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Facilitating Programme-Level Assessment Working Teams to Develop Shared Rubrics Across a UG and PG Programme Portfolio in Business Education

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Chapter 9
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ABSTRACT

This chapter is a reflective study reporting on a College-wide common rubrics initiative in a Technological University (TU) in Ireland. Assessment and feedback are enduring issues for the higher education sector both in Ireland (as well as internationally). By addressing these priorities, we are focusing on the connected areas of marking practices and feedback processes in a College of Business. The chapter highlights the collaborative nature of an initiative on programmatic assessment design, its breadth of scope, and the high levels of support provided to staff and students through the design process. In particular, rubrics are the main focus of the chapter with an overview of Programme Learning Outcome (PLO) mapping provided as part of the context. Four interdisciplinary rubric working teams were formed across the College of Business to develop common rubrics in the areas of reflective practice, critical thinking, individual/group presentation skills and industry consultancy projects. This programme-based study differs from other previous work as it involves working on a consistent basis with the challenges of bringing cultures, practices and understandings of disciplinary teams together in a technological uni-

versity context. Findings from our collaborative common rubric working teams showed the importance of avoiding designing overly complex rubrics and of focusing on the student's work providing evidence of meeting, exceeding, or falling short of the quality being looked for. It also highlighted the importance of rubric literacy as we were using qualitative language in all the target statements and advised staff to avoid subjective language in favour of explicit guidance. We proposed the need for a common language on 'Teamwork' and on proceeding with this as a College-wide approachd a similar structure or focus, using the same marking rubric was recommended. We advised staff to work as a team to master the rubrics, and to ensure that their students had m. Future work can explore the use of AI tools which can automate the feedback process and provide lecturers with customised rubrics based on their specifications.

INTRODUCTION

Although working collaboratively on rubric development is well-documented in the literature (Allen & Knight, 2009; Morton *et al*., 2021), the seminal work of Sadler (2009) and Andrade (2005) was useful in turn for our specific context. The former for contributing to our understanding of how to design assessments to enable learners to demonstrate sophisticated cognitive abilities, integration of knowledge, complex problem solving, critical reasoning, original thinking, and innovation. The latter for using rubrics with undergraduate and postgraduate students.

In the context of this collaborative rubric initiative across a College of Business, there has been a clear intention to address grading, based on a realisation that the grade alone does not provide sufficiently informative feedback to students. Jutras (2023) argues that the question of grading schemes is a recurring topic in academic discussions where the key word is evaluation, in this instance of assignments and exams. By taking a college-wide approach to designing and using rubrics in common areas that deepen student thinking and learning, the aim of this collaborative work was to:

- help students improve their work by making assessment expectations explicit and aiding the feedback process; Panadero & Jonsson (2013) have previously reported that rubrics help learners clarify expectations, reduce anxiety, and improve self-efficacy.
- support student learning in an environment where independence and the ability to self-regulate is important; a key part of the context for the focus on rubrics is the College's signature pedagogy on student-centred learning, encouraging students to take ownership of their learning and be more self-directed. As Sadler (2009) explained, the aim is for learners to become better able to engage in self-monitoring the development of their own works.
- aid programme teams in achieving higher levels of consistency when assessing student work; Jonsson & Panadero (2017) discussed how rubrics can help with reliability of grading when multiple markers are involved, and thus help with moderation of markers and quality assurance processes.
- improve efficiency for staff; it is known that rubrics are attractive to busy academics as they can save considerable time, especially as they reduce the number of queries from students - which was previously discussed by Honeychurch (2015) in a Business School context.

The context for this project is what was previously the College of Business and is now the Faculty of Business in Ireland's first Technological University **-** TU Dublin **-** which came into existence in January

2019, merging three existing higher education institutions. Technological universities offer programmes that are vocationally and professionally oriented. The Faculty of Business is one of Ireland's largest Business Schools in terms of full-time and part-time student enrolment and has been in existence for over thirty years. The Faculty offers undergraduate, postgradauate and executive education programmes to approximately 7,000 students across a range of Business disciplines. The five Schools at the centre of this project were the Graduate Business School, Schools of Management, Marketing, Retail, and Accounting & Finance.

As can be imagined for this Business Faculty with its extensive history, moving into a new Technological University context has meant that there is significant change happening to the existing institutional structure and fabric, and such system-wide restructuring can have a profound impact for students and staff. Against this backdrop of institutional change, the Faculty of Business is continuing to hone its professionally oriented national and international programme provision for students and reflect on how it designs programmes to meet society and industry's needs for the future.

BACKGROUND

There were two parallel and interlocking assessment and feedback collaborative projects taking place in the College:

- A Programme Learning Outcome (PLO) mapping initiative
- College Level PLO Rubric project

The use of rubrics had been increasing steadily within the College, with faculty members becoming more comfortable with their development and implementation and reporting several benefits for both students and staff. In an effort to extend the benefits of rubric usage across the College, the Head of Learning Development established a number of collaborative rubric working teams. A decision was made to focus on Programme Learning Outcomes (PLOs) and this was influenced by several factors.

Firstly, the College was grappling with an issue of over assessment for a number of years. Previous studies on over-assessment provide useful background for our work. A study by Jessop *et al.* (2014), analysing 23 degree programmes in eight universities, offers an approach (TESTA) for helping teachers to redesign assessment regimes. A study by Jessop & Tomas (2016) on 73 programmes in 14 UK universities reported that students typically encounter eight times as much summative as formative assessment, a dozen different types of assessment with more than three quarters by coursework. They argue that high varieties of assessment are probable contributors to student confusion about goals and standards. These findings build on an earlier study by Gibbs & Dunbar-Goddet (2009) who reported that programmes were found to have either a high volume of summative assessment or a high volume of formative-only assessment, but never both at the same time. Harland & Wald (2021) placed the rationale for increased assessment levels on semesterisation and a module structure emerging in the 1990s in their New Zealand HE context, arguing that assessment levels have remained high and unchanging since. This mirrors the modular structure of the Irish HE sector which began in the mid-1990s and had been introduced to allow students the option of spreading their assessment and examination workload across the academic year, thereby reducing pressure at the end of the year.

In our College, at the majority of programme examination boards, external examiners highlighted areas to address to alleviate the workload, for either upcoming or future marking, as well as making marking (or the results thereof) more meaningful. Students have continuously asked for lower quantity of continuous assessments and more in-depth feedback to show their progress across their programme of study. From the academic staff' perspective, the issue was that lecturers were spending large proportions of their time marking/grading that is created from asking students to demonstrate their skills often, at length, and in detail in their programme of study. Every discussion post, short-response essay, exam, annotated bibliography, individual/group work, and capstone project was weighed, ranked, and assigned a numerical grade. While this rigorous approach to assessment challenged students and ensured the achievement of learning outcomes, the College needed to consider ways of reducing the workload for both students and lecturers while maintaining rigour and quality.

