Taxonomy (1956), a classification of the knowledge, skills and abilities that you want students to learn. Lower level thinking skills include remembering and understanding. Since the model is hierarchical, students must have the basic knowledge in order to achieve higher levels of learning, including applying, analyzing, and evaluating concepts, and creating new ideas. These points give a basic description of the different levels of thinking:

- Remembering (knowledge): Retrieving pertinent knowledge from long-term memory
- Understanding (comprehension): Constructing meaning from information by interpreting, summarizing, inferring, comparing, or explaining
- Applying (application): Solve problems, use information in new situations and apply a procedure
- Analyzing (analysis): Breaking content into components, and determining the relationship of each component to one another and overall
- Evaluating (evaluation): Making judgments based on standards or criteria
- Creating (synthesis): Putting elements together to form meaning, generating new patterns or structure using existing elements

Examples of Course Outcomes

By the end of this course, students should be able to assess the relationship between two variables using the appropriate measure of association.

By the end of this course, students should be expected to administer academic assessments (e.g. nomothetic, CBM) using standardized procedures.

By the end of this course, students should be able to create a multi-layered piece of artwork using Adobe Photoshop, demonstrating technical skills, aesthetic principles of composition, and conceptual awareness.

Cognitive Domain

The cognitive domain (Bloom, 1956) involves knowledge and the development of intellectual abilities. This includes the recall or recognition of facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills.

Cognitive Domain

Category	Key Verbs	Examples
Remember: Retrieve relevant knowledge from long-term memory.	tell, list, recognize, describe, recite, locate, label, identify, memorize, define, match, name, outline, recall, reproduce, select, state	Students should be able to: *Locate* different countries on the world map. *Identify* styles of architecture in urban settings, such as Doha.
Comprehend: perceive meaning and grasp mentally	explain, describe, clarify, compare, generalize, summarize, extend, paraphrase, represent, exemplify, illustrate, classify, contrast, convert, distinguish, instantiate, estimate, give examples, infer, interpret, rewrite, arrange, match, paraphrase	Students should be able to: *Compare* different artistic painting styles. *Explain* the formation process of igneous rock.
Apply: Carry out or use a procedure or process theory in a given situation	solve, show, classify, use, execute, carry out, implement, choose, report, apply, compute, construct, demonstrate, manipulate, modify, operate, prepare, produce	Students should be able to: *Solve* linear equations. *Use* rhetorical activities to make arguments in writing.
Analyze: Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose.	analyze, sort, contrast, investigate, separate, differentiate, break down, compare, diagram, deconstruct, illustrate, infer, outline, relate, organize, integrate, structure, calculate, modify, solve	Students should be able to: *Differentiate* between plant and dwarf plant. *Sort* a given set of plants by genus or species.
Evaluate: Make judgments based on criteria and standards	judge, select, decide, debate, justify, verify, argue, assess, prioritize, predict, appraise, conclude, critique, defend, evaluate, estimate, test	Students should be able to: *Debate* the extent to which human activities might affect climate change. *Critique* the methodology section of a research article.
Create: Put elements together; reorganize elements into a new pattern or structure.	create, invent, design, devise, formulate, hypothesize, produce, generate, plan, construct, compile, compose, organize, write	Students should be able to: *Generate* a business plan based on the clients' needs. *Produce* an Individual Program Plan (IPP) for students with a learning disability.

Affective Domain

The affective domain (Krathwohl, Bloom & Masia, 1973) includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasm, motivation, and attitudes.

