

Curriculum Alignment of Thinking Skills Using Bloom's Taxonomy

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Abstract

This paper focuses broadly on curriculum alignment in the English for Liberal Arts (ELA) programme at International Christian University (ICU) in Tokyo, Japan. More narrowly, it examines three Course-Wide Assessments (CWA) recently developed for one ELA stream of the Academic Reading and Writing (ARW) course. The three CWAs were designed to align with the Learning Outcomes (LO) for the stream. Applying Bloom's revised taxonomy to examine the cognitive demands of the CWAs and their alignment with the grading rubrics and learning outcomes, reveals three areas for improvement. First, greater clarity in the CWA documents is needed to identify the cognitive demands of each task. Second, greater acknowledgement of these cognitive demands is required in the grading rubric. Finally, the cognitive demands of the tasks may need articulating more explicitly in the Learning Outcomes document so that there is stronger curriculum alignment.

Over the last 30 years, there have been increasing demands for universities in the US to improve and be accountable for their teaching (Russell & Markle, 2017). This has been mirrored in the UK with the establishment of the Quality Assurance Agency, and in Australia with its Tertiary Education Quality and Standards Agency. Such accountability has led to greater levels of curriculum development and further discussions about curriculum alignment (Watermeyer, 2011). One shared objective of curricula in most, if not all, American, British and Australian universities (and doubtless others) is the development of students' critical thinking abilities. Indeed, the promotion of critical thinking and creativity as an improvement of tertiary education internationally is central to an Organisation for Economic Co-operation and Development (OECD) project ("Fostering and Assessing", 2019). The OECD points out that critical thinking and creativity are fundamental competencies of graduates entering the workplace. ICU has been part of this project since 2019 and attempts have been made in the College of Liberal Arts (CLA) to further develop creativity and critical thinking within the framework of an aligned curriculum (Nicholas, 2020). Moreover, discussions within the English for Liberal Arts (ELA) programme at ICU have looked at nurturing critical thinking (e.g. Kiyosawa, Kobayashi, Koizumi, Yoshimuta & Iwata, 2018) and aligning educational practices. The introduction of course-wide Learning Outcomes (LOs) in 2010 represented one significant attempt to address curriculum alignment. A more recent development has been the introduction of course-wide assignments (CWAs) in spring 2020.

This study looks at one set of CWAs recently introduced in the ARW course in Stream 3 of the ELA programme. It assesses the degree of alignment between the CWAs and the LOs by focussing on critical thinking skills. It applies Bloom's taxonomy (Krathwohl, 2002) to do this. As a secondary focus, the study also considers the utility of the taxonomy as a tool for curriculum alignment.

Literature Review

Curriculum and Curriculum Alignment

There is a general lack of shared understanding of what *curriculum* means, especially in higher education (Fraser & Bosanquet, 2006). In this paper, and the ELA more broadly, we adopt the 'curricula as documents' interpretation, which incorporates documentation pertaining to objectives, teaching, and assessment (Shu, 2012).

An important corollary of the curricula as documents interpretation is the concept of curriculum alignment. This refers to the coherence of the curriculum in terms of the documented relationships between learning objectives, teaching, and assessment. In other words, an aligned curriculum has learning objectives informing what is covered in the classroom, and these objectives also relate directly to assessment tasks (Gagné, Dumont, Brunet & Bucher, 2013). Curriculum alignment is a significant goal as research indicates it leads to better student learning (Biggs, 2014; Squires, 2012; Watermeyer 2011). However, Squires (2012) notes that achieving curriculum alignment is not easy. This is partly because of the dynamic and complex nature of curricula (Ziebell & Clarke, 2018). It is also because of the challenges presented by the drafting of learning objectives and assessment documents.

It is important to note that broad curriculum objectives are usually articulated more narrowly as Learning Outcomes (LOs) for specific courses. These are, "statements that specify in measurable terms what a student will know or be able to do as the result of having successfully completed a unit of learning" (Schoepp, 2019 p. 616). Biggs (2003) argues that LOs are essential for alignment. However, writing clear LOs is not easy. A review by Schoepp (2019) investigated the quality and utility of LOs in a number of high-ranking universities in the US. His findings revealed that LOs are poorly written, which is detrimental to alignment and, therefore, student learning.