Secondly, the College was preparing to seek accreditation from the Association to Advance Collegiate Schools of Business (AACSB). AACSB provides quality assurance, business education intelligence, and learning and development services to over 1,850 member organizations and more than 950 accredited business schools worldwide (AACSB, 2022) and is one of three major Business Schools accreditations, along with AMBA (Association of MBAs who have traditionally focused on accrediting MBA programmes at Business Schools but have recently extended their remit with BGA accreditation) and EQUIS (EFMD Quality Improvement System which is the leading international system of quality assessment, improvement and accreditation of Business Schools).

Beginning the PLO Mapping Process

Along with mapping PLOs, programme teams were required to map assessments, with a dual purpose of AOL mapping and of addressing the issue of over-assessment. Detailed PLO mapping and discussion proved to be immediately helpful in creating a more efficient assessment strategy. For instance, in one particular programme, several modules were assessing reflective writing skills, which led to unnecessary workload for students and faculty. Using the IRMA tool provided lecturers with greater clarity across the programme, with the result that one lecturer was content to stop assessing reflective writing skills, safe in the knowledge that it was being assessed elsewhere, and could focus instead on simply reinforcing what had already been introduced to students. In another module, where students were required to present on a team project, the lecturer realized that they no longer had to assess presentation skills, as they were adequately assessed elsewhere, but rather they could focus on assessing other module learning outcomes.

As part of AACSB preparation, the College was seeking to further enhance its approach to Assurance of Learning (AOL), a key requirement of AACSB accreditation (Standard 5) (AACSB, 2020). AOL processes measure what a student has learned upon completion of their programme (against stated learning competencies), identify areas where student learning is deficient, and outline changes to the curriculum and learning experience to ensure that learning competencies are met (Tarnoff, 2023; AACSB, 2020

A key principle of AOL is the measurement of PLO achievement and a process by which the programme team is seen to 'close the loop', designing for PLO achievement, reflecting on student performance against PLOs, making the necessary changes to the programme before measuring again. Schools are expected to measure twice in a five-year cycle, with improvements made between two measurement cycles to improve the curriculum. As such, Schools typically "close the loop" at least once in a five-year cycle (AACSB, 2019).

Curriculum mapping plays a central role in the AOL process, allowing programme teams to audit the achievement of learning outcomes or objectives, while simultaneously providing students with information which allows them to play a more active role in their learning (Biggs, 1999; Harden, 2001). In writing about quality control in curriculum development, English (1978) proposed the three categories of declared, delivered and learned curriculum. This seminal work influenced a significant volume of further research, with the field of curriculum mapping expanding significantly. For instance, Cuban (1993) proffered three different labels of intended, taught and learned curriculum while also adding a fourth category, which they labelled tested (Cuban, 1993), while Jacobs (1997) built on English's (1978) work in creating a seven-stage model of curriculum mapping.

While much of the earlier work on curriculum mapping was focused at the school level, research has since expanded within the Higher Education context (Tariq *et al.*, 2004; Sumsion & Goodfellow, 2004; Robley, Whittle & Murdoch-Eaton, 2005a, 2005b; Spencer *et al.*, 2012; Okojie *et al.,* 2022). Joyner (2016) argues that curriculum mapping and assessment will increasingly be required as Universities seek quantitative data to monitor college and departmental performance. However, it is also a crucial consideration for Business Schools committed to obtaining international accreditations such as AACSB. As discussed, AOL requires business Schools to demonstrate how Programme Learning Goals/Outcomes are achieved. As the planned curriculum does not always align with the operational curriculum (Hale, 2008) AACSB like to see clear evidence of curriculum mapping and assessment (along with enhancement).

In order to help them with this mapping process, Business Schools generally use a 3 or 4 step mapping process. Hale (2008) identified three stages of learning, introductory (where students are first exposed to the material or topic), developing (where students strengthen their understanding) and mastery (where the students have a full understanding of the topic). A variety of this model, referred to as IRMA is commonly used by AACSB accredited Business Schools, a sample of which are shown in Table 1. Based on the understanding that it takes more than a single course/module to develop certain skills (Tarnoff, 2023), the IRMA model helps Schools to map (across a programme) where a PLO is: introduced, reinforced or where students have an opportunity to practice, and where the student has had sufficient opportunities to practice and should now be in a position to demonstrate mastery. Some Schools only use I, R and M, whereas others use A to specify where the PLO is assessed.

Table 1. University/Business school usage of IRM/A model

University	Categories			
Berkeley	Introduced	Reinforced/Practiced	Mastered	Assessed
University of Hawaii	Introduce	Reinforce	Master	Assessment
University of Tennessee at Chattanooga	Introduced	Reinforced/Practiced	Mastered & Assessed	
University at Buffalo	Introduced	Reinforced and/or Practiced	Mastered	
Western Kentucky University	Introduced	Reinforced	Mastered	Assessed

While many other alternatives to IRMA exist, including T/D/M/A (Training, Development, Monitoring, Assessment (Gibbs *et al.,* 2004) and I/E/U/A (Introduced/Emphasized/Utilized/Comprehensive

Assessment (Stassen *et al.*, 2011) to name but two, we decided to use IRMA as it had been previously introduced to colleagues and was used widely by AACSB accredited Schools. A key area for agreement centred on the concept and practice of 'Mastery' across programmes and how to assess for Mastery. As such, conversations with our programme teams took place on:

What does mastery look like in each discipline?
Are we assessing for content and skills mastery only in final year?
What happens if a discipline skill remains at introductory level e.g. is not measured for mastery?

ISSUES, CONTROVERSIES, PROBLEMS

This section discusses Programmatic Assessment and Feedback Design, with a focus on rubrics in Business Education. While the broad rationale for our work was a College-wide programme level assessment design and feedback strategy, the specific contribution of rubrics in this chapter are rubric literacy, and the plans about how this will be co-developed with staff and students, which are explored in the next section.

Introducing Rubrics

There were pockets of excellence with regard to rubric usage in the College (such as a financial reporting rubric which was detailed and useful for feedback purposes), and other rubrics had been developed and implemented by programme teams to help with the development of skills such as reflective writing and presentation skills. However, when we initially gathered together all existing rubrics for review it became apparent that some were not designed to provide adequate feedback to students. These rubrics were revisited by some teams as they set out on their PLO mapping journey and while the IRMA tool provided assurances to lecturers that key skills/ competencies, were being developed in a planned fashion, rubrics provided assurances around the quality and timeliness of feedback and the potential to further encourage self-directed learning.

While some rubrics were already in place, they: (a) had not always benefitted from a deep peer review at the design phase, (2) were by no means used consistently across programmes and (3) they had not been developed in line with the new PLOs. Therefore, the rubrics project was simultaneously launched to address these issues and ensure that each programme team could consistently use rubrics to help students to achieve PLOs. In differentiating between formative and summative assessment, and conscious of the need to allow students time to reinforce or practice, it was hoped that rubrics would be used at each stage of the learning journey, and not just when assessing for mastery. For instance, a presentation skills rubric could be used to provide feedback to a student consistently across their learning journey from the time of introduction, to reinforcement/practice, to mastery. It was also hoped that the project would create greater awareness of rubric use, provide opportunities for peer learning and discussion and also give support to academic staff looking to enhance their use of rubrics at a module level.

