ASCILITE 2025

Future-Focused:

Educating in an Era of Continuous Change

Constructive alignment: A journey, not a destination

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This paper presents a new take on constructive alignment that follows an active, conversationalist approach to curriculum design. It introduces a practical tool that can be used iteratively to achieve constructive alignment. Ensuring constructive alignment is an important yet complex task, which often educators find challenging to master due to time and the complexities involved. The simplicity of the proposed tool addresses this and has considerable potential to be applied at scale across the higher education sector to develop new curriculum and to facilitate continuous improvement of existing curricula. By repositioning the educator to be an integral part of constructive alignment, it recognises that while constructing alignment, the educator is in fact constructing a deeper understanding of what the learning narrative can be. Understanding the synergies of various elements interacting in a course will not only empower the educator to develop meaningful learning experiences but also allow them to help learners understand similar connections. It also presents a tremendous opportunity for technology companies to streamline their grading tools so that the attainment of individual outcomes necessary to satisfy constructive alignment principles can be explicitly and automatically captured.

Keywords: Curriculum design, alignment, continuous improvement, conversationalist approach, qualitative

Introduction

This paper presents initial findings of an ongoing collaborative auto-ethnographic study that focuses on advancing the practice of constructive alignment (CA) as an iterative process, through the development of a practical tool that visualises the connections between intended learning outcomes, assessments, and their rubrics. It proposes that a more strategic mapping process of CLOs to assessments facilitates greater awareness of its effects on the intimated weightings of assessment and their associated rubrics. Many prominent universities in Australia and around the world use CA to support curriculum design (Ruge 2019). The logic of the approach is clear, where intended learning outcomes (or Course Learning Outcomes (CLOs)) are mapped and aligned with teaching activities, and assessments are designed to evaluate the demonstration of the outcomes (Biggs and Tang, 2011, p. 97). The intent is that the coherency promotes learners to synthesise, make meaning from the alignment and construct knowledge and skills around it. The Australian Higher Education Standards Framework (TEQSA, 2021) also emphasise the importance of CA by stating that course design (Standard 3.1.3) should comprise of content and teaching and learning activities that are logically aligned with relevant learning outcomes.

Whilst there is much research and lots of advice available on the concept of CA including deepening learning (Wang et al 2012) and increasing student satisfaction and student grades through increased challenge (Larkin and Richardson 2012), there are few studies offering practical advice or a process for Course Developers (CDs) on how to go about achieving it. Ruge (2019), in saying that CA should be better understood at the sector level, induces an understanding that CDs find it challenging. Indeed, notwithstanding Cropley (2011), whose mathematical approach to alignment provides stakeholders with the ability to interrogate the program design at any point, or level, and ask, 'how will this competency be developed in students, or, why is this assessment item necessary?', the current methodology to secure the necessary alignment in CA relies solely on an individual's interpretation of what constitutes coherence between CLOs, assessment and teaching and learning activities. Currently, CLOs are mapped to assessments, but the rationale for the mapping is relatively arbitrary, which can lead to unintended and/or unachievable distribution across the assessments. Also, once completed, whole assessment grades are aggregated and used as a proxy for outcome attainment. This

creates a scenario where learners may have passed an entire course, without meeting all the CLOs. If learning gaps in any of the outcomes are obscured by the proxy, the capacity to iterate, plan for and adjust the future curriculum is severely impacted. A 'missed' outcome may be an important requisite for the next course in the program, and the negative effects on the program quickly become exponential. This lack of precision, despite the CD's best intentions in mapping assessment to outcomes, invalidates the proffered CA.

Studies where the CD's journey of iteratively piecing a course together is seen as integral to CA are limited. While Loughlin et al (2020) exhort the need for teachers to reflect on the deeper purpose of teaching to 'reclaim' CA, their lament is directed at the drive for accountability in the Higher Education (HE) Sector that misappropriates learning outcomes to assure learning. Biggs and Tang (2011) promote the need for educators to be continuously reflective, but only once the course is designed and being taught. Yet our experience as curriculum specialists told us that the continuous reflection and evaluation of decisions made by the CD 'during' the alignment process could serve to activate deeper connections and realisations of how the course's components are integrated, and we wanted to explore this notion further.