Well written LOs also need to align with assessment (Squires, 2012). Nevertheless, assessment tasks are the major cause of misalignment in the curriculum (Biggs 2003). In other words, designers of assessment tasks may *believe* that they are enabling students to apply their learning. However, analysis can reveal shortcomings which limit the effectiveness of the assessment as a forum for students to demonstrate what they can do with their knowledge.

Critical thinking and Bloom's Taxonomy

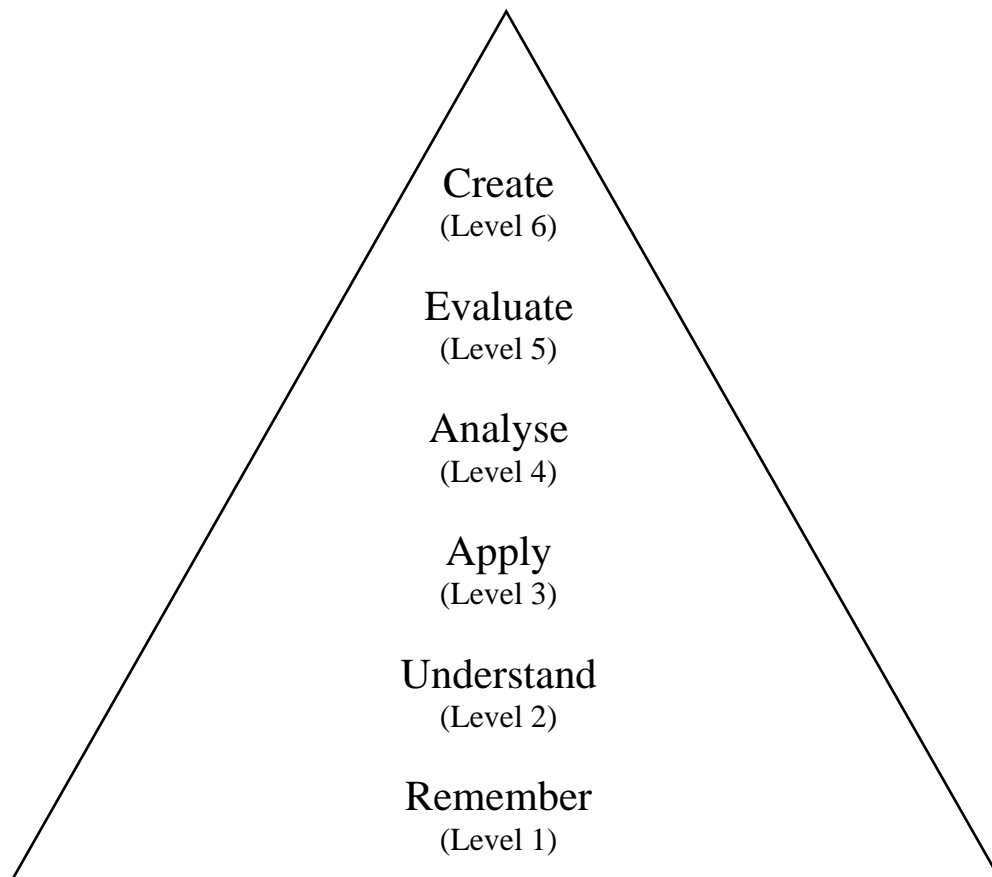
As noted, development of critical thinking skills is one important goal of many universities around the world. However, there is no clear definition of *critical thinking*, nor is there an agreed list of critical thinking skills or dispositions (Nicholas & Raider-Roth, 2016). Furthermore, Nicholas (2020) notes that different elements of critical thinking may be emphasised depending on the academic discipline. However, the ELA leans towards a more discipline-general definition of critical thinking since the programme is foundational and generalist in terms of the topics covered. Indeed, for most of their first and second years, ICU students study a range of courses before deciding on their major discipline. Furthermore, perceptions of critical thinking as articulated in ICU's literature confirm this discipline-general

learning. For example, ELA Director O’Connell asserts that, “The ELA ... encourages students to become critical, creative and independent thinkers” (*ICU Guidebook for Prospective Students*, 2021, p. 57). Developing discipline-general critical thinking skills is central to the ELA curriculum.