Core within this collaborative activity, multi-disciplinary teams were encouraged to reimagine and redesign rubrics for their programmes. Early on in the process, they were presented with a body of research and evidence on the pros and cons of rubrics, and lessons learnt from the literature. Reddy & Andrade (2010) critically reviewed the empirical research on the use of rubrics at post-secondary level and found that studies of the validity of rubrics have shown that clarity and appropriateness of language

is a central concern. Rubric literacy is a key consideration at the beginning of a process with staff and students. Dawson (2017) highlights that 'Rubric' is a term with a variety of meanings, and that over time it has come to represent divergent practices. This is significant to acknowledge as rubrics have been evaluated, mandated, embraced and resisted based on often imprecise and inconsistent understandings of the term. Brookhart (2018) also highlighted confusion that can exist when some studies called their assessment tool a "rubric" when in fact it was a rating scale, and in some rubrics, performance level descriptions used rating-scale language or counted occurrences of elements instead of describing quality.

However, in their more recent critical review of the arguments against the use of rubrics, Panadero & Jonsson (2020) concluded that rubrics seem to have more benefits than drawbacks, especially when used formatively. A useful study for our Business Education context was from Garrett *et al.* (2012) who found in a small Business School in the U.S. that methods driven and developed by faculty members can lead to a stronger 'bottom-up' approach to quality assurance, and the major lesson learned from their study is that there is no one single "right" way to do assessment.

PROCESS

Our primary rationale was ensuring that we were enabling students to achieve PLOs by providing clarity of expectations and clear feedback on performance. Such focus also helped with over-assessment as lecturers were assured that students were developing competencies relating to specific PLOs in earlier modules and could therefore refocus on other module level outcomes and remove certain MLOs, content and assessment.

How peer-led teams worked collaboratively to co-construct and review common rubrics

To initiate our new rubric work, we invited an international expert in the field of feedback to speak with all academic staff in the College on a number of key areas for understanding before the process got underway in the rubric working teams: the theoretical underpinnings of rubrics for assessment and feedback; the anatomy of a rubric; holistic v analytic rubrics; addressing consistent rubric design and use across UG degree programmes (what is the best approach to bring programme teams together to work on this; what design stages are needed); what does a year 1 rubric vs a year 4 rubric holistic vs analytic look like in a programme; avoiding over-assessment for students – how to plan for this as a programme team; how do rubrics differ for Business students; how can they be used to show advancement in Business practice (what does this involve? What does it look like?); and finally to share a number of Good Practice examples of rubrics in critical thinking and reflective practice.

The shared rubric design process (Figure 1) was aimed at both UG and PG degree-programme teams, who worked in parallel during the process and shared good practice as they re-thought their programme assessment strategies and undertook their collaborative design work.

Figure 1. Stages of the collaborative rubric working process
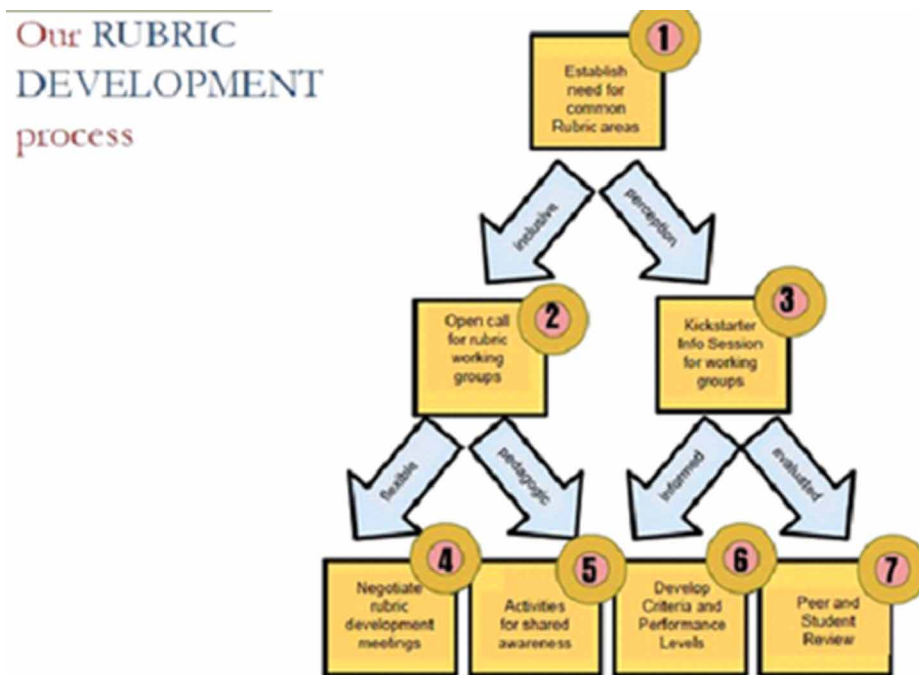
The specific rubric projects which is disseminated throughout the chapter are drawn from initiatives in community-based work, developments on work placements, digital assessment practices, as well as a selection of activities to develop digital literacy, critical thinking, teamwork and reflective practice in advance of final year capstone projects. These emerged from dual sources – over recent years, across a number of programmes in the School, external examiners in their quality assurance reports identified a need for reduction in assessments and improved feedback processes. At the same time, student feedback and staff experiences reported similar findings (Figure 2). This figure shows the rubric working teams at the centre of our process. Surrounding those, the process involved key considerations such as beginning with a challenging assignment, sustained inquiry, authenticity, student voice and choice, reflection, critique and revision, before ending with a public product.

Figure 2. Considerations informing the work of the rubric teams

A number of support initiatives were introduced to the collaborative rubric process. It was recognised that important work had already taken place in niche areas of the College but had not been widely disseminated. A first step was to address this, and a reflective practice 'swap-shop' was held where all programme teams were asked to identify examples of good practice in their Annual Quality Assurance report and representatives were invited to present to each other. The purpose of the Swap-Shop was to enable staff in the College to share their experience of designing and delivering good reflective practice opportunities for their students taking place on their modules/programmes. It provided an opportunity for colleagues to discuss, exchange, source and share ideas and good practices related to reflective practice in Business Education and consider how we could enhance these whilst supporting the development of our students.

Social construction of rubrics was important in our approach in collaborative working in teams, was the underpinning theoretical rationale, and formed the basis for activities in which lecturers and students engage to share common motives and work towards a common goal. Collaboration between the teams of academic staff in this initiative was a powerful professional development activity that helped the staff not only improve their assessment and feedback strategies in different ways but also learn new ideas to try in their practice. The individual lecturers were actively constructing their own knowledge on rubric design and development by way of experiences and interactions with others in their rubric teams. As Ragupathi & Lee (2020) report, rubrics provide educators with a greater understanding of their own teaching practice and encourage them to become reflective practitioners.