Category	Key Verbs	Examples
Receive: Open to experience; willing to listen	ask, listen, focus, attend, take part, discuss, acknowledge, hear, read	Students should be able to: *Listen* to new information with neutrality.
Respond: React and participate actively	react, respond, seek, discuss, interpret, clarify, provide additional examples, contribute, question	Students should be able to: *Participate* actively in a group by contributing to or building on new ideas.
Value: Identify values and express personal opinions	demonstrate, differentiate, explain, justify, propose, affirm	Students should be able to: *Demonstrate* sensitivity towards individual and cultural differences.
Conceptualize Values: Reconcile internal conflicts; develop value system	Build, develop, formulate, defend, modify, relate, prioritize, reconcile, contrast, arrange, compare, propose, verify	Students should be able to: *Prioritize* emergency responses after a disaster.
Internalize Values: Adopt belief system and philosophy	act, display, influence, solve, practice, propose, revise, defend, organize	Students should be able to: *Revise* judgments and change behavior in light of new evidence.

Psychomotor Domain

The psychomotor domain (Simpson, 1972) includes physical movement, coordination, and use of the motor skills.

Category	Key Verbs	Examples
Imitate: Copy action of another; observe and replicate	Copy, follow, replicate, repeat, adhere	Students should be able to: *Observe* and *copy* dance steps.
Execute: Reproduce activity from instruction or memory	Re-create, build, perform, execute, implement, follow	Students should be able to: *Follow* instructions to dissect a shark.
Perform: Execute skill reliably, independent of help	Demonstrate, complete, show, perfect, calibrate, control, measure	Students should be able to: *Fix* a leaking faucet.
Adaption: Adapt and integrate expertise to satisfy a new objective	Construct, solve, combine, coordinate, integrate, adapt, develop, formulate, modify, master, illustrate	Students should be able to: *Drive* a vehicle in various weather conditions.
Naturalize: Create new movement to fit a particular situation or specific problem.	Design, specify, manage, invent, convert, create, fix, generate, plan	Students should be able to: *Create* a new gymnastic routine.

Course outcome Review Checklist

Use the checklist below for a quick review of each outcome developed.

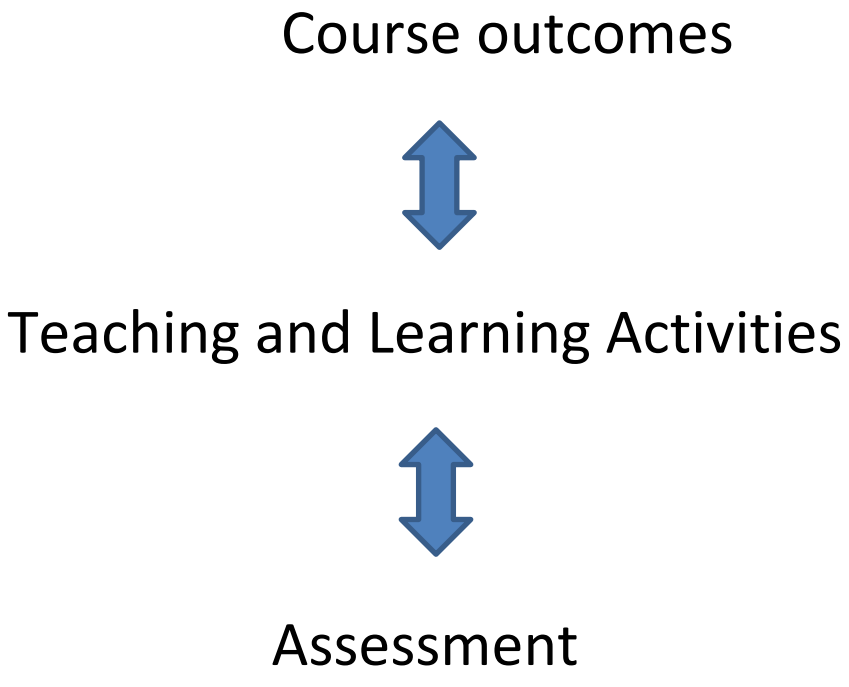
Outcome:

Is the learning outcome measurable?	Comment:
Does the learning outcome target a discrete aspect of expected performance?	Comment:
Is the learning outcome student centered?	Comment:
Does the learning outcome utilize an effective, action verb that targets the desired level of performance?	Comment:
Does the learning outcome match instructional activities and assessments?	Comment:
Does the learning outcome specify appropriate conditions for performance?	Comment:
Is the learning outcome realistic given constraints of time and resources?	Comment:

Constructive Alignment

Constructive alignment is a term used to describe the fidelity between course outcomes, student assessment, and teaching and learning activities (Biggs, 2007). There should be a direct relationship between what we want students to achieve in our course, how we are assessing achievement and teaching and learning activities used in the course.

