ergo

The Journal of the Education Research Group of Adelaide
ISSN 1835-6850

Volume 2, Number 3, February 2012

Contents

Applying the alignment model for sustaining student motivation and active learning in a multi-cultural context

Xuemei Tian
Faculty of High Education, Swinburne University of Technology

Abstract

Central to the theory and practice of teaching and learning is the search for alignment between course aims and objectives, content, structure, delivery, assessment methods and outcomes sought. The research reported in this paper was based on two broad assumptions. The first is that without alignment it is unlikely that directed teaching and learning will occur. The second is that more attention must be paid to student motivation. This paper reports an attempt to improve correlation between one particular third year business unit and the motivation of the students concerned. This largely qualitative research found that while there was an element of connection, alignment and student motivation did not necessarily always go together.

Introduction

On assuming responsibility for an established third year business unit, the author soon had doubts about what might be termed its *fitness for purpose*. It quickly became clear that some form of curriculum design exercise was required, albeit one that at least initially would be confined to little more than basic 'running repairs'. Initial concerns related to making the unit more coherent and improving the overall relationship between objectives, content, delivery methods and outcomes. The deeper dimension emerged through a focus on alignment, motivation and active learning. A major challenge arose in that the entire cohort consisted of Chinese students who had come to Australia to complete a degree, the first two years of which had been undertaken at different universities in their own country.

Methodology

Following an in-depth literature review, a combination of quantitative and qualitative approaches was adopted over a three-year period. During the first year, the focus was largely on issues of content and delivery—what needed to be deleted or included, small or large group operation and so on. In the second year, this was extended to include research into alignment. By the third year it included issues of student motivation and active learning.

Quantitatively this involved statistical analysis of three 50-strong cohorts of students, each taking the same final year unit. Data were collected on performance on assignments and in examinations, both on the basis of specific marking schedules and protocols. Student performance was also assessed in terms of contributions to tutorials and to online discussion threads using the *Blackboard* system. In both cases a simple marking sheet was employed, with marks awarded for contributions initiated by each student and for their responses to the comments of others. The data for each of the three cohorts under both headings

(assignments/examinations and tutorials/discussion threads) were aggregated by year and simple distribution analysis was conducted. At this point no more detailed quantitative analysis was undertaken because any resultant findings might have been skewed by differences between the three cohorts. (see below). As further data are acquired it is the intention to return to the quantitative phase and conduct more meaningful tests such as Chi Square and t-test.

The focus shifted to the qualitative dimension because anticipated differences in academic standards, in spoken and written English, and in motivation and life experience between cohorts were deemed likely to make this a potentially more fruitful approach. Such differences would not have been important had the focus been upon the same group of students over the three year period. However, the fact that a different cohort was involved in each of the three semesters made this a factor. This qualitative exercise largely involved the posting of questions on *Blackboard* related to issues such as teaching and assessment, the academic environment and matters of student morale and motivation. This was reinforced by the completion of an end of semester questionnaire. The purpose was to encourage students to provide meaningful feedback about the unit in general—their overall impressions, what they liked and did not like, and suggestions for improvement. More substantially, the aim was to collect data that might help to improve understanding of the relationship (if any) between course design, content and delivery and individual levels of motivation and engagement.

Curriculum design and development: Alignment and active learning

Although curriculum design and development remain a perennial challenge, the task is made easier by the availability of numerous frameworks or models, each with advantages and disadvantages. Prominent among such frameworks are Bloom et al's taxonomy (1956) and its revision by Anderson et al. (2001), along with the SOLO (Structure of Observed Learning Outcomes) taxonomy developed by Biggs and Collis (1982), and Biggs later work on constructive alignment, (1999a, 1999b, 2002, 2003). Among the broad array of design elements presented in these frameworks, this researcher believes that the most important are: content and context alignment (Biggs 2002; Biggs & Tang 2007; Blumberg 2009), active learning encouragement (Jones et al. 1994; Biggs 1999a; Twigg 2003) and the application of critical thinking skills (Sullivan & Rosin 2008).

So far as theories of psychology and learning are concerned this research has been particularly influenced by the cognitivist, social cognitivist and constructivist perspectives (Biggs & Tang 2007). This is essentially because together they facilitate the study of causally related mental constructs, self-regulated learning and metacognition, and the social and cultural dimensions of learning. Anderson et al.'s (2001) revision of Bloom's taxonomy is notably consistent with such theories. Its structured approach is easy to follow, adopts students as its focal point and encourages active learning. Although, neither Anderson et al. (2001) nor later Blumberg (2009) provided any specific theoretical link between curriculum design and active learning, relevant elements can be identified within their taxonomies including:

- Alignment: between objectives, teaching/learning methods, assessment task requirements, and the cognitive process.
- Enhancement of the student learning experience: linking course design with learning by giving students opportunities to use the content while employing different types of knowledge, including factual, conceptual, procedural and metacognitive.