We want to now highlight the process we undertook and the lessons learnt from this experience in the form of a series of implications for other practitioners in Business disciplines.

In taking its initial steps on a journey towards AACSB accreditation, the College leadership team developed a set of Programme Learning Outcomes (PLOs) for Level 8 (Bachelor) and Level 9 (Master) programmes (see Tables 2 and 3). This work was informed by a peer review of AACSB accredited

schools, desk-based research on required graduate attributes and competencies, engagement with employers and colleagues. A set of seven PLOs was agreed for Bachelor programmes and six PLOs for Master programmes. Programme teams were then asked to adopt or adapt these PLOs for each individual programme. While the PLOs related to a number of different competencies, several were common and this required the rubric working teams to discuss the requirements of students at different levels, itself a very worthwhile exercise as it forced dep discussion about Faculty's expectations of students at different levels and what mastery looked like at each level.

As AOL outlines a process for mapping programme level learning competencies, initially this is where the College focused its energy, producing a set of common Programme Learning Outcomes (the College uses the language of Outcomes in alignment with Irish Quality Assurance standards) for both UG and PG programmes. These were distributed to Programme Chairs, along with a learning outcomes mapping template a Mapping Process Support Guide which Programme Chairs could use with their programme teams to reflect on and stimulate discussion about Programme Learning Outcomes (PLO) mapping. While the PLOs developed at College level were designed to be common across programmes at each level, Programme Teams were given licence to adapt and nuance the PLOs for their programmes.

Table 2. Undergraduate programme learning outcomes

Undergraduate Learning Goal/Outcome
Communication: Students will be able to research, organise, present, deliver and write an effective document in a professional manner.
Critical Thinking/ Problem Solving/ Entrepreneurial Decision Making: The student will be able to identify and analyse problems and devise appropriate solutions.
Teamwork: The student will be able to participate effectively in teams.
Using Information Technology: The student will be able to use existing technology effectively and have the skills necessary to adapt and apply new technologies.
Ethics and Corporate Social Responsibility: The student will be able to identify aspects of ethical dilemmas from multiple stakeholders' perspectives and offer viable alternative solutions.
Cross-Disciplinary Knowledge: The student will demonstrate the general/ core supporting knowledge relevant to the field of study (e.g. business modules such as foundation level marketing, accounting, management, economics, etc.)
Discipline-Specific Knowledge: The student will demonstrate the knowledge required to obtain an entry-level position in the discipline (i.e. profession)

Table 3. Postgraduate programme learning outcomes

| Postgraduate Learning Goal/Outcome |
|---|
| **Communication:** *Programmes develop each graduate to be a persuasive communicator and negotiator.* Students will be able to use a range of communications strategies to reach agreement with others about appropriate responses to complex and unfamiliar problems within one or more fields of business practice. |
| **Business Analysis & Problem Solving:** *Programmes develop each graduate to be a capable business analyst & strategic problem-solver.* Students will be able to apply a range of quantitative & qualitative research skills to identify & diagnose complex, unfamiliar problems & to use the evidence & findings generated to formulate strategically appropriate solutions within one or more fields of business practice. |
| **Critical Thinking:** *Programmes develop each graduate to be an autonomous & constructive critical thinker.* Students will be able to question, assess & respond independently & creatively to assumptions, propositions & debates within one or more fields of business practice. |
| **Teamworking:** *Programmes develop each graduate to be a capable team leader in work-related contexts.* Students will be able to influence others to work collaboratively to address complex and unfamiliar problems within one or more fields of business practice. |
| **Business Knowledge:** *Programmes develop each graduate to be a knowledgeable business practitioner.* Students will be able to demonstrate an integrated understanding of key concepts, techniques & trends in one or more fields of business practice & the challenges & opportunities involved in applying this knowledge in diverse contexts. |
| **Ethics & Social Responsibility:** *Programmes develop each graduate to be an ethically- and socially- responsible professional.* Students will be able demonstrate ethical & social awareness & responsibility in personal decision-making & behaviour within one or more fields of business practice. |

A group of staff had previously commenced work on a broader teamwork project, which encompassed an analysis of team-working guides, rubrics and current approaches to peer assessment, including the allocation of marks to student members in the team. Therefore, teamwork was not prioritised within this new rubrics initiative. Furthermore, it was felt that the Discipline/Business Knowledge outcomes would have to be discussed and developed under our new discipline structures and that this would be more of a medium-term project. However, there was broad agreement that rubrics could be created for a range of PLOs that would benefit every programme in the College.

A call went out to staff across the Schools in the College inviting participation in a series of working teams for developing college-wide rubrics in a number of identified areas:

Reflective Practice, Critical Thinking, Presentation Skills, Consultancy Projects (shown in Figure 3).

Seeking out collaborators was a key feature of this work; collaboration promotes engagement and teamwork in the workplace across Schools which can lead to increased faculty productivity. Logan *et al.* (2011) argue that natural teams can be formed among persons of like interests, passion, and common goals. Members encourage and motivate each other; relationships involve high levels of engagement, innovation, creativity, and pursuit of a greater good. This is key to collaboration. Staff self-elected to work together and we agreed a lead for each working team. However, no matter who took the lead, the work was always circulated to the others multiple times for input.

Figure 3. Shared rubrics developed across business disciplines
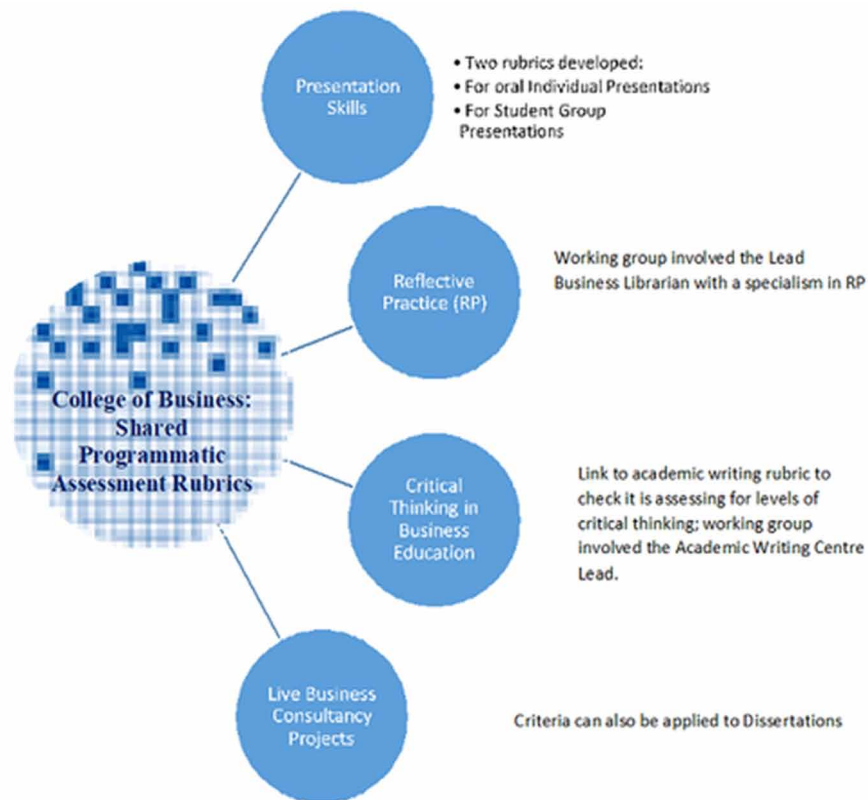
These rubric teams were formed and invited to a rubrics kick-starter session where the process for rubric development was discussed and agreed. A rubric resource pack to support the process was made available on the TLA Portal for staff. Over a number of weeks, the rubric teams were advised to meet to explore the repository of rubric examples made available to them in each of the identified areas, and to discuss issues arising in relation to the development of a common rubric for UG programmes across the College. At this initial kick-starter session, it was discussed and agreed what our purpose was for using common college-wide rubrics: that we needed a consistent approach to feedback (based on student feedback, external examiner reports and AACSB alignment) in order to make learning and assessment expectations explicit for students and to foster Feedback Literacy. Price *et al.* (2012) suggest that feedback can only be effective if the learner understands the feedback and is willing to act on it.