Constructive alignment



Course Outcome Alignment Chart

For each course outcome, state the methods used to measure student learning and activities to promote learning

Course Outcome *What should students be able to do, know, or value by the end of the course?*	**Assessment Item(s)** *What assessment methods will provide evidence that students have achieved the course-learning outcome? How will you give feedback to students regarding their performance?*	**Teaching and Learning Activities** *What teaching methods will you use to support students understanding and learning of the course outcome?* *What learning activities will students be doing to enhance learning of the course outcomes?*	**Level of Bloom's Taxonomy**		
			Remember/ Comprehend	Apply/ Analyze	Evaluate/ Create

For each course outcome, state the methods used to measure student learning and activities to promote learning

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			Remember/ Comprehend	Apply/ Analyze	Evaluate/ Create

Student Assessment

Once the course outcomes are developed, the next step is to consider how to determine if students have met those outcomes and especially how well they have met the intended outcomes. There are various ways to assess students learning including – multiple choice exams, papers, presentations, learning journals, project reports, problem solving, peer evaluations amongst others.

Assessment is an ongoing process that should take place throughout the learning process using different approaches.

Types of assessment approaches include (but are not limited to):

- Formative assessment or Assessment *for* learning approach refers to activities designed to make each student's understanding visible, so that instructors can decide what they can do to help students progress by adjusting their teaching. Instructors use formative assessment as an investigative tool to find out as much as they can about what their students know and can do, and what confusions, preconceptions, or gaps they might have.

- Self-Assessment - Assessment *as* learning approach refers to activities designed as ongoing self-assessment for students to monitor their own learning. The assessment approach is characterized through the process of students reflecting on their own learning and making adjustments so that they achieve deeper understanding. Assessment as learning focuses on students, and emphasizes assessment as a process of metacognition (knowledge of one's own thought processes).

- Summative Assessment - Assessment *of* learning approach of learning refers to activities designed to confirm what students know and demonstrate whether they have met the course outcomes and at what proficiency or level.

Examples of Assessment Strategies

1. **One-Sentence Summary**
   This technique enables instructors to find out how concisely, completely, and creatively students can summarize a large amount of information on a given topic. Students summarize the essence of the topic in one sentence.

2. **Concept Maps**
   Concept maps are drawings or diagrams showing the mental connections that students make between a major concept the instructor focuses on and other concepts they have learned. This enables the instructor to see the growth and changes in students' conceptual understanding based on learnings and the students have a visual representation of the changes in their thinking.

3. **Annotated Portfolio**
   An annotated portfolio is a curated collection of students work from a course, along with the student's reflective explanation of each work in relation to the topic. It provides an opportunity for instructors to see well students can apply what they have learned and how well they can explain their applications.

4. **Anecdotal Notes**
   These are short notes taken by the instructor during a lesson as students work in groups or individually, or after the lesson is complete. The instructor reflects on a specific aspect of the learning and make notes on the student's progress toward mastery of the outcome. The instructor can use this notes for adjusting instruction based on student needs.

5. **Patchwork Test**
   Students undertake, week by week, a series of short pieces of writing in different forms – e.g. a description, a critical incident analysis, a response to a published piece of writing. Each week, the students share their writing in small groups in order to gather differing responses from three or four readers. The final assignment (i.e. the Patchwork Text) is a selection of their writing (possibly revised and not necessarily in the order in which it was written) presented within an interpretative reflective framework which brings out and explores the overall theme in relation to the individual pieces of writing (Akister, 2003). *Guideline attached as an appendix*.

