Curriculum Design Philosophy

Overview

The overarching curriculum design philosophy underpinning our quality enhancement processes at the University of Liverpool is 'Constructive Alignment'.

Constructive alignment is predicated on the notion of developing an approach to programme design that is influenced by an outcomes-based teaching and learning model. The conceptualisation of constructive alignment was presented by John Biggs in his 1996 seminal paper and drew upon the work of constructivist learning theory and instructional design.

"Constructive alignment" represents a marriage of the two thrusts, constructivism being used as a framework to guide decision-making at all stages in instructional design" - (Biggs, 1996)

Its key proposal is that by defining effective and appropriate learning outcomes we can then use these to "align" the assessment tasks, learning resources and teaching activities within the programme thus ensuring all components of the programme are in support of students achieving the learning outcomes.

"In a good system, all aspects of teaching and assessment are tuned to support high level learning, so that all students are encouraged to use higher-order learning processes. 'Constructive alignment' (CA) is such a system. It is an approach to curriculum design that optimises the conditions for quality learning." (Biggs, 2013)

Therefore, the learning activities, resources and tasks (e.g. formative or summative assessments) must be "aligned" to the learning outcomes so that we can be confident that by students undertaking these tasks they are being supported to be able to demonstrate their knowledge and ability in relation to the Learning outcomes.

"Good teaching is getting most students to use the higher cognitive level processes that the more academic students use spontaneously. Good teaching narrows the gap." (Biggs, 1999, p. 58)
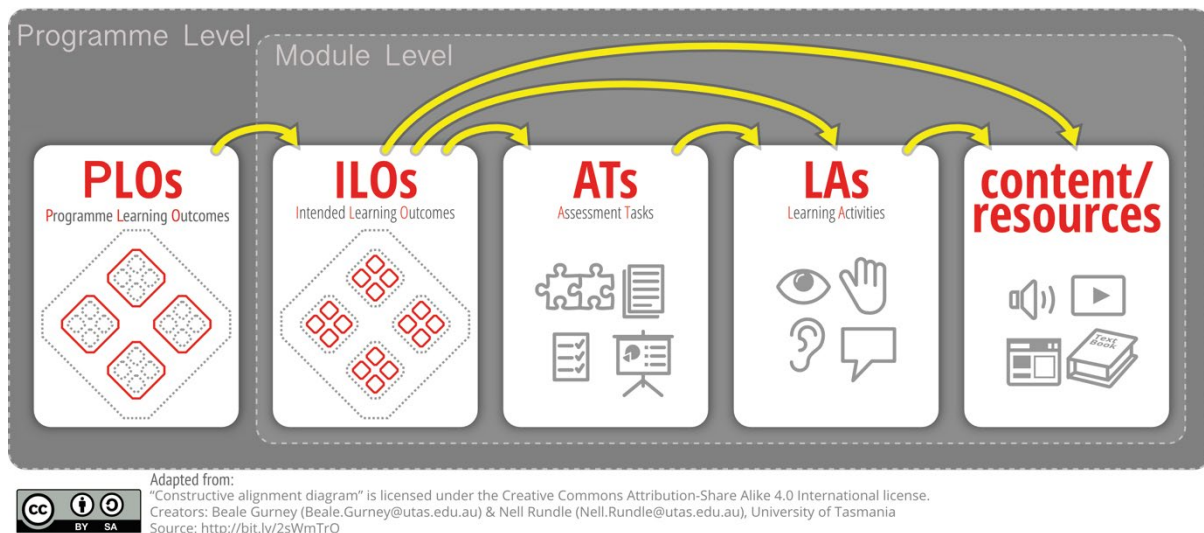
Figure 1 - Constructive alignment diagram, Beale Gurney & Nell Rundle, CC BY-SA

Benefits

Biggs & Tang (2011) argue that constructive alignment supports deep learning for all students. They explore the learning experiences from the perspective of two students: Susan and Robert.

Susan is "academically committed", bright and focussed on her studies. She has a strong commitment to her academic studies and "what she learns is important to her". She prepares in advance for her taught sessions and reads widely around the subject area and reflects on that learning. (Biggs, 1999).

Susan therefore takes a deep approach to her learning (Marton & Säaliö, 1976) regardless of how the curriculum has been designed or developed. Susan is at University for the love of her discipline and for the love of learning.

Robert on the other hand has a more strategic approach to his learning. His ultimate aim is to pass the programme in order to be able to get a job, he's not even studying his favourite subject but has picked a programme because it has been suggested to him based on the job he might want in the future.