Bloom’s Taxonomy is associated with critical thinking and has been widely used by educators since publication in 1956. Three domains of learning were identified in the taxonomy, and it is invariably the cognitive domain with which most educators are familiar, the other two being affective and psychomotor (Munzenmaier and Rubin, 2013). Within the cognitive domain, six levels of skills were identified, starting with the basic (knowledge) and moving to the complex (evaluate). In 2001, Anderson and Krathwohl’s revised taxonomy marked the first significant adaptation of the taxonomy (see Krathwohl, 2002 for an overview of the changes). It is the revised 2001 version to which we adhere in this paper (Figure 1).

Figure 1

Bloom’s Revised Taxonomy of the cognitive domain (adapted from Krathwohl, 2002)



Munzenmaier and Rubin (2013) note two significant effects of the original taxonomy. First, it shifted the classroom focus from teaching to learning. Second, it reminded educators that learning is far more than remembering and understanding, and that requiring the four higher levels of critical thinking is essential. According to Munzenmaier and Rubin (2013), the taxonomy is widely used when writing learning objectives, and the list of ‘action’ verbs

associated with each thinking level (so-called operational verbs) is key when aligning LOs with teaching and with assessment.

As discussed earlier, assessment is fundamental for curriculum alignment. Designers of assessment tasks may *believe* that assessment tasks align with the learning outcomes and enable students to apply and demonstrate a range of thinking skills. Analysis of the assessment tasks using Bloom's Taxonomy can reveal the extent to which this is so.

From the above discussion, we developed three research questions.

- Research question 1 (RQ1): What are the cognitive demands of the three CWAs in ARW3 (spring) and how explicitly are the cognitive demands stated in the CWAs?
- Research question 2 (RQ2): To what extent does the grading rubric for each CWA explicitly address the cognitive demands identified in RQ1?
- Research question 3 (RQ3): Do the cognitive demands identified in RQ1 align with the critical thinking learning outcomes for this stage of the course?

Method

Context

Academic Reading and Writing (ARW) is one of the core compulsory courses in the first-year ELA program. ARW provides students with “the foundations of . . . [their] Liberal Arts education . . . [by] learning how to . . . write and think critically” and teaches them to ‘write persuasively with good support and clear thinking’ (*The Student Guide to Writing in the ELA*, 2019, p. 26).

This study focussed on the Spring Term in ARW Stream 3. This is the largest of four first-year streams and comprises approximately 320 students. *The ICU Guidebook for Prospective Students*, 2021 states that their TOEFL (ITP) scores range from 450 to 580. Thus, they can be broadly described as ‘modest to competent’ users of English (*Linking TOEFL iBT Scores*, 2010). There are two further significant characteristics of Stream 3 students. Firstly, they are novice academic writers. In an earlier study, 50% of ARW students surveyed at this level of proficiency reported no experience of essay writing (Enochs, Edwards & Gillespie, 2006). Secondly, they have little or no extended overseas experience and are therefore likely to have had little exposure to pedagogy that emphasises critical thinking.

Assessment Instruments and Procedure

Bloom's Revised Taxonomy comprises six levels of cognitive skills, from *remember* Level 1 (L1) to *create* (Level 6) (Figure 1). The amount of critical thinking required for each skill is believed to increase through the levels with *create* (L6) being the most cognitively challenging. Using this Taxonomy (Figure 1), we analysed the three Spring Term CWA writing tasks to answer our three research questions. More specifically, for each CWA, the following materials were examined: the assignment brief, the grading rubric(s) and the LOs. Bloom's taxonomy was used to assess how explicitly the cognitive demands are stated in the documents and whether there is alignment between each assignment brief, the grading rubric and the LOs. Each of the three spring CWAs presents students with a choice of tasks: CWA1 = 3 choices, CWA2 = 6, and CWA3 = 12. We decided to analyse one task for CWA1 and CWA2, and three for CWA3.

Analysis and Results

RQ1: What are the cognitive demands of the three CWAs in ARW3 (Spring) and how explicitly are they stated in the CWAs?