Research into student learning (Saljo 1981; Trigwell et al. 1999) has identified three approaches: surface, strategic and deep. To this Biggs (1989) added five learning stages:

1. *Learning as increasing knowledge*: The student may see learning as coming from teachers rather than themselves.
2. *Learning as memorizing*: The more you consider it, the more likely it will stick
3. *Learning as acquiring facts or procedures that are to be used*: The ability to recall accurately.
4. *Learning as making sense*: The application and justification of acquired knowledge.
5. *Learning as understanding reality*: Commonly termed 'personal, meaningful learning', this can provide different perspectives on the world.

The progression from one to five represents a transformation from passive to active learning and from the surface to the deep approach. A smooth transition between stages facilitates active learning. Silberman (1990) describes active learning as a multi-layered and multi-directional experience occurring between teachers and students, students-to-teachers and students-to-students. Silberman (1990), and Bonwell and Eison (1991) adopted specific strategies to help design and build an active learning environment and, like Biggs and Tang (2007) and Blumberg (2009) recognised that this would involve alignment issues. There is also the question of student motivation.

Student motivation

Brown (1994) defines motivation as 'an inner drive, impulse, emotion or desire that moves' and Pintrich and Schunk (2002, p5) believe that motivation is 'a process for goal-directed activity that is instigated and sustained'. Seemingly obvious, it refers to the extent of student commitment to teaching and learning objectives and their level of participation in learning activities. From a deeper perspective however, it is about acquiring and maintaining student interest while encouraging them to engage in the subject and to aspire to levels of achievement beyond that of simply passing a course. Biggs and Tangs (2007) identify four different categories of motivation: extrinsic (what the outcome produces), social (what other people value), achievement (the opportunity for ego enhancement) and intrinsic (the process of doing it). Intrinsic motivation is academically ideal, however not many students achieve this standard.

Elsewhere, Deci and Ryan's (1985) Self Determination Theory alludes to three types of motivation (intrinsic, extrinsic and amotivation) operating along a continuum of weakest to strongest. To measure the different levels of motivation Hegarty (2010) suggests the use of Vallerand et al.'s (1992) Academic Motivation Scale (AMS) while arguing the need for additional research both to improve understanding of student motivation and to aid in the development of teaching pedagogies.

Aligning curriculum design with student motivation and active learning

It seems evident that learning that is social as well as structured and that provides for deeper engagement is likely to be more effective. Bloom's three domains: cognitive, affective and psychomotor can be useful here, not least in reinforcing the argument that that the *best* teaching method or the most effective teaching strategy is not the *be all and end all* (Tuysuz et al. 2010). Allowance must be made for the interplay of diverse and unanticipated influences. Hence, without attention to elements such as student feelings, interests, attributions, ideas, emotions and goals to help give meaning to what is being taught (Gardner 1999; Coleman & McNeese 1996; Morgan 2006) and clear connections between course design relevance and student interest (Kember et al. 2008), neither student motivation nor effective learning are likely to result. Additionally, Blumberg (2009) reiterates the need to design units which deliver

cross-sections of knowledge and where the effective presentation of material underlines its relevance and contributes to alignment.

Currently, the dominant influencing principle of curriculum design is that of constructive alignment (Biggs and Tang 2007). Constructive alignment requires a focus upon student needs and to achieve this, all associated aspects of the course should be synchronized with each other. This conforms to the key point of their theory of constructive alignment, which builds the connections between intended learning outcomes (ILOs), teaching/learning activities (TLAs) and assessment tasks (ATs).

The search for constructive alignment can be greatly aided by the use of alignment models going back to Cowan and Harding's (1986) model for curriculum development and more recently Nicolettou's (2009) five stages approach, which provides a tabular depiction of alignment based on course outcomes, activities and assessment tasks. This latter model does not show clear linkage between individual objectives, activities and assessment tasks—nor to levels of learning such as those from Bloom's revised taxonomy, which are remember, understand, apply, analyse, evaluate and create (Anderson, et al. 2001; Blumberg 2009). Generally however, alignment models provide a holistic overview that juxtaposes learning objectives with weekly activities, and subsequent assessments so students will understand what they will be learning, how the knowledge will be delivered and how they will be assessed during the semester (Biggs and Tang 2007). However it is important to view all such frameworks as dynamic rather than static and as adjustable to the circumstances of specific learning environments. The research reported below tends to reinforce this point.

