Towards Constructive Alignment: Mapping the Territory

Graeme Dean
Sandra van der Laan
(University of Sydney)
and
Cameron Esslemont
(Global Library Services Network)

As part of a larger teaching and learning (T&L) project\(^1\), a team based at The University of Sydney, within the Faculty of Economics and Business became aware of the significant challenge faced by academics in “constructively aligning” (Biggs, 1996) their teaching programs with the T&L objectives of the university, faculty and discipline concomitant with providing quality T&L outcomes for students.

**The Initial Challenge**

The initial challenge was to enhance our ability to provide high quality, timely and effective feedback on student assessments. It is well documented that students appreciate feedback that assists them to improve future efforts (James *et al.*, 2002) and to promote the development of deep approaches to learning (Ramsden, 2002). Since it is suggested that educational taxonomies assist in measuring cognitive learning outcomes, and that they can be applied to different subjects, levels and length of assignments (Biggs & Collis 1982), we selected Biggs’ SOLO (Structure of Learning Outcomes) taxonomy (Biggs & Collis, 1982). SOLO, a theoretically informed educational taxonomy, has been supported by research that demonstrates a strong association between approaches to learning and SOLO outcomes (Ramsden, 1992).

The SOLO taxonomy is a hierarchy that can be used to classify the complexity of student’s responses. SOLO provides a “systematic way of describing how a learner’s performance grows in complexity when mastering academic tasks” (Biggs, 1996, 351). The system is outlined in Table 1:

**Table 1  Biggs’ SOLO Taxonomy**

<table>
<thead>
<tr>
<th>Level/Descriptor</th>
<th>Performances of Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prestructural</td>
<td>Fundamental misunderstandings, lack of effort/involvement, no meaningful response</td>
</tr>
<tr>
<td>Unistructural</td>
<td>Sparse understanding, evidence of some effort, higher level understanding offset by some misunderstandings, focus on one relevant aspect only</td>
</tr>
<tr>
<td>Multistructural</td>
<td>Student understands declaratively, they can discuss content meaningfully, have knowledge of a reasonable amount of content, several relevant but uncoordinated responses</td>
</tr>
<tr>
<td>Relational</td>
<td>Student can apply content, recognise good and poor application of principles, parts are integrated into a coherent whole, detail is linked to conclusions</td>
</tr>
<tr>
<td>Extended Abstract</td>
<td>Metacognitive understanding, generalises beyond the information given, higher order principles are used to bring in new or a broader set of issues.</td>
</tr>
</tbody>
</table>

*Source:* Adapted from Biggs (1996) and Ramsden (2002)
Choosing a model to employ turned out to be a relatively simple part of the task. Operationalising the model was much more complex. Questions arose in relation to the academics’ role in the institutional environment, specifically the extent or scope of assessment in an individual unit of study. One might question whether we are assessing a student against the aspirational statements of the University’s graduate attributes? Or is it our role only to assess at the discipline/subject specific level? Before making a subjective evaluation of a response as say, pre-structural or relational, one is required to make an implicit or explicit articulation of a learning objective (to provide appropriate feedback) or outcome that is being assessed. Problems also arose when attempting to assign marks to particular levels or descriptors of the SOLO taxonomy. It became evident quickly that these descriptors do not necessarily translate directly to a particular grade or range of grades. At what level of granularity of response (student attribute/assignment/relevant issue) can these descriptors be employed? Are the descriptors summative or additive in some way? The problems encountered provided impetus for ‘mapping’ our assessment objectives at the unit of study level.

A Model for Constructive Alignment

The need to be able to communicate clearly and effectively our interpretation of the assessment process led to the mapping of the process and consequently the development of the model (see Figure 2). This mapping of the process clarified which policies/procedures/practices informed which others and the place(s) that assessment intervened in the process as well as opening up the possibilities for feedback. It also clarified which components of the learning process interact (or should interact) and relate with others. This mapping has helped enormously with the preparation of a unit of study by making the teacher (lecturer) aware of the components that should be considered when developing the unit from the outset. This model should be considered a ‘macro’ model when compared to Biggs (1999) model for constructive alignment (see Figure 1) – his ‘micro’ model.

Figure 1 Biggs’ Constructive Alignment Model
Whilst Biggs’ model is useful, it fails to address all of the core components included as ‘critical’ when considering alignment (Biggs, 1999, p. 25 – 6). It is suggested that apart from the teacher(s) and the students, the core components are:

1. The curriculum;
2. The teaching methods employed;
3. The assessment and reporting methods;
4. The teaching environment; and
5. The institutional environment.

(adapted from Biggs, 1999)
Biggs further suggests that as some of these components are outside the control of the teacher or instructional designer, then “we have to work within or around” (p. 26) them the best way we can. Our model seeks to augment the constructive alignment model by explicitly acknowledging the institutional environment, as well as including the important components of response to reporting (for example, feedback triggering suggestions of complementary units) and consideration of external constraints on curriculum from ‘professional’ bodies.

Figure 1: A Model for Constructive Alignment

The model was constructed by starting at the unit of study. Then we considered what influences the learning goals in the unit. As the model shows, learning goals are influenced by the themes or broad topics of the unit, the University’s graduate attributes, the Faculty’s graduate attributes defined by the ‘PRICE’ cluster and the requirements of professional bodies. With all of this in mind, the lecturer designs assessment tasks that reinforce the learning goals and assessed using the principles of the SOLO taxonomy to allow timely and effective feedback. This feedback should assess the learning that has taken place as well as, if required, direct students to complementary courses. Further, under our system, the LQMS allow the student to evaluate their response to the assignment within the group. The LQMS system also allows us to review the students’ exposure to material in the electronic library as well as constructing e-portfolios.
Conclusions

The development of the model for constructive alignment has been an iterative process which is continuing. The purpose of mapping the territory has been to enable the authors to articulate and disseminate the rationale for reforming assessment practices. It also highlights how this can be integrated within the institutional environment and enhanced through the use of information technologies. The over-riding objective of this work, however, was to facilitate relevant and timely feedback to students. The constructive alignment model seeks to improve student outcomes and assessment practices through incorporating a pedagogically sound, theoretically informed assessment and feedback loop based on the entire student learning environment.

References:


Biggs, J. (1999), Teaching for Quality Learning at University, Society for Research into Higher Education & Open University Press, Buckingham, UK.


1 The larger project involves the deployment of an electronic library with enhanced search capabilities allowing students a variety of search options, such as by phrase or by subject area with items in the library coming from a number of different media (i.e. academic articles, professional statements and pronouncements, newspaper clippings and textbooks).

2 Accounting, like many professional disciplines require university courses to be accredited. This accreditation process places constraints as well as positive obligations on particular programs of study.

3 PRICE is the acronym given to the Faculty based graduate attribute ‘clusters’ of:
   Personal and intellectual autonomy
   Research and inquiry
   Information literacy
   Communication
   Ethical, social and professional understanding.

4 LQMS denotes Learning Quality Management System which is a system currently under development at the University of Sydney by the authors to enable electronic feedback and management of student information at the unit of study level.