CWA1 requires students to write a paragraph. Here we analyse the cognitive demands of the assignment: *What is the most important difference between High School and University? Give reasons and examples for your answer.*

The prompt explicitly asks students to evaluate (L5) differences, as indicated by “the most important.” It is implicit that students remember (L1) and understand (L2) the “difference[s] between high school and university.” Furthermore, to decide their position, they should analyse (L4) the differences in order to select the most important, as indicated by the instruction to “Give reasons.” Thus, the assignment explicitly states L5 and implies Levels 1, 2, and 4. Table 1 shows the critical thinking demands of each CWA in the Spring Term and how explicitly they are described in the assignment briefs.

Table 1

The cognitive demands of the three CWAs in ARW3 (spring) and how explicitly they are stated in assignment briefs

Note ● = Explicitly stated cognitive demand
○ = Implicitly stated cognitive demand

Bloom's Taxonomy Level	CWA1	CWA2	CWA3 Essay prompt	CWA3 Question prompt	CWA3 Topic prompt
Create (L6)					○
Evaluate (L5)	●	●	●		○
Analyse (L4)	○	○	○	●	○
Apply (L3)		○	●	●	○
Understand (L2)	○	●	●	○	○
Remember (L1)	○	●	●	○	○

CWA2 requires students to write an Academic Reaction Paper in which students need to summarise and react to one section of a text. We analyse the first assignment prompt: *Summarise and [critically] react to Meiland’s ideas on the differences between high school and college.*

In order to summarise the text, students must demonstrate their understanding (L2) and to do so they must remember (L1) its meaning. Assuming that students have been taught summarising skills in class, it can be claimed that “summarise” is an explicit instruction. For the reaction, students are instructed to “critically react” to the text. Thus, “critically” explicitly indicates an evaluation (L5) of some kind. How students should produce their critical reaction

is not explicit. The task implies that they will apply (L3) the concepts in the text to their current educational situation and analyse (L4) the extent to which the concepts are corroborated by their experience. In sum, the ARP assignment makes explicit reference to L1, L2 and L5, and implies L3 and L4 (Table 1).

CWA3 asks students to write an essay. Here, we analyse the first Essay prompt, Question prompt and Topic prompt. The first Essay prompt presents the following assignment: *Meiland tells us that we need to doubt established beliefs. What are three established beliefs in college education that need to be questioned?* This can be considered explicit in that students should remember (L1) and understand (L2) the concept “established beliefs” and apply (L3) it to “a college education.” Also explicit is that students should evaluate (L5): students must discuss the “established beliefs . . . that need to be questioned.” It is implied that students analyse (L4) “three established beliefs in order to evaluate them.” The Essay prompt explicitly indicates L1, L2, L3, L5, while L4 is implied (Table 1).

The Question prompt is: *Is there an education gap for students who wish to go to universities in Japan? Why or why not?* This implies that students show understanding (L2) of the term “education gap.” However, they are not explicitly asked to define (L1) “education gap” and the concept is actually unclear. Additionally, students are explicitly asked to apply (L3) the notion of “an education gap” to education “in Japan.” They are then required to justify their answer by giving reasons: “Why or why not?” This demands analysis (L4). In summary, the *Question prompt* explicitly requires L3 and L4, and implies L1 and L2 (Table 1).

The Topic prompt is: *Equality and College Education*. Since no particular assignment is set, it is impossible to assess the type of thinking skills required. We suggest that the prompt inherently demands a degree of creativity (L6) from students in its design; students must create their own essay question (Table 1)

Our analysis of five CWA assignments shows that most of the cognitive demands are implicit (Table 1).

RQ2: To what extent does the grading rubric for each CWA reflect the cognitive demands identified in RQ1?

There are ten grading criteria for CWA1. Two are connected to cognitive skills:

Does the paragraph answer the question? (Implied L1, L2, L5)

Is there clear use of relevant reasons and examples? (Implied L4)

None of the cognitive demands in the assignment prompt (Table 1) are explicit in the grading rubric. For CWA2, students submit a draft and a final paper. There are different grading rubrics for each. In the draft grading rubric there are five criteria, three of which relate to cognitive skills:

Does the writer summarize (paraphrasing if necessary) Meiland’s main idea(s) accurately? (Explicit L1, L2)

Does the reaction contain a critical response to the ideas presented in the summary? (Explicit L5)

Are reasons with examples provided to support claims stated in the reaction? (Implicit L4).