6. **The Minute Paper**
   At an appropriate break, ask students to answer on paper a specific question pertaining to what has just been taught. After a minute or two, collect the papers for review after class, or, to promote class interaction, ask students to pair off and discuss their responses. After a few minutes, call on a few students to report their answers and results of discussion. If papers are turned in, there is value to both the anonymous and the signed approach.

7. **In Class Survey**
   Think of this as a short, non-graded pop quiz. Pass out a prepared set of questions, or have students provide answers on their own paper to questions on a PowerPoint/Keynote slide. Focus on a few key concepts. The idea is to assess whether students understand what is being taught.

8. **Exit Ticket**
   Select one of the following items and near the end of class ask your students to write on a sheet of paper 1) a question they have that didn't get answered, 2) a concept or problem that they didn't understand, 3) a bullet list of the major points covered in class, or 4) a specific question to access their learning. Students must hand in the paper to exit class. Allow anonymous response so that students will answer honestly. If you do this regularly, you may want to put the exit ticket question on your final PowerPoint/Keynote slide.

9. **Mini Objective Structured Clinical Examination (Mini OSCEs)**
   Objective Structured Clinical Examination (OSCEs) is a form of performance-based testing used to measure candidates' clinical competence. During an OSCE, candidates are observed and evaluated as they go through a series of stations in which they interview, examine and treat standardized patients (SP) who present with some type of medical problem. On a reduced scale, smaller scenarios are developed with fewer stations hence leading to a mini – OSCE.

10. **Who wants to be a millionaire?**
    For each group of students, one student earns the right to become the first contestant (take the "hot seat") by answering and explaining the answer to the first question correctly.
    Once in the hot seat, the contestant continues answering questions until they are unable to choose and explain the correct answer to a question. They are then replaced with a new contestant.
    When uncertain, contestants have three lifelines (assistance) to help obtain the correct answer. They may ask a friend in the group; ask the audience or whole group; or have two incorrect

answers removed, narrowing their choice. These lifelines are available only once to each contestant.
Prizes are available at various stages, after nominated numbers of questions are answered. Question difficulty increases as the quiz continues, culminating in the million-pound question, number 15 (Hudson & Bristow, 2006).

Valid Student Assessments

What is a valid student assessment?

- It assesses what it is supposed to assess
- You probably want to assess student learning of your course outcomes
- It should also fulfill the purposes you have identified

Example of a valid student assessment:

Course Outcome	How it is Assessed
By the end of the course, students will be expected to describe the developmental issues encountered by school-aged children (Douglas College, n.d.)	Short-answer questions on the midterm Term paper

Example of student assessment lacking validity

Course Outcome	How it is Assessed
By the end of the course, students will be expected to evaluate classic and contemporary psychological findings related to emotion, stress and health (Thompson Rivers University, n.d.)	Multiple-choice exam questions

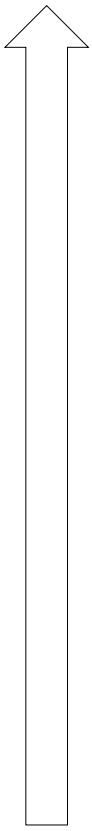
Check the validity of your assessments

Course Outcome	How it is Assessed

Teaching and Learning Activities

Teaching and learning activities are various methods and techniques used by the instructor to support students learning in the classroom. There should be a fidelity between your course outcomes, assessment and teaching and learning activities used in the classroom. Therefore, when selecting teaching and learning activities to use in your course, think about what will best support students in achieving the identified course outcomes. For example, if one of your course outcomes is for students to analyze conflicting or incomplete information, yet your student assessment instruments are multiple-choice exams, there will not be any evidence that students analyzed information.

The chart below gives some examples of teaching and learning activities aligned to various levels of thinking.