The Context and methodology

We, as two Curriculum Specialists currently applying CA at scale in a setting of a university merger have been in continuous dialogue between ourselves and the CDs over an extended period of time. As part of the large-scale course development process initiated during the merger, the CDs were tasked with designing their courses to suit a new attainment model proposed by the new institution and were supported by us, the curriculum specialists during the development process. Part of our role involved assisting CDs in completing a 'course details form' where high-level mapping of the components central to CA could take place. Being both actors in and observers of the CA process, we then engaged in an iterative cycle of analytical interpretation and critical reflection of our practice and experiences. In doing so, we were interested to see if a more strategic approach in mapping outcomes to assessment could strengthen the utilisation of CA as a pedagogical methodology. This attempt to improve our practice as curriculum specialists resulted in the development of a simple yet practical tool to achieve constructive alignment. The tool we created visualised the mapping, but then took it further, realising that if we knew the importance of each CLO in the course as an estimated percentage, these two data points could be used to calculate the effect on assessment weightings and their associated rubrics. Microsoft Excel was used to track the mapping and make the calculations. Ethics approval was not sought as the study intended to be an informal exploration into the tool's efficacy, rather than a formal investigation of participants' experiences.

The tool

The tool increases the precision in understanding how an outcome is addressed across a curriculum's assessment. It assists in the mapping of CLOs to assessment, offering indications of ideal assessment weightings, and the relative composition and ideal weighting of criteria in individual assessment rubrics. This feature rectifies Sadler's (2005) concern that criteria-based grading approaches are ineffective because "statements of objectives are framed for a different purpose and have a different structure from statements of criteria" (p. 179). The tool actively encourages CDs to evaluate the estimations of what they propose the curriculum to be. This makes it more evident that the curriculum is a living, breathing, open system, where adjustments to any one component have implications for the rest. Such precision empowers educators as they become confident that their curriculum is doing what it says.

Our tool has considerable potential to be used at scale across the HE Sector. It also presents a tremendous opportunity for technology companies to streamline their grading tools to better sync with the principles of alignment. Currently, it is difficult for criteria to be mapped to specific outcomes, and difficult to automatically aggregate the weighted scores achieved for each criterion across the assessments to determine if the individual outcomes have been attained. Any manual approaches are cumbersome and time-consuming.
As Ervin et al (2013) warn that CDs are time poor to engage with CA, we consciously ensured our tool is simple to use. There are only two data inputs required from the CD. Both are estimations we would expect a CD to comfortably make. In the sections that follow, we discuss the function (F) of each feature of the tool.

F1: Outcome weighting

Course Learning Outcomes	CLO % Weight Within Course
CLO 1	20%
CLO 2	20%
CLO 3	10%
CLO 4	30%
CLO 5	20%
CLO 6	
Sum (Should be 100%)	100%

Figure 1. Outcome weighting

We leverage the experience and intuition of CDs and their awareness of program and accreditation requirements when they initially construct CLOs and decide on their relative weighting. The visualisation of the weighting in Figure 1 begins the iterative journey in the CD's mind as to how the weightings will affect the course overall. They will likely already understand what the topics will be for each CLO. The weighting activity provokes an evaluation of whether the complexity of the skills in the topics is reflected in the CLOs, therefore, if the CLOs and/or topics remain relevant.

F2: Assessment mapping

Course Learning Outcomes	Assessment 1	Assessment 2	Assessment 3	Assessment 4	Sum
CLO 1	50	100	0	0	150
CLO 2	25	25	25	25	100
CLO 3	0	0	2	3	5
CLO 4	0	5	0	10	15
CLO 5	0	0	40	60	100
CLO 6					0

Figure 2. Assessment mapping

Figure 2 above requires CDs to input the mapping of assessments to CLOs. CDs were asked to consider the relative influence of each CLO on their assessments, but it was important for there to be great flexibility in how the mapping can be undertaken, with the rows' data able to adapt to the most intuitive distribution of the outcome across the mapped assignments. The only proviso is that the approach taken in a row is consistent, so the calculations remain relative. The various options are outlined below in Table 1.