The final draft of CWA2 has 15 criteria in the grading rubric. The three cognitive skills criteria are repeated from the draft. The criterion relating to the critical response now has an element of quality (“an effective critical response”). However, the meaning of “effective” is not explained. In sum, very few grading criteria in the two documents refer to thinking skills; the majority assess writing skills.

Curriculum Alignment of Thinking Skills

CWA3 is graded at three stages of the writing process: outline, draft, and final paper. In the outline, the cognitive skill implicitly rewarded in the grading rubric is analysis (L4), as indicated by references to: *thesis statement, reasons and examples, and sources*. No other cognitive skills are explicit.

The grading rubric for the essay drafts utilise blended criteria. That is, criteria that in previous CWAs were separated between thinking skills and conventions of academic writing, now appear in one criterion. For example, *Body paragraph x 3: each has a claim, with reasons and evidence. Plus, a clear topic sentence and a clear concluding sentence*. Therefore, it is difficult to determine what percentage of the rubric is devoted to thinking skills. Within the grading rubrics for the draft and final paper, implicit reference is made to analysis (L4) with the requirement to provide *reasons, evidence and examples*. The requirement to summarise and/or paraphrase a writer's ideas (L1, L2) is explicit in the final grading rubric. It is clear from this analysis that the grading rubrics for CWA3 do not explicitly reflect the cognitive demands identified in RQ1.

Research question 3 (RQ3): Do the cognitive demands identified in RQ1 align with the critical thinking learning outcomes for this stage of the course?

CWA1 and CWA2 are due in weeks 4 and 5 of the term, respectively. At this stage of the Spring Term 2020, the first five levels of critical thinking skills in Bloom's Taxonomy identified in RQ1 are absent from the LOs of the ARW syllabus.

The process for CWA3 begins in week 7, continues with the draft in week 8, and the final draft in week 10. We cannot find explicit reference to LOs related to the cognitive demands identified in RQ1. However, the LOs are explicit in listing the critical thinking skills needed for argumentation. Students will need to apply argumentation skills to complete CWA2 and 3. Nevertheless, this is not explicit in either the CWA briefs or the grading rubrics.

It is clear from this analysis that there is a lack of alignment between the cognitive demands of CWA1, 2, and 3, and their expression in the LOs.

Discussion

The next part of the paper discusses our research questions in relation to the three CWAs. Finally, we discuss the efficacy of using Bloom's taxonomy to carry out this analysis.

RQ1 and RQ2 in relation to Course Wide Assessment 1

The results show that the CWA tasks require students to use thinking skills that are in the top three levels of Bloom's hierarchy (Table 1). However, most of the thinking skills required to complete the assignments are not explicit in the assignment briefs. Moreover, the grading rubrics are generally not explicit in terms of cognitive demands.

Intuitively, the prompt for CWA1 presents little cognitive challenge, allowing students to draw on their perceptions of differences between high school and university. The application of Bloom's taxonomy, however, reveals that the task is deceptively simple. Students are asked to assess the differences (evaluate L5) and select the "most important" one in some way. How to do this is not explained and "most important difference" could be interpreted in a number of ways, from the most surprising to the most challenging to adapt to. Additionally, since the assignment is given in the second week of term, students have little actual experience of university to inform their answer. Simple language in assignment briefs can often belie complex cognitive demands.

Curriculum Alignment of Thinking Skills

This raises two questions about assignment briefs in general: are teachers aware of the cognitive challenges presented by assignment briefs and, secondly, are they aware of what would constitute a good response? If the answer to both is no, as found when discussing CWA1, it can be presupposed that students will not be taught how to approach the task. This assignment brief jumps to level 5 thinking skills in terms of Bloom's taxonomy. The cognitive leap in the assignment suggests an absence of the type of scaffolding much needed for novice writers in terms of classroom pedagogy. In the absence of task explicitness, a range of possible answers displaying different thinking skills can be expected, from simple descriptions of difference (L1, L2) to analyses of why differences exist (L4) and evaluations of differences as positive or negative (L5).