A collaborative activity in this session was very useful with each of the rubric working teams to build a shared understanding of the task among the team. As such, each team was asked to consider the definitions of their rubric areas and agree the purpose of their common rubric for both students and staff, and before, during and after the assessment process. Figure 4 shows the activity for the Critical Thinking (CT) rubric team.

Figure 4. Critical thinking activity underpinning the work of the CT rubric team

A rubric review session was then held bringing all the teams back together, with each team invited to share both their working process to date and their draft rubric. To support the process, we developed a simple resource-sharing rubric repository in the TLA Portal in the VLE (Figure 5). Resources, including rubric exemplars related to the topics were shared within this repository and colleagues were asked to supplement the repository with any useful resources that they discovered. We actively sought input from each other's professional domain.

Ultimately an eResource was developed to be used alongside each common rubric to support staff in having valuable conversations with students about their progress across programmes, and was made available from the Portal also. The eResource formed part of an 'ideas bank' of how best to use the rubrics e.g. to have students self-evaluate a presentation or evaluate one from their peers. This 'opens the

door' to critical thinking and construction of meaning and quality by students that is important at UG and PG levels. Participants in the working teams role was as a peer reviewer of the eResource. Simply handing out a rubric cannot be expected to have an impact on student work (Andrade & Valtcheva, 2009); students must be taught to actively use a rubric for self and peer assessment, and revision, in order to reap the benefits (Reddy & Andrade, 2010). In the wider context of student feedback literacy, Carless & Boud (2016, 1316) argue "students respond to feedback in various ways within specific disciplines, curricula and contextual settings…and in relation to their previous experiences and their own personal characteristics".

Figure 5. TLA portal to support staff in rubric development
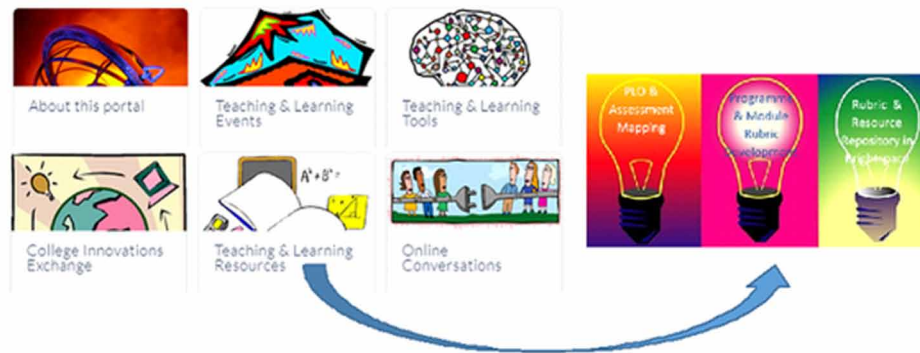
Early on, we realised the need for provision of clarity with all staff involved in the project at each stage of the project and we ensured that communications happened on a regular basis to convey the extent of the work that was taking place. As they were developed, the draft rubrics were uploaded to the Brightspace virtual learning environment in a 'College Innovation Exchange' portal, as an opportunity for all staff to provide online feedback on the draft rubrics. A second review meeting was scheduled with the rubric working teams discussing all the draft rubrics in relation to key considerations in rubric design (with input from our Learning, Teaching and Assessment team in the University). A rubrics information session was held in the Programme Chairs Forum with staff invited to show peers how to use the developed rubrics with intelligent agents in Brightspace and agreeing the nature of the accompanying resource explaining how best to use each rubric. A cross-university peer review group was set up for the rubrics, involving other Heads of Learning Development, colleagues from the central Learning and Teaching Centre, and lecturers from other disciplines with experience of rubric design – this was done as a sanity check for rubric structure and content.

To date, four of the five common rubrics have been created (Reflective Practice; Individual & Group Presentation Skills; The Consultancy Project). The Critical Thinking rubric has been developed in draft and needs to undergo peer review.

The literature emphases student learning as part of the development of rubrics (Reddy & Andrade, 2010; Huball & Burt, 2004; Olsen & Krysiak, 2021). For our context the ways in which student involvement in the process will get underway is with a plan to pilot the rubrics with students on particular programmes with the purpose of getting their feedback on identifying what quality should look like in

each of the areas, the language of the rubric (rubric literacy), and how it engages them with the feedback given. Training sessions will be put in place for the students to use the rubrics. Following this, staff will be invited to a lab session on inputting the final college rubrics to Brightspace, and get guidance on how each lecturer can best use them in their programme.

Challenges

As with any undertaking, there were challenges encountered along the way. They included finding the time to work on our rubrics, deciding when something was "good enough" for sharing with staff (even drafts!), maintaining commitment to the rubric project to ensure we kept moving forward, and deciding the performance levels in the rubric to work on next. With constrained resources, we were as Gabriel (2017) stated, asking staff to do more with less time, money, and personnel – and were aware that this can contribute to staff feeling overwhelmed. A study by Francis (2018) was useful for us as a College working together to create common rubrics to examine the link between rubrics and performance through the lens of student engagement. Findings from that study show providing a rubric does not necessarily lift student performance, whereas higher grades are evident when students engage with discussing the rubric and grades were ever higher when students engaged with the rubric discussion plus additional resources.

Rahmat (2017) outlined some challenges when designing a rubric that could empower students to self-assess their learning - addressing teachers' misconceptions and understanding about rubrics; seeking consensus in view of teacher's preferences in choosing the types of rubrics. In our work, we found that the following factors contributed to the challenges for our rubric engagement and collaborations:

Time: Look for, then protect, dedicated meeting and development time. When possible, we tried to meet for blocks of 1-2 hours.

Commitment: Even if potential collaborators have the time, they will also need to be committed to the project and committed to the other collaborators in their rubric team.

Team player: Each person must be willing (and able) to truly listen to the comments/insights of the others.