Levels of Thinking	Verbs	Teaching and Learning Activities
Create	Create, invent, predict design, devise, formulate, infer, hypothesize, produce	Design a survey, construct a concept map, participate in a role play, generate a plan, compose a song or a poem, develop a proposal to redesign a rural healthcare system
Evaluate	Judge, select, decide, debate, justify, verify, argue, assess, prioritize	Participate in a debate, panel discussion, prepare a case to present your view
Analyze	Analyze, sort, contrast, investigate, separate, defend, predict, differentiate, break down	Derive information from a flowchart, write an investigative paper, defend a statement
Apply	Solve, show, illustrate, model, draw, classify, use	Use a formula to solve a math problem, construct a model, classify items according to a given criteria
Comprehend	Explain, discuss, describe, compare, generalize, summarize, extend, paraphrase, match	Illustrate a main idea, summarize, match, do a diagram, graph
Remember	Tell, list, describe, locate, label, identify, memorize, define, describe	Write multiple choice questions, read, listen to lectures, write an item list, make a timeline

Aligning Teaching and Learning Activities

Teaching and learning activities can be divided into two components: **Teaching activities** and **learning activities**. Teaching activities are what the instructor does to facilitate student learning. For example, during class an instructor might assign readings, do a presentation, lead a discussion, and assign homework. Learning activities are what the students do throughout the process. This might include readings, studying, listening to lectures, participating in discussions and group activities, working through examples, completing homework, and preparing for exams.

The following TLA form should help in deciding which teaching and learning activities are most appropriate for students to meet the course outcomes. This TLA form is intended to ensure TLA's are aligned with your course outcomes and student assessment plans, and should be completed as general as possible.

Course Outcome	Teaching and Learning Activities	Student Assessment
	Teaching: Learning:	
	Teaching: Learning:	
	Teaching: Learning:	

Example:

Consider both the outcome and student assessment when strategizing which teaching and learning activities will best prepare students to achieve the course outcome, “By the end of the course, students should be able to hypothesize the impact of climate change on the water cycle”.

This outcome is written at the Create level of Bloom’s Taxonomy. Student assessments will enable students to demonstrate their ability to hypothesize, generate solutions to, or formulate ideas on how or if climate change impacts the water cycle. Therefore, teaching and learning activities could be small group discussions, watching movies, reading the text, lecturing, demonstrations, worksheets, and answering questions in class. Activities should align with assessments to give consistency to the course design.

Course Outcome	Teaching and Learning Activities	Student Assessment
By the end of the course, students should be able to hypothesize the impact of climate change on the water cycle.	Teaching: lecture on climate change and water cycle details, provide resources such as movies or diagrams, setting up small group discussion and have them work on case studies or other problems. Learning: take notes during lecture, completing in-class activities, group discussions, answering questions, complete out of class readings and assignments.	Midterm: Case study having student analyze a situation and propose solutions. Some short answer and multiple-choice questions to assess foundational knowledge on topics. Final Project: Poster Presentation of a real-world issue. Students also submit a brief summary.

Examples of Teaching and Learning Activities

Some teaching and learning activities include:

1. **Think – pair - share**
   Each person considers the topic/question and writes down some ideas/answers. S/he joins with one other person for discussion. This provides a good basis for wider discussion.

2. **'Buzz' groups**
   Working in small groups, people discuss and issue. Topics can include:
   - What they already know about a topic
   - What they are not sure about
   - Opinions on topic

3. **Case studies**
   A 'story' or scenario is presented to the group. Groups discuss the story or work together on questions.

4. **Group discussion**
   Groups (up to six people) talk about a topic. A set of questions from the lecturer helps to structure the discussion and focus the group. The larger the group, the more difficult it is for everyone to participate actively.

5. **Fishbowl**
   One group discusses a topic. The second group observes the discussion and each person records:
   A partner's contributions (and gives individual feedback afterwards), or
   The important parts of the discussion (may be identification of issues, applications, generalizations, etc., depending on the task instructions)

6. **Presentations**
   Individuals or small groups find information on a topic, then prepare and deliver a short informative session to the wider group.

7. **Panel**
   Several 'experts' are invited to the session and answer questions from the class.

