Exploring business students' perceptions of authentic project-based and work-integrated assessments

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This study draws on the perceptions of students who have completed authentic project-based and work-integrated assessments and explores their perception of authenticity of the assessments in terms of real work projects. In response to industry and government expectations for work-ready graduates three authentic assessments, were developed in collaboration with industry partners, covering different business program subjects. Drawing on the literature, a three-dimensional framework for authentic assessment in workplace learning was developed. These dimensions — realism, producing an authentic product, and workplace-based judgment criteria — formed the basis for thematic analysis of students' perceptions. A case study approach was used with three authentic assessment cases. Qualitative data was gathered via focus groups and surveys guided by the three-dimensional framework. Findings suggest that factors such as social environments created by engaging with industry, realistic tasks that replicated industry activities, and working in teams contributed to the perception of an authentic project-based and work-integrated assessment.

Keywords: Project-based learning, student experiences, business teaching, authentic assessment

The expectations of both industry and government to enhance student employability and provide work-ready graduates have increased the demand for work-integrated learning (WIL) courses or activities within the higher education sector. Many business educators have risen to the challenge and turned to the real world and authentic contexts, offering internships, placements, and other WIL activities (Jackson & Meek, 2021; Mourshed et al., 2012). Project-based learning, in particular, is regarded as a WIL activity that enhances employability skill development (Cranmer, 2006; Jackson & Meek, 2021; Mourshed et al., 2012) and prepares students for the requirements of an internship in the future.

This study compares the perceptions of business school students who participated in one of three different project-based and work-integrated assessments, namely: Operations Management, Marketing Management and Project Management. These assessments differed from one another in terms of varying degrees of industry involvement. Operations Management and Marketing Management students worked in teams on a distinct business project with industry partners whilst the Project Management students worked as project administrators each with a group of students from other subject classes. These groups of students from other subject classes were the clients of the project administrators. The students' perceptions of each of the assessments were evaluated using a literature-based framework (Table 2) that included these criteria: process realism, output authenticity, and judgement of workplace-relevant criteria.

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Authentic Assessment

According to Villarroel et al. (2018), an authentic assessment replicates tasks and performances typically faced by professionals in the actual workplace and is formally assessed (Gore et al., 2004). Authentic assessment can take place as part of an internship or placement and other work-based experiences. According to Sokhanvar et al., (2021) authentic assessment has a number of potential advantages such as improving the quality and depth of learning, developing autonomy, commitment, and motivation for learning