Summary of research findings

Space limitations permit only a brief summary of this three year research project aimed at improving student motivation and learning outcomes on an undergraduate business course. The students had taken the previous two years of their studies in China and came to Australia to complete their final year. On taking over responsibility for this existing unit the author was quickly faced with two questions. First did students have the life experience to cope effectively with a largely theoretical and unfamiliar subject (The Network Economy). Second, were the challenges of adjusting to life in a foreign country and specifically, the demands of an open learning environment likely to affect levels of student attainment? These questions assumed additional importance as a clearer picture emerged with regards to student motivation and performance:

- Twenty per cent of the class failed to display much interest in either the subject or in teaching and learning activities. This was demonstrated not only by poor test scores, by specific comments from the students themselves, by a clear reluctance to engage with the subject and with other students and what for want of a better term could be called "body language"
- This lack of interest was manifest in late arrival at lectures and tutorials, a failure to respond to questions during class, talking and other distracting behaviour in class and mediocre results in assignments and examinations
- Over half of the class did engage to some extent in the prescribed activities and a minority performed well.

Although the unit received positive feedback from students and a favourable rating for teaching quality under the established university processes, it was clear that changes had to be made. This included changes in course content and structure (Year Two) and attempts to improve alignment through the promotion of active learning (Year Three).

Changes: Year Two

- Replacement of descriptive content by more topical and challenging case-based material both to impart knowledge and as a form of assessment
- Use of short videos for critique and discussion on a weekly basis
- Increased student accountability through classroom and online activities using the *Blackboard* system.

Outcomes: Year Two

- Continuance of the disfunctionality exhibited in Year One: initial interest in video material was not complemented by any notable improvement in student engagement
- Similar and if anything, more disappointing results than in Year One
- Positive outcomes in terms of end-of-year feedback and quality assurance mechanisms.

Changes: Year Three

The third year was notable for a complete rethink on aims and objectives. This included:

- Increased student responsibility through required contributions to lectures (explaining basic concepts for example) and involvement in peer assessment of assignments
- Actions to encourage active learning: Attempting to motivate and engage students by clearly demonstrating the relevance and purpose of the unit and acknowledging the value and diversity of student experiences
- Application of Anderson et al.'s (2001) learning taxonomy principles and in particular that of alignment between the design, delivery of courses and educational outcomes.

Outcomes: Year Three

- No meaningful improvement in levels of student engagement (and presumably, motivation)
- Twenty per cent of students failed the unit, not dissimilar to years one and two
- However, the failure rate might have been higher given that the student cohort was weaker both academically and in English proficiency than in the previous two years
- Further improvement was inferred from the fact that 20 per cent of students reported that for the first time they were able to understand the purpose and relevance of their unit.

Although it might be premature to expect significant improvement in teaching and learning outcomes over the period of experimentation reported here, there is nonetheless little reason for satisfaction in the results obtained. The most successful element in the change process was that of alignment, where clear signs of improvement could be seen, for example, improved alignment of course objectives, content, assessment and delivery methods. The least successful aspect was that of student motivation where, judged on the basis of demonstrated interest and engagement little improvement had occurred. Even allowing for the decline in intake standards mentioned above, this suggests that the complexities involved in motivating students must to some extent relate to perceptions of alignment—what it means and how to achieve it. The obvious conclusion, based on the three year study, is twofold. First, that alignment is necessary but not sufficient for achieving student motivation and second, that alignment is a subtle and shifting concept, highly context-dependant and meaning different things at different times. If this sounds a bit too emphatic an assessment, one would add that in the case of the unit and student cohorts concerned, the presence of an external cultural dimension should not be underestimated.

Conclusion

While confirming the importance of alignment, active learning and student motivation, the findings reported here suggest that in the search for course alignment much more attention needs to be paid in certain circumstances to the cultural identity of the students concerned. Each of the cohorts studied over the three year period met basic university entrance standards as regards previous academic performance and proficiency in English. Nevertheless, they responded neither to openness and interaction in the classroom nor to innovative and dynamic learning and delivery methods. They seemed happiest when memorizing lessons or attempting to regurgitate sections of readings and not at all interested in asking questions, and certainly not *why* type questions about the broader purpose and relevance of the course.

Further research is planned to identify the different factors that make up this cultural dimension and how they might be addressed. Of necessity this must include questions not only about motivation as regards to work but also for taking particular courses and indeed, for moving abroad for the purpose. Otherwise the implication is that there will be few real winners in such international educational enterprises. Host universities are unlikely to gain much, other than in terms of additional fee income, while overseas students are likely to acquire only a superficial level of education when they leave home to study abroad.

References

Anderson, LW, Krathwohl, DR, Airasian, PW, Cruikshank, KA, Mayer, RE & Pintrich, PR 2001, *A taxonomy for learning, teaching, and assessing*, Longman, New York.