8. **Question and answer session**
   This is a useful activity to check students' understanding. A time is set aside for a discussion/answer session. Questions may be submitted in writing at the previous session (good for shy students), or they may be oral.

9. **Group Project**
   Groups of students work together on a project(s) that entails researching and presenting (written and/or oral) information. Useful for focusing on group and cooperative skills while covering discipline content.

10. **Brainstorming**
    Everyone thinks of as many different ideas as possible. All ideas are accepted and recorded without comment. The ideas are evaluated after a set time period or when inspiration ends.

11. **Student/teacher role swap**
    The facilitator asks students to write their ideas/information on the white board and then explain them. S/he places several white board pens on the desk and sits with class members.

12. **Matching**
    This activity is one way to divide a large group into pairs. Members of the group are given cards, which contain either a title or a definition. They have to find the person with the complementary card. In finding their partners, they come across a range of definitions and have to think about the topic. Content can be simple or complex depending on people's abilities. The pairs then work together on an exercise/problem related to their title and definition. Reporting afterwards widens the learning.

13. **Withdrawal**
    While groups works together or alone on set work, the lecturer spends time with individual students or small groups. The individual assistance can be rotated through the course so that everyone gets a turn, or it can focus on people who need extra help.

14. **Concept maps**
    A topic is written on the board. The class/group suggests and organizes ideas and information, presenting them visually, often in clusters. Students often enjoy writing on the board (bring several whiteboard pens); where numbers are large, this activity is better carried out in groups with a display of the results.

15. **Organizing information**
    Information items are provided out of sequence. Students work (in pairs or small groups) to arrange them in order. The results can then be reported by each group and/or discussed by the wider group. The information can be given to students on a single worksheet or already cut into pieces for them to arrange in order.

16. **'Ignorance'**
    Before the class begins, students consider what they would like to know by the end of the session. They write down some questions - five is a good number to aim for. Some students may like to share their questions, which can be recorded on the board. The students write more questions at the end of the session. These questions are likely to be different from the earlier ones; they should involve a higher level of thinking; there may well be more of them; and they can be a useful basis for further private study.

Reference:

Teaching and Educational Development Institute. (2006). *Activities for doing small group work in large classes.* University of Queensland. http://www.tedi.uq.edu.au.largeclasses/.

Resources:

Herrman, W. J. (2016). *Creative teaching activities for the nurse educator* (2nd ed.). Philadelphia, United States: F.A Davies

References

Akister, J. (2003). 'Designing and using a patchwork text to assess social work students undertaking a module in family therapy', *Innovations in Education and Teaching International, 40* (2), pp. 202-208.

Biggs, J. & Tang, C. (2007). *Teaching for quality learning at university* (3rd ed.). McGraw-Hill: Society for Research into Higher Education & Open University Press.

Bloom, B.S. (1956). *Taxonomy of educational objectives: The classification of educational goals.* Susan Fauer Company, Inc.

Hudson, J.N. and Bristow, D.R. (2006). 'Formative assessment can be fun as well as educational', *Advances in Physiology Education*, 30, pp. 33-37

Kennedy, D., Hyland, A., & Ryan, N. (2006). Writing and using learning outcomes: A practical guide. In Froment, E., Kohler, J. Purser, L., & Wilson, L. (Eds.): *EUA Bologna Handbook – Making Bologna Work.* Retrieved from http://www.tcd.ie/teaching-learning/academic-development/assets/pdf/Kennedy_Writing_and_Using_Learning_Outcomes.pdf

Krathwohl, D. R., Bloom, B.S. & Masia, B.B. (1973). *Taxonomy of educational objectives, the classification of educational goals. Handbook II: Affective domain.* New York: David McKay Co. Inc.

Taylor Institute for Teaching and Learning. (n.d.). *Program-level learning outcomes.* University of Calgary. Retrieved from http://itsotlcweb01.ucalgary.ca/taylorinstitute/teaching-community/node/161