One way to improve the brief would be to make the process explicit, as the discussion above suggests. Nevertheless, examination of the grading rubric indicates that the purpose of the task is to enable students to show understanding of basic academic writing conventions. The grading criteria are heavily weighted towards writing skills, not thinking skills. This is the students' first academic writing assignment and form takes precedence over function; therefore, a better solution for the brief would be to reduce the cognitive demands in terms of critical thinking. For example, the prompt could be changed to *Identify and describe a difference between high school and college*. In this case, the cognitive challenge is brought down to L1 (Remember) and L2 (Understand), allowing students to focus their attention on developing their writing skills. It would also more closely align the task with the grading criteria. Thus, a relatively simple modification of the task in terms of its cognitive demands can resolve misalignment.

RQ1 and RQ2 in relation to Course Wide Assessment 2

The assignment brief for CWA2 equally lacks explicit instruction. Again, a leap in thinking skills is evident in the assignment brief from L2 (summarise) to L5 (critically react). Since it is clear that producing a critical reaction to an academic text is a cognitively demanding task, and since the ELA instructors are highly qualified teachers, it is assumed that students are taught how to do the task. This highlights how discussion of task explicitness and alignment must include classroom pedagogy. We cannot know how clear a task is to students without knowing what and how they have been taught. This is a limitation of the current study. One question arising from this is what needs to be explicit in the assignment brief and what needs to be covered in classroom pedagogy. With CWA2, it can be argued that because the students are novice writers and this is the first critical reaction they have written, the more explicit the brief, the better. Articulating how to write a reaction in the assignment brief will increase the chances of students doing so successfully. It will also create a shared understanding for teachers and thus ensure greater standardisation across the stream, which has to be desirable when dealing with Course Wide Assessment.

The grading rubric for CWA2 is heavily weighted towards writing skills rather than thinking skills, as with CWA1. The reason for this may be, as above, that the teachers are focussing primarily on developing the skills of novice writers at this stage of the term. Nevertheless, the task presents cognitive challenges which need aligning with the grading criteria. Assuming students are taught how to write a critical reaction, the criteria should be developed to include more reference to thinking skills.

RQ1 and RQ2 in relation to Course Wide Assessment 3

CWA3 presents a variety of essay tasks with varying degrees of explicitness in terms of cognitive thinking skills, ranging from mostly explicit (i.e. *Essay prompt*) to entirely implicit

(i.e. *Topic prompt*). Seen positively, this presents a range of choices for students to research their own interests, and is therefore motivating. However, as discussed, explicitness in the assignment brief is very important for alignment. Therefore, we strongly recommend that CWA3 be revised to this end

Two interesting points arise from the CWA3 grading rubric in relation to the explicit expression of cognitive demands. The first of these has been explained in the Analysis and Results. The use of blended grading criteria (covering both thinking and writing) prevents assessment of specific cognitive skills. Therefore, we suggest separation of thinking criteria from writing criteria in the grading rubric.

The second point of interest is that the same grading rubric is used for tasks which present very different levels of cognitive challenge. As Nicholas (2020) argues, “Uniform application of an analytic rubric to unequal assignment prompts is problematic.” In other words, for CWA3, different grading rubrics are needed to reflect the cognitive complexity of each task and to assess student responses accordingly.

RQ3 in relation to Course Wide Assessments 1-3

Writing skills are heavily foregrounded in the LOs throughout the spring term. Thinking skills are not introduced until half way through the term, when argumentation is taught. Thus, CWA1 and CWA2 are closely aligned with the LOs in terms of writing conventions. However, they are not aligned with LOs connected to thinking skills. For example, CWA2 requires students to use argumentation skills before they are introduced in the LOs.

In considering alignment, it is ordinarily desirable that LOs determine teaching and assessment. LOs are written first and assessment materials reflect the LOs. Thus, when changes are necessary to achieve alignment, it is the assessment documents that are modified, not the LOs. Indeed, for CWA1, for instance, we suggest modifying the assignment to reflect the emphasis on writing skills and the absence of critical thinking skills in the LOs at this early stage of the Spring Term. Another example of LOs driving assessment can be found in our analysis of and suggested solution for CWA3 documents. For CWA3, the assignment brief implies an argumentative essay of some kind, and this aligns with the argumentation LOs at this stage of the syllabus. However, since argumentation is neither made explicit in the CWA3 assignment briefs nor in the grading rubric, it is the assessment documents that require modification, and not the LOs.