Similar values: As mentioned by Gabriel (2017), misalignment of values contributes to staff burnout. Having similar values as your fellow collaborators helps build trust among the team as you work together toward a common goal.

Peer led: By asking individual lecturers to first showcase their own rubrics or approaches to assessment, this created an engaging peer learning environment, where lecturers were hearing from peers who faced similar workload challenges and were able to provide practical examples of how the adoption of rubrics had benefitted them and their students.

At the early stage of the process, it was clear that some teams had developed more detailed rubrics than others. For example, the early stage presentation skills rubric (Figure 6) had clear grading categories but did not provide detail on what might be expected within each grading band. The team developing the Consultancy Project rubric (Figure 7), benefitted from previous work and there was possibly greater clarity of expectations. Earlier drafts included detailed descriptions within each grading band.

Figure 6. Early draft consultancy project rubric

Presentation Skills Rubric:

		Failed to meet expectations	Meets Expectations	Exceeds Expectations	Additional Comments
Content **Marks out of 30** **Weighting: 30%**	Originality (10)				
	Attention to brief (10)				
	Quality of supporting documentation (10)				
Oral Presentation (Effectiveness – informal, personal, immediate, active) **Marks out of 60** **Weighting: 60%**	Eye Contact (10)				
	Body Language (open) (10)				
	Voice (pitch, pace, pause, volume) (10)				

Figure 7. Early Draft Consultancy Project Rubric

Student Name		Form completed by:
Project Title		Please X as appropriate
Supervisor		
Second Reader		

To be completed by both Supervisor & Second readers and returned to the **Graduate Business School Office** by **(INSERT DATE)**
Ensure to select grade bracket for each section & provide comments/ feedback for each section.

	0-29% (Fail)	30-39% (Fail)	40-49% (Pass)	50-59% (2.2)	60-69% (2.1)	70-79% (First)	80%+ (First)
Explanation & justification of research topic & objectives 10%	Little or no academic rationale for topic or construction of research questions.	Failure to connect academic literature & research question &/or failure to pose proper research question	Some evidence of competence in selection & justification of topic area and research objectives.	Mostly competent selection & justification of topic and research objectives.	High competence shown in selection & justification but not always reaching high competence.	High competence in selection & justification of research objectives & topic but lacking flair.	Topic & research objectives of the quality & with the level of justification appearing in a quality academic peer-reviewed journal.
Insert X							
Comments:							

Furthermore, approaches to measuring PLOs vary amongst AACSB Schools. Sometimes measures of performance are taken within a course/module assessment and also contribute towards a course/module grade. In other cases the measure is taken at programme level (e.g. a test of general business knowledge which covers multiple modules). As such, instead of assigning a percentage grade, many AACSB Schools use three categories of Doesn't Meet Expectations/ Meets Expectations/ Exceed Expectations. As we were early in our discussions about our approach to measuring PLOs, the approach taken by the rubric working teams varied.

SOLUTIONS AND RECOMMENDATIONS

The following was agreed by the collaborative rubric teams on the Business college-level common rubrics, and were based on what they had learned through the literature they engaged with on rubric development and through the peer review process of the rubrics themselves.

Rubric Structure

- Identify around five key evaluative criteria.
- All the common rubrics will include descriptions of student performance at different levels of quality, which means that there is an inbuilt 'feed-forward' feature in all.
- Decide the scoring strategy for generating a final mark.

Rubric Language

- The need for a common language on 'Teamwork' was proposed and a decision was taken to proceed with this as a College-wide approach.
- Language in the rubric: we are using qualitative language in all the target statements.
- Avoid subjective language in favour of explicit guidance.

Rubric Use

- Rubrics can be used by programme teams formatively and summatively. Programme teams will be making decisions on 'within-module' vs 'programme level' measures of PLO attainment. While it is sometimes easier to use the 'Does not Meet/Meets/Exceeds Expectations' for certain PLOs - such as Teamwork, however, this means it would have to be scored and feedback given but it would not be part of a module grade. This entails extra workload for staff. On the flip side, some Schools have used a pre-test and post-test with questions from different course/module areas to test for knowledge of business etc, that is administered centrally (Tarnoff, 2023).
- The rubrics will encourage the students to use the feedback they receive. Co-constructing rubrics with students can effectively utilise the rubrics' potential to help students become reflective and thoughtful.
- We are avoiding designing overly complex rubrics and are focusing on the student's work providing evidence of meeting, exceeding, or falling short of the quality being looked for.
- Where multiple assessments within a programme have a similar structure or focus, using the same marking rubric is recommended.

Rubric Training

- Ensure that students have early opportunities to engage with the rubric.
- Continue to work as a team to master the rubric.

● Decide how the rubric will be used in the programme to provide feedback.

Rubric Supports

One key to the success of this initiative was how expanded, multi-disciplinary teams exploited the possibilities offered by digital technologies and collaborated to cultivate the practice of digitally-informed assessment design and development to create a high-quality learning experience for all students. We wanted to optimise our use of the VLE Brightspace - in using its rubric functionality, we would be making the move to paperless assignments and feedback. This would involve the use of purely digital rubrics embedded in the VLE and available to the students for their full learning journey. A number of colleagues had integrated some rubrics into Brightspace where they could take a paperless approach, develop the rubric quickly and also publish it so that students could access it when they logged in. Discussions were had about embedding all rubrics in Brightspace going forward so that students have a record of their learning, and performance against PLOs, so that they can be take greater ownership for their learning. As part of the suite of Rubric eResources, we proposed having a visual for each college-wide PLO alongside digital posters for promoting:

● Industry Engagement which highlights the applied nature of assignments, guest speakers, and work placement - citing numbers and linking to a new Faculty calendar.
● Preparing graduates for Career Success - highlighting graduate success stories. These should be discipline specific e.g. Accounting, Management, Marketing. They would feature high quality images of graduates with a quote and details on their new roles.
● Making a Difference - citing community work, work with charities and not-for-profits.

FUTURE RESEARCH DIRECTIONS

Following a period of organsiational design and restructuring, the Faculty have now set about conducting School and programmatic reviews, for every programme in the Faculty. This exercise presents an excellent opportunity to review the current PLOs and ensure that updated PLOs are adopted for every programme and more importantly that they are mapped across the programme and across modules so that programme teams, and students, have clarity with regard to where topics are introduced, reinforced and assessed. A final year assessment will be measured for AOL purposes with a feedback loop to ensure that programmes are continuously enhanced, in line with AACSB standards. Along with revising PLOs, part two of our rubrics project will be commenced, whereby existing rubrics will be reviewed, having been used with numerous student groups and by a broad range of lecturers. Additional PLOs will be developed in line with the new PLOs and all will be made available in a central repository to help to drive consistency in assessment and to further encourage students to take ownership of their learning journey.

