Course Design through Constructive Alignment

Constructive Alignment is an approach to course design which begins with the end in mind (i.e. what should students know and be able to demonstrate at the end of the course). It assumes that when learning objectives, assessment methods, and teaching and learning activities are intentionally aligned, that the outcomes of learning are improved substantially (Blumberg, 2009). The process of constructive alignment emphasizes that students are <u>central</u> to the creation of meaning, and must be provided with opportunities to actively select, and cumulatively construct their own knowledge (Biggs, 1996). Meyers and Nulty (2009, p.567) provide 5 curriculum recommendations for designing a course based upon Biggs' approach to constructive alignment.

> To maximise the quality of learning outcomes, we, as academics, need to develop courses in ways that provide students with teaching and learning materials, tasks and experiences which:
> (1) are authentic, real-world and relevant;
> (2) are constructive, sequential and interlinked;
> (3) require students to use and engage with progressively higher order cognitive processes;
> (4) are aligned with each other and the desired learning outcomes; and
> (5) provide challenge, interest and motivation to learn.
>
> The effect of applying these principles is to [create a] learning system in ways that require students to adopt a deep learning approach in order to meet the course's assessment requirements – which, in turn, meets the desired learning outcomes.

They further emphasize that teaching is inherently complex, and that these principles must be adapted to each instructor's individual teaching approaches, strengths and to the realities that we face in the many varying contexts in higher education. Fink's (2003) 5 principles of course design also provide some practical insight, which can be adapted to the many varying context that we may face:

(1) Challenge higher level of learning, by defining learning objectives at a high cognitive level
(2) Use active forms of learning
(3) Give frequent and immediate feedback

    (4) Use structured sequence of teaching and learning activities to scaffold learning

    (5) Use objective and fair systems of grading and assessment

Backwards Course Design

There is little doubt that individual instructor's can have an enormous impact on the quality of students' learning experience and on the outcomes they achieve, "…high level engagement ought not be left to serendipity, or to individual student brilliance, but should be actively encouraged by the teacher" (Biggs, 1996, p. 353). The process of constructive alignment begins by defining clearly the course learning objectives, such that both the students and instructor are aware of the essential knowledge and abilities that they should be able to demonstrate at the end of the course. Once the learning objectives are clearly defined, the feedback and assessment methods that provide an opportunity for the students and instructor to formatively and summatively assess their achievement of these objectives should be articulated and developed. Meyers and Nulty (2009) suggest that assessment tasks should hold together and sequence all other course components. The final step in this dynamic cycle is to plan the teaching and learning activities that best support an active and deep approach to learning. Knight (2001) describes this stage as drawing together the *processes, encounters and engagements* that best make for effective learning, given both the context and the subject-matter content.
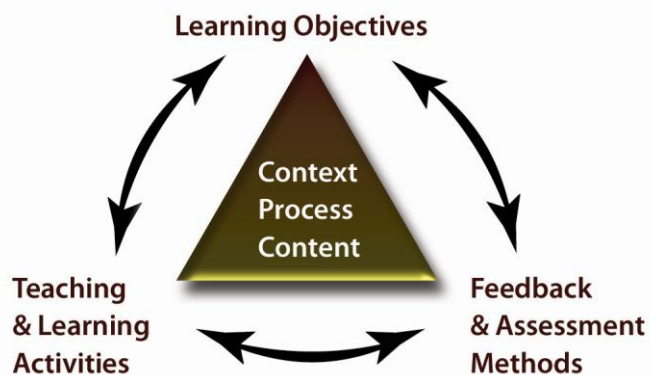
Three Strategies to Ensure Student Success and Engagement

Research suggests that effective teaching and learning environments: 1) facilitate a deep approach to learning where students are actively involved and seek further meaning and understanding through experience, application, practice and reflection; 2) provide organization and structure through clearly defined goals, learning objectives and standards for performance; 3) provide opportunities for students to receive frequent feedback; 4) provide authentic learning experiences that establish personal and real-world relevance; and, 5) provide

opportunities for independence and choice (Entwistle and Tait, 1990; Trigwell and Prosser, 1991; deWinstanley and Bjork, 2002; Lizzio et al., 2002; Newmaster et al., 2006; Weiman, 2007; Kember and Hong, 2008; Revell and Wainwright, 2009).

The below 3 strategies translate these fundamental concepts into action:

1. **Establish organization and structure**
   - Establish and communicate clear learning objectives throughout the course
   - Establish and communicate clear standards for performance (e.g. rubrics and grading guidelines)
   - Give clear and useful explanations
   - Vary and structure learning activities (max 20 min.) to focus attention
   - Focus each lesson/session on a few main concepts
   - Repeat and space key information within and between lectures/labs/seminars

2. **Keep Learners Intrinsically Motivated**
   - Establish personal and real-world relevance
   - Provide opportunities for independence and choice in learning content and process
   - Provide opportunities to receive frequent feedback and to scaffold learning

3. **Involve the Learner**
   - Provide opportunities for peer interaction and discussion
   - Provide opportunities for independent interpretation, elaboration and meta-cognition
   - Use activities that promote practice and problem-solving to facilitate synthesis, integration and application
   - Ask questions and demonstrate an interest in students' opinion, and their challenges with the subject matter
   - Promote a sense of reciprocal learning and interaction by demonstrating a sense of enthusiasm, trust, approachability, honesty and humility

References

Biggs, J. 1996. Enhancing teaching through constructive alignment. *Higher Education* 32:347-364.

Blumberg, P. 2009. Maximizing learning through course alignment and experience with different types of knowledge. *Innovative Higher Education* 34:93-103.

deWinstanley, P.A. and Bjork, R.A .2002.Successful lecturing: presenting information in ways that engage effective processing. *New Directions for Teaching and Learning* 89:19-32.

Entwistle, N. and Tait, H. 1990. Approaches to learning, evaluations of teaching, and preferences for contrasting academic environments. *Higher Education* 19: 169-194.

Fink, L.D. 2003. *Integrated Course Design*. The Idea Centre. Accessed at: http://www.theideacenter.org/sites/default/files/Idea_Paper_42.pdf

Kember, D., Ho, A., and Hong, C. 2008. The importance of establishing relevance in motivating student learning. *Active Learning in Higher Education* 9(3): 249-263.

Knight, P.T. 2001. Complexity and curriculum: a process approach to curriculum making. *Teaching and Learning in Higher Education* 6: 369-381.

Lizzio, A., Wilson, K., and Simons R. 2002. University students' perceptions of the learning environment and academic outcomes: implications for theory and practice. *Studies in Higher Education* 27(1):27-52.

Meyers, N.M. and Nulty, D.D. 2009. How to use (five) curriculum design principles to align authentic learning environments, assessment, students' approach to thinking and learning outcomes. *Assessment and Evaluation in Higher Education* 34: 565-577.

Newmaster, S., Lacroix, C.A., and Rossenboon, C. 2006. Authentic learning as a mechanism for learner centredness. *International Journal of Learning* 13 (6): 103-112.

Revell, A. and Wainwright, E. 2009. What makes lectures 'unmissable'? Insights into teaching excellence and active learning. *Journal of Geography in Higher Education* 33(2): 209-233.

Trigwell, K. And Prosser, M. 1991. Improving the quality of student learning: the influence of learning context and student approaches to learning on learning outcomes. *Higher Education* 22:251-266.

Wieman, C. 2007. Why not try a scientific approach to science education? *Change: The Magazine of Higher Learning* 39(5): 9-15.