Table 1
Mapping Approaches

Row	Mapping approach	Application
Row 1: CLO1	How much of the domain is available to assess?	The 50 assigned to A1 represents that 50% of the domain of knowledge and skill attributed to CLO1 has been taught and is available to assess. 100% of the outcome is available to assess in A2.
Row 2: CLO2	What percentage of the outcome is assessed?	25% of the outcome is assessed in every assessment. More and more of the domain is available to be tested after A1, but each assessment is restricted to 25% of questions aligned with CLO2.
Row 3: CLO3	What is the ratio of the distribution?	In A3, the CD is saying that 2 out of 5 (the sum column) components of the outcome are available to assess, and 3 out of 5 are available in A4, creating a heavier weighting. This approach may be useful if there are specific skills within the outcome that need to be assessed, such as in accredited courses.
Row 4: CLO4	How many hours are dedicated to the CLO?	The CD may have a strong idea about how many hours out of their course can be dedicated to the CLO. The numbers added into A2 and A4 indicate that A4 is 2/3rds of the whole outcome.
Row 5: CLO 5	How much effort is assigned to Individual skills?	The outcome is comprised of separate assessable skills that aren't synthesised, and the CD distributes the effort needed in each assessment as a % across A3 and A4.

F3: Assessment Weight

Course Learning Outcomes	Assessment 1	Assessment 2	Assessment 3	Assessment 4	
CLO 1	7%	13%	0%	0%	
CLO 2	5%	5%	5%	5%	
CLO 3	0%	0%	4%	6%	
CLO 4	0%	10%	0%	20%	
CLO 5	0%	0%	8%	12%	
CLO 6	0%	0%	0%	0%	
Ideal Assessment Weight	12%	28%	17%	43%	100%

Figure 3. Assessment weight

From the two inputs, the tool calculates the suggested assessment weighting. The output begins an important conversation: the CD can evaluate how their original 'construction' of alignment holds up against the values generated by the tool. The numbers are approximations and should be rounded up or down with an expected error of 5%. If the values are not close to what was envisaged, the CD can ask why it is the case. They can iterate and readdress either the original weighting ascribed to each outcome or the mapping to assessment, or both. Importantly, they are now aware that if an aspect of the learning ecosystem is adjusted, something else in the system must change. If an assessment weighting needs to be increased, it will not only affect the teaching sequence, but also the timing of the assessment. The tool encourages this 'playing' to accommodate the iteration. It also encourages CDs to experiment with what other 'constructions' are possible. The precision of above Figure 3's final distribution increases the CD's confidence when adjustments are made, and does so even if none are needed, because the numbers provide a level of assurance that the alignment is there.

F4: Rubric composition and outcome aggregation

Course Learning Outcomes	Assessment 1	Assessment 2	Assessment 3	Assessment 4
CLO 1	57%	47%	0%	0%
CLO 2	43%	18%	29%	12%
CLO 3	0%	0%	24%	14%
CLO 4	0%	35%	0%	47%
CLO 5	0%	0%	47%	28%
CLO 6	0%	0%	0%	0%
Assessment Total % (Should be 100%)	100%	100%	100%	100%

Figure 4. Rubric composition and outcome aggregation

The Assessment Weight table is now broken up into the CLO composition of each assessment. The numbers are approximate but provide the CD with a plan to ascribe weight to components of their assessment. In Figure 4 above, the tool suggests that A1 has nearly 60% of its questions dedicated to CLO1 and the other 40% to CLO2. Consequently, the rubric's criteria should mirror that ratio, greatly assisting in the writing of the rubric. The advantage here is in ensuring that the outcomes are fairly assessed across the assessments. But perhaps most poignantly, Figure 4 highlights how the data can be aggregated horizontally across the assessments and not just vertically, as is traditionally the case. The CD can capture the achievement of learners across individual CLOs and not have to accept that passing the assessments is an adequate proxy for the attainment of the CLOs. The scores awarded to a learner in questions related to CLO1 can be aggregated across A1 and A2 because the proportionalities have already been established. This information is vital in iterating the future design of the course, assuring learning for accreditation and/or School requirements, and identifying the type of support future learners may need in a highly efficient manner. At this point, the CD has sufficient information to ensure the alignment of their course. However, a greater level of precision is available for the CD if they have deconstructed their CLOs into subset skills.