During the second stage of the rubrics project, further consideration will be given to how rubrics might be utilised to assess related knowledge and skills but also to encourage authenticity, collaboration and peer assessment in an era of continuous and unabated technological advancement. Given the recent advances in Artificial Intelligence (AI), a number of workshops have been held with staff and UG and PG students to discuss how best to address concerns on ChatGPT and to leverage the benefits of these new technologies. Our study can be continued by exploring the pros and cons of leveraging such tools

to create rubrics as well as look at how rubrics might be used to mitigate against the use of AI in assessment - in particular, with the help of growth-oriented and skill-based rubrics, as argued by Lee (2023), peer assessment can encourage students to turn in original and self-crafted work rather than depending on AI to complete assignments.

CONCLUSION

As Technological University Dublin has recently entered into a new Faculty, School and Discipline structure, this initiative seeks to create a new way of collaborative working between cross-Faculty, multi-disciplinary teams. At its centre, it explores how to engage staff and students in the assessment change process utilising shared modules and rubrics. Underpinning our work is a social constructivist approach, where the use of rubrics are increasing learner activeness, curiosity, and engagement, all while reducing the workload of a lecturer, and co-designed and developed in a collaborative way. Through our upcoming programmatic reviews, the use of rubrics will allow students to engage better with deeper application of module concepts and meaningful demonstration of learning outcomes. Two major issues that programme teams have been facing since the return to in-person classes post-pandemic will guide the direction of our future work with collaborative college-wide rubrics. Firstly, student engagement - we are looking at ways to consider using rubrics as a vehicle for student engagement as a meaningful snapshot of student progress is more needed than ever. Secondly, over assessment - through the upcoming College-wide Programmatic Reviews, an opportunity exists to cut back on quantity of assessment across a programme, and use rubrics to steer this. We hope that this chapter will be a useful guide for those in a similar situations in higher education institutions in developing common rubrics with their cross-disciplinary programme teams.

REFERENCES

AACSB. (2019). Accreditation Standard 8 (2013 Business Standards): Curricula Management and Assurance of Learning An Interpretation, AACSB. https://www.aacsb.edu/insights/briefings/standard-8-white-paper

AACSB. (2020). 2020 Guiding Principles and Standards For Business Accreditation. https://www.aacsb.edu/educators/accreditation/business-accreditation/aacsb-business-accreditation-standards

Allen, S., & Knight, J. (2009). A Method for Collaboratively Developing and Validating a Rubric. *International Journal for the Scholarship of Teaching and Learning*, *3*(2), 3. doi:10.20429/ijsotl.2009.030210

Andrade, H., & Valtcheva, A. (2009). Promoting Learning and Achievement Through Self-Assessment. *Theory into Practice*, *48*(1), 12–19. doi:10.1080/00405840802577544

Andrade, H. G. (2005). Teaching with Rubrics: The Good, the Bad, and the Ugly. *College Teaching*, *53*(1), 27–30. doi:10.3200/CTCH.53.1.27-31

Brookhart, S. M. (2018). Appropriate criteria: Key to effective rubrics. *Frontiers in Education*, *3*, 22. doi:10.3389/feduc.2018.00022

Carless, D., & Boud, D. (2018). The development of student feedback literacy: Enabling uptake of feedback. *Assessment & Evaluation in Higher Education*, *43*(8), 1315–1325. doi:10.1080/02602938.2 018.1463354

Cuban, L. (1993). The lure of curriculum reform and its pitiful history. *Phi Delta Kappan*, *75*(2), 181–185.

Dawson, P. (2017). Assessment rubrics: Towards clearer and more replicable design, research and practice. *Assessment & Evaluation in Higher Education*, *42*(3), 347–360. doi:10.1080/02602938.2015.1111294

English, F. (1978). *Quality control in curriculum development*. American Association of School Administrators.

Francis, J. E. (2018). Linking Rubrics and Academic Performance: An Engagement Theory Perspective. *Journal of University Teaching & Learning Practice*, *15*(1), 5–22. https://ro.uow.edu.au/jutlp/vol15/iss1/3. doi:10.53761/1.15.1.3

Gabriel, S. (October, 2017). Moving from Silos and Burnout to Community and Engagement. *Faculty Focus.* Higher Ed Teaching Strategies from Magna Publications.

Garrett, N., Marques, J., & Dhiman, S. (2012). Assessment of business programs: A review of two models. *Business Education & Accreditation*, *4*(2), 17–25.

Gibbs, G., & Dunbar-Goddet, H. (2009). Characterising programme-level assessment environments that support learning. *Assessment & Evaluation in Higher Education*, *34*(4), 481–489. doi:10.1080/02602930802071114

Gibbs, G., Rust, C., Jenkins, A., & Jacques, D. (1994). *Developing students' transferable skills*. The Oxford Centre for Staff Development.

Hale, J. A. (2008). *A guide to curriculum mapping*. Corwin Press.

Harland, T., & Wald, N. (2021). The assessment arms race and the evolution of a university's assessment practices. *Assessment & Evaluation in Higher Education*, *46*(1), 105–117. doi:10.1080/0260293 8.2020.1745753

Honeychurch, S. (2015). *Rubrics as a guide to student writing and staff grading*. Chartered Association of Business Schools.

Huball, H., & Burt, H. (2004). An Integrated Approach to Developing and Implementing Learning Centred Curricula. *The International Journal for Academic Development*, *9*(1), 51–65. doi:10.1080/1360144042000296053

Jacobs, H. (1997). *Mapping the big picture: Integrating curriculum and assessment K-12*. Association for Supervision and Curriculum Development.

Jessop, T., Hakim, Y., & Gibbs, G. (2014). The whole is greater than the sum of its parts: A large-scale study of students' learning in response to different programme assessment patterns. *Assessment & Evaluation in Higher Education*, *39*(1), 39. doi:10.1080/02602938.2013.792108

Jessop, T., & Tomas, C. (2016). The implications of programme assessment patterns for student learning. *Assessment & Evaluation in Higher Education*.

Jones, L., Allen, B., Dunn, P., & Brooker, L. (2017). Demystifying the rubric: A five-step pedagogy to improve student understanding and utilisation of marking criteria. *Higher Education Research & Development*, *36*(1), 129–142. doi:10.1080/07294360.2016.1177000

Jonsson, A., & Panadero, E. (2017). The Use and Design of Rubrics to Support AfL. In D. Carless, S. Bridges, C. Chan, & R. Glofcheski (Eds.), *Scaling Up Assessment for Learning in Higher Education* (pp. 99–111). Springer. doi:10.1007/978-981-10-3045-1_7

Joyner, H. S. (2016). Curriculum mapping: A method to assess and refine undergraduate degree programs. *Journal of Food Science Education*, *15*(3), 83–100. doi:10.1111/1541-4329.12086

Jutras, D. (2023). *Scales, stars and numbers: the question of evaluation*. Times Higher Education.

Lee, J. (2023). *Effective assessment practices for a ChatGPT-enabled world*. Times Higher Education.

Logan, D., King, J., & Fischer-Wright, H. (2011). *Tribal Leadership: Leveraging Natural Groups to Build a Thriving Organization*. Harper Business.