We also suggest, though, that assessment can lead to a modification of the LOs. Thus, there can be a more dynamic interplay between these elements of the curriculum. In the case of CWA2, the LOs have been found to be not fully aligned with assessment and need to be updated so that they align with the critical thinking demands of the task.

Using Bloom’s Taxonomy to appraise cognitive demands and cognitive alignment

Our discussion now turns towards the utility of using Bloom's Taxonomy to analyse tasks and grading rubrics in terms of their cognitive demands and alignment. In short, the taxonomy was extremely helpful in analysing the cognitive demands of the CWAs and to then check these for alignment with the LOs.

However, we should acknowledge the potential ambiguity and, therefore, limitation of some of the language in Bloom’s Taxonomy. Superficially, it appears simple and easy to apply. As Nicholas (2019) claims, “Operational verbs are key levers in learning objectives and assignments” (qtd in Nicholas 2020). Nonetheless, ambiguity around many of the operational verbs remains and once we started applying the cognitive levels to the CWAs, we found ourselves asking many questions about our interpretations. Indeed, various interpretations of

these verbs reveal that they often appear in different cognitive levels of the taxonomy (Stanny 2016). As she states, “Independent of context, many words have several meanings, which contributes to ambiguity about the level of cognitive skill intended” (p. 8). Adelman (2015) was especially interested in writing clear LO statements using operational verbs which were measurable, to minimise ambiguity. He recognised that some verbs were discipline-specific and that others had different nuances of meaning depending on the discipline. It is clear, therefore, that instructional designers need to choose the operational verbs carefully, especially in discipline-specific courses. At the very least, if teachers use such operational verbs in assignment briefs, they need to be very clear about what a verb means, at a course-wide level, and, ideally, at a programme-wide level. That is, shared understanding of meaning through discussion is required. Such discussion should be seen positively because it leads to shared understandings, explicitness and transparency. While some readers may disagree with the current analysis and interpretations, the point is that it is possible to achieve agreement and to have a common understanding of how to phrase assignment briefs and grading rubrics. As Muzenmaier and Rubin (2013) suggest, this “widely accepted metric . . . [can] provide a common language and framework for collaboration” (p. 2). If shared interpretations of the taxonomy can be achieved at a course-wide level, it represents a very important step towards curriculum alignment.

A further area of potential difficulty when using Bloom’s Taxonomy relates to the tension between teacher autonomy and the need for a shared, aligned curriculum. There may be resistance from teachers to what is perceived as a reduction of autonomy resulting from the imposition of a common framework, such as the taxonomy. Furthermore, in reference to LOs, Schoepp (2019) claims that they are frequently viewed with suspicion by educational staff: not only can such frameworks curtail teachers’ freedom but they can also be used as a tool for teacher evaluation. Thus, curriculum writers need to be aware of this potential tension.

Conclusion

Curriculum alignment is extremely important and, in this paper, we used Bloom’s Revised Taxonomy to analyse alignment of thinking skills between assessment tasks, grading rubrics and LOs. We found some misalignment. Moreover, with a shared understanding of our interpretation of its cognitive levels, Bloom’s revised taxonomy enabled us to identify how to realign the curriculum. Based on our experience, realignment is not difficult to achieve when using a framework such as the taxonomy.

Important considerations arise which need investigating further. We have stressed that requirements of tasks and grading rubrics need to be explicit. However, there are practical limitations to this in terms of how much information should go in the assignment brief. In our experience, such documents need to be concise and should not overwhelm students with information. Thus, it is inevitable that those who write these documents make assumptions about what the students know and/or what teachers will cover in class. If the assumptions are incorrect, this is problematic. Another consideration relates to the scaffolding of tasks throughout a course. Rubrics may change over time; what is assumed to have been learnt can become less explicitly articulated in assessment documents, while new areas of knowledge will need to be stated more explicitly.

Two clear limitations of the study remain. First, it focuses solely on curriculum alignment as expressed in various documents. It does not investigate the role of pedagogy on alignment. Second, Bloom’s Taxonomy only permits alignment in terms of critical thinking

skills. Clearly, universities hope to foster a broader range of skills and values in their students, such as those often expressed in mission statements. In the current climate in Japan, these may include an appreciation of diversity and internationalisation. It is equally important that curricula be aligned in these areas.

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