In stark contrast to Susan he does not prepare for lectures, does not read around the subject and is seeking to do the bare minimum to pass the programme, thus adopting a "surface" approach to his learning. (Biggs, 1999)

Constructive alignment is designed to engage surface learners through effective alignment of learning activities.

Whilst this example focusses particularly on surface learners there are in fact benefits for all students when we use constructive alignment effectively for programme development. After all "Learning takes place through the active behaviour of the student: it is what s*he* does that she learns, not what the teacher does." (Tyler, 1949)

- Aligning tasks to outcomes can help ensure that our students "learn what we really want them to" (Brabrand, 2008). Designing learning tasks and activities that are aligned with our learning outcomes helps ensure task suitability and relevance.

- Using programme learning outcomes to inform module learning outcomes can ensure that our modules are contributing to the overall aims and outcomes of the programme.
- In addition, it gives all academic staff a deeper understanding of how their module fits within the programme and also a clearer sense of the student experience as they journey through it.
- Vertical and Horizontal integration of modules builds a sense of connectedness between modules and thus a more holistic design of the programme (Thomson, 2020)
- Formative and Summative assessment tasks clearly aligned to learning outcomes can be more clearly articulated to students who will see direct value and purpose of the task for their learning.
- The teaching resources and activities are more aligned to the required knowledge acquisition for the intended learning outcomes.

Putting it into practice

Constructive alignment can be put into practice at a number of different stages in the curriculum design process. For example, if you are considering a review of your assessments, these can be designed so that they more clearly linked to the learning outcomes of the modules. However, for constructive alignment to be most beneficial it is best used holistically as part of a whole course design/review process. This can be visualised in Figure 1 above, but is described in detail below for a three year undergraduate programme:

1. The first stage is to write and agree the programme learning outcomes. These should ideally be developed as a whole programme team and are best written considering the "threshold concepts" of the discipline. They should be informed by QAA subject benchmarks, professional bodies and other stakeholders (e.g. employers). A good question to ask "what should all students who graduate this programme be able to know/do"?
2. Once the programme learning outcomes have been agreed the module leads for level six (final year) can then use these to inform their module learning outcomes. They shouldn't be the same as the programme learning outcomes, but they should ensure that they are aligned to them.
3. As you might guess the next stage is for level 5 (year 2) module leads to write their module learning outcomes and should be aligned to the level 6 modules. A good question to ask yourself is "what do the students need to know by the end of level 5 in order to be in a good position to start their level 6 journey".
4. Finally, the level 4 (year 1) module team can develop their learning outcomes, using the level 5 modules for alignment.
5. In turn these learning outcomes then inform the assessments for each module as well as the learning resources, sessions and activities.

This is very much an iterative process and discussions between programme team members will continue throughout, but what is important is that decisions are based on the agreed learning outcomes at all the levels.

The final stage in this process would be to then design an induction process which sufficiently prepares students for the start of their learning journey in the programme, safe in the knowledge that each step they take has been carefully "aligned" to "construct" their learning in a way which makes it more difficult to be a surface learner.

"Students in more 'constructively aligned courses' were more likely to adopt deep learning approaches and less likely to use surface learning approaches in their study of a particular course" (Wang, Su, Cheung, Wong, & Kwong, 2013)

Considerations and challenges

This is of course simple in theory, but more challenging in practice. Where programme teams have a strong sense of "team" this process is much easier to implement. By its very nature Constructive alignment as a concept requires effective communication between module leads and an holistic programme design philosophy.

However, whilst this might seem challenging at first the rewards for successful alignment can be great, including increased student engagement and satisfaction with their learning (Wang et al., 2013).

Where programmes have large numbers of options modules it can be more challenging to align them to the programme learning outcomes, but nevertheless each module must consider its role within the overarching programme and the extent to which it is connected to the programme learning outcomes otherwise it risks not feeling part of the programme at all.

It can be even more challenging when option modules are shared across programmes and in some cases, it may be possible to "align" a module to more than one programme (especially if they are in a similar discipline area) but in some cases it may be preferable to redevelop modules into separate ones for each programme (even though they may share some resources and activities.

References

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Resources

- Constructive Alignment (University of Tasmania)
- Constructive Alignment (Nanyang Technological University)
- Using Biggs' Model of Constructive Alignment in Curriculum Design
- Good design: using constructive alignment