Morton, J. K., Northcote, M., Kilgour, P., & Jackson, W. A. (2021). Sharing the construction of assessment rubrics with students: A Model for collaborative rubric construction. *Journal of University Teaching & Learning Practice*, *18*(4). Advance online publication. doi:10.53761/1.18.4.9

Okojie, M. U., Bastas, M., & Fatma Miralay, F. (2022). Using Curriculum Mapping as a Tool to Match Student Learning Outcomes and Social Studies Curricula. *Frontiers in Psychology*, *13*, 850264. Advance online publication. doi:10.3389/fpsyg.2022.850264 PMID:36059751

Olson, J., & Krysiak, R. (2021). Rubrics as Tools for Effective Assessment of Student Learning and Program Quality. Curriculum Development and Online Instruction for the 21st Century (pp.173-200).

Panadero, E., & Jonsson, A. (2013). The use of scoring rubrics for formative assessment purposes revisited: A review. *Educational Research Review*, *9*, 129–144. doi:10.1016/j.edurev.2013.01.002

Panadero, E., & Jonsson, A. (2020). A critical review of the arguments against the use of rubrics. *Educational Research Review*, *30*, 30. doi:10.1016/j.edurev.2020.100329

Ragupathi, K., & Lee, A. (2020). Beyond Fairness and Consistency in Grading: The Role of Rubrics in Higher Education. In C. Sanger & N. Gleason (Eds.), *Diversity and Inclusion in Global Higher Education*. Palgrave Macmillan., doi:10.1007/978-981-15-1628-3_3

Rahmat, R. (2017). *An Approach to Overcome the Challenges of Using Rubrics to Improve Student's Understanding of Success Criteria*. World Association of Lesson Studies.

Reddy, Y. M., & Andrade, H. (2010). A review of rubric use in higher education. *Assessment & Evaluation in Higher Education*, *35*(4), 435–448. doi:10.1080/02602930902862859

Robley, W., Whittle, S., & Murdoch-Eaton, D. (2005a). Mapping generic skills curricula: A recommended methodology. *Journal of Further and Higher Education*, *29*(3), 221–231. doi:10.1080/03098770500166801

Robley, W., Whittle, S., & Murdoch-Eaton, D. (2005b). Mapping generic skills curricula: Outcomes and discussion. *Journal of Further and Higher Education*, *29*(4), 321–330. doi:10.1080/03098770500353342

Sadler, D. R. (2009). *Transforming holistic assessment and grading into a vehicle for complex learning.* Springer. doi:10.1007/978-1-4020-8905-3_4

Spencer, D., Riddle, M., & Knewstubb, B. (2012). Curriculum mapping to embed graduate capabilities. *Higher Education Research & Development*, *31*(2), 217–231. doi:10.1080/07294360.2011.554387

Stassen, M. L. A., Doherty, K., & Poe, M. (2011). *Course-based review and assessment: methods for understanding student learning.* Robert Langhorst & Company Booksellers.

Sumsion, J., & Goodfellow, J. (2004). Identifying generic skills through curriculum mapping: A critical evaluation. *Higher Education Research & Development*, *23*(3), 329–346. doi:10.1080/0729436042000235436

Tarnoff, K. (2023). How to Make Sure an AoL System Is Working. https://www.aacsb.edu/insights/articles/2023/06/how-to-make-sure-an-aol-system-is-working

APPENDIX: CONSULTANCY PROJECT RUBRIC

Table 4. Postgraduate Consultancy/ Applied Project Evaluation Form

Student Name		Form completed by: Please X as appropriate
Project Title		
Supervisor		
Second Reader		

To be completed by both Supervisor & Second readers and returned to the relevant School Office
Ensure to select grade bracket for each section & provide comments/ feedback for each section.

	0-29% (Fail)	30-39% (Fail)	40-49% (Pass)	50-59% (2.2)	60-69% (2.1)	70-79% (First)	80%+ (First)
Explanation & justification of Problem & Context 20%	Poor explanation of problem. Little or no rationale for problem. Limited explanation of context.	Problem is explained but rationale is poor, failure to adequately connect problem to context.	Some evidence of competence in selection & justification of problem to be addressed within appropriate context.	Mostly competent selection & justification of problem to be addressed within appropriate context.	High competence shown in selection & justification of problem to be addressed within appropriate context but not always high competence.	High competence shown in selection & justification of problem to be addressed within appropriate context but lacking flair.	Problem is explained and justified to a very high standard (to the standard appearing in quality industry report/ article), problem is embedded within context.
Insert X							
Comments:							
Literature Review 20%	Little evidence of reading or understanding alternative viewpoints.	Limited awareness of literature. Little independent understanding.	Evidence of understanding of literature, little critical analysis.	Mostly critical & adequate coverage of literature but significant lack of coverage or interpretation in some areas.	Overall a comprehensive critical analysis of literature but some over-simplification or limited interpretation.	Excellent use of appropriate literature in terms of identifying, evaluating & critically analyzing relevant theories, ideas & frameworks	Excellent & creative use of appropriate literature identifying, evaluating & critically analyzing relevant theories, ideas & frameworks.
Insert X							
Comments:							

	0-29% (Fail)	30-39% (Fail)	40-49% (Pass)	50-59% (2.2)	60-69% (2.1)	70-79% (First)	80%+ (First)
Research Methodology 15%	Poor explanation and lack of justification of method.	Weak explanation and justification of method.	Some evidence of explanation and justification of method but inadequate.	Mostly adequate explanation and justification of method & process, but some significant flaws.	Adequate explanation and justification of method & process, with few lapses.	Concise explanation and justification of method & process, linked to problem.	Insightful and creative explanation and justification of method & process, strongly linked to problem.
Insert X							
Comments:							
Analysis of Findings 20%	Little or no analysis of primary research.	Fails to demonstrate adequate competence in analysis.	Shows some competence of analysis in some areas	Shows clear competence of analysis but fails to adequately link to context and theory	Competent analysis of primary research within context and theory but lacks greater reflection & sophistication	Critical & insightful interpretation of primary research within context and theory	Insightful & creative interpretation & presentation. Rigorous links of evidence, within context and theory
Insert X							
Comments:							
Recommendations 25%	Few or no recommendations made.	Shows need to make findings relevant to appropriate audiences. Weak recommendations	Logical recommendations made, failure to adequately reflect on context & theoretical framework.	Concise recommendations made, somewhat reflective of context and theoretical framework.	Concise recommendations made, largely reflective of context and theoretical framework.	Largely compelling recommendations made. Demonstrates critical thinking and reflection.	Clear, detailed, evidence based recommendations made. Demonstrates critical thinking and reflection.
Insert X							

Continued on following page

Table Continued

Comments:
Additional Comments (if applicable):

Awarded Mark: Third Reader (if required):

Supervisor	
Second Reader	
Agreed	
Date	
Mark	
Date	

In addition to the sections detailed above, also consider the following when determining an overall mark for the project:

Structure and flow of project, connectivity of chapters.

Presentation of report.

Referencing.