Biggs, J 1989, 'Approaches to the enhancement of tertiary teaching', *Higher Education Research and Development*, vol. 8, no. 1, pp. 7-25.

Biggs, JB 1999a, *Teaching for Quality Learning at University*, Open University Press, Buckingham, England.

Biggs, J 1999b, 'What the student does: teaching for enhanced learning', *Higher Education Research and Development*, vol. 18, no. 1, pp. 57-75.

Biggs JB 2002, *Aligning teaching and assessment to curriculum objectives*, LTSN Imaginative Curriculum, viewed 1 March 2011 <http://www.palatine.ac.uk/files/1023.pdf>.

Biggs, J 2003, *Teaching for Quality Learning at University*, The Society for Research in Higher Education/Open University Press, New York.

Biggs, J & Collis, K 1982, *Evaluating the Quality of Learning: the SOLO taxonomy*, Academic Press, New York.

Biggs, J & Tang, C 2007, *Teaching for Quality Learning at University*, 3rd edn, Open University Press, New York.

Bloom, BS, Engelhart, MD, Furst, EJ, Hill, WH & Krathwohl, DR (eds) 1956, *Taxonomy of educational objective. The classification of educational goals. Handbook 1. Cognitive domain*, McKay, New York.

Blumberg, P 2009, 'Maximizing Learning Through Course Alignment and Experience with Different Types of Knowledge', *Innovation in Higher Education*, vol. 34, pp. 93-103.

Bonwell, C & Eison, J 1991, *Active Learning: Creating Excitement in the Classroom*, AEHE-ERIC Higher Education Report No. 1, Jossey-Bass, Washington, D.C.

Coleman, B & McNeese, M 1996, 'From Home to School: The Relationship Among Parental Involvement, Student Motivation, and Academic Achievement', *The International Journal of Learning*, vol. 16, no. 7, pp. 459-470.

Cowan, J. and Harding, A, 1986, 'A logical model for curriculum development', *British Journal of Educational Technology*, vol. 2, no. 17, pp. 103-109.

Deci, E & Ryan, R 1985, *Intrinsic motivation and self-determination in human behaviour*, Plenum Press, New York.
Gardner, H 1999, *The Disciplined Mind. What All Students Should Understand*, Simon and Schuster, New York.
Hegarty, N 2010, 'Application of the Academic Motivation Scale to Graduate School Students', *The Journal of Human Resource and Adult Learning*, vol. 6, no. 2, pp. 48-55.
Jones, B., Valdez, G., Nowakowski, J., & Rasmussen, C. 1994, *Designing Learning and Technology for Educational Reform*, North Central Regional Educational Laboratory, Oak Brook, IL.
Kember, D, Ho, A & Hong, C, 2008, 'The importance of establishing relevance in motivating student learning', *Active Learning in Higher Education*, vol.9, no. 3, pp. 249-263.
Morgan, G 2006, *Images of Organization*, (updated edn), Sage Publications, Thousand Oaks.
Nicolettou, A 2009, 5 Stages of Educational Design, LTS503 Curriculum, Swinburne University, Melbourne.
Pintrich, P & Schunk, D 2002, *Motivation in Education: Theory, Research and Applications*, 2nd edn, Merrill Prentice-Hall, Upper Saddle River.
Saljo, R 1981, Learning approach and outcome: Some empirical observations, *Instructional Science*, vol. 10, no. 1, pp 47-65.
Silberman, ML 1990, *Active Training: A Handbook of Techniques, Designs, Case Examples, and Tips*, Lexington Books, New York.
Sullivan, W & Rosin, M 2008, *A New Agenda for Higher Education: Shaping a Life of the Mind for Practice*, Jossey-Bass, San Francisco.
Trigwell, K, Prosser, M & Waterhouse, F 1999, 'Relations between teachers' approaches to teaching and students' approaches to learning', *Higher Education*, vol. 37, no. 1, pp. 57-70.
Tuysuz, M, Yildiran, D, & Demirci, N 2010, 'What is the motivation difference between university students and high school students?' *Procedia Social and Behavioral Science*, vol. 2, pp. 1543-1548.
Twigg, CA 2003, 'Improving Learning and Reducing Costs: Lessons learned from Round 1 of the Pew Grant Program in Course Redesign', *Educause Review*, viewed 1 March 2011 <http://net.educause.edu/ir/library/pdf/erm0352.pdf>.
Vallerand, R, Pelletier, L, Blais, M, Briere, N, Senecal, C & Vallieres, E 1992, 'The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education', *Educational and Psychological Measurement*, vol. 52, pp. 1003-1017.

Tian, X 2012, 'Applying the alignment model for sustaining student motivation and active learning in a multi-cultural context', *ergo*, vol. 2, no. 3, pp. 19-25.

† Corresponding author: stian@swin.edu.au