The beginning of a journey

Initial feedback from CDs during our consultations was encouraging. The 'aha' moments abound, with CDs constructing new insights into their alignments, including changing: a CLO based on the weighting choices; assignment timing to ensure enough teaching of an outcome had occurred; an assessment type to match the

composition of the CLOs feeding into it; and using the proposed criteria composition to make rubric writing easier. Some redesigned their tutorials to mirror the distribution for learning to align with the weightings of assessment criteria while others used the development of subset skills as the teaching sequence.

What began to emerge for us through the continuous dialogue was that the deliberate repositioning of the educator, who, in constructing the alignment, was in fact constructing a deeper understanding of what the learning narrative can be. It seemed analogous to us that what we encourage learners to do in the CA process is exactly what the CD was experiencing in iterating with the learning narrative. Like a learner who begins to demonstrate stronger and novel construction of connections once they 'get' the alignment, a CD who 'gets' the alignment could construct a more coherent and creative teaching sequence.

As we progress towards the next stage of our project, we aim to further test the validity, reliability and scalability of this tool and evaluate its effectiveness by investigating its impact not just on course alignment, but also on the CD in the 'construction' of the learning narrative. This research will continue to test our claim that CA is made more powerful when the educator has experienced CA themselves in the course design process. In the age of AI and the promise of it being able to do the CA for you, this research offers an important contribution to demonstrating the undeniable need for the human to be at the centre of the CA process, and further the notion that to move forward in learning, we must also be backwards looking. The reflective cycle that now includes the CD's iterative design experience provides a novel consideration for CA and furthers Biggs and Tang's (2011) aim for CA to be a journey, and not simply a destination.

References

Biggs, J. B. and Tang, C. (2011). Teaching for quality learning at university: What the student does. McGraw-Hill Education (UK).

Cropley, D. H. (2020). Applying quality function deployment to the design of engineering programmes: approaches, insights and benefits. *Australasian Journal of Engineering Education, 26(1),* 138–151. https://doi.org/10.1080/22054952.2020.1776532

Ervin, L., Carter, B., & Robinson, P. (2013). Curriculum mapping: not as straightforward as it sounds. *Journal of Vocational Education & Training, 65(3)*, 309–318. https://doi.org/10.1080/13636820.2013.819559

HESF Domain 3: Teaching | Tertiary Education Quality and Standards Agency. (2022, October 13). Teqsa.gov.au. https://www.teqsa.gov.au/how-we-regulate/higher-education-standards-framework-2021/hesf-domain-3-teaching

Larkin, H., & Richardson, B. (2012). Creating high challenge/high support academic environments through constructive alignment: student outcomes. *Teaching in Higher Education*, *18*(2), 192–204. https://doi.org/10.1080/13562517.2012.696541

Loughlin, C., Lygo-Baker, S., & Lindberg-Sand, Å. (2020). Reclaiming constructive alignment. *European Journal of Higher Education, 11(2),* 119–136. https://doi.org/10.1080/21568235.2020.1816197

Ruge, G., Tokede, O., & Tivendale, L. (2019). Implementing constructive alignment in higher education – cross-institutional perspectives from Australia*. Higher Education Research & Development*, *38(4),* 833–848. https://doi.org/10.1080/07294360.2019.1586842

Sadler, D. R. (2005). Interpretations of criteria-based assessment and grading in higher education. *Assessment & Evaluation in Higher Education*, *30(2),* 175–194. https://doi.org/10.1080/0260293042000264262

Wang, X., Su, Y., Cheung, S., Wong, E., & Kwong, T. (2012). An exploration of Biggs' constructive alignment in course design and its impact on students' learning approaches. Assessment & Evaluation in Higher Education, 38(4), 477–491. https://doi.org/10.1080/02602938.2012.658018

Moss, P. & Ruthnappulige, S. (2025). Constructive alignment: A journey, not a destination. In S. Barker, S. Kelly, R. McInnes & S. Dinmore (Eds.), *Future-focused: Educating in an era of continuous change*. Proceedings ASCILITE 2025. Adelaide (pp. 284-289) https://doi.org/10.65106/apubs.2025.2663

Note: All published papers are refereed, having undergone a double-blind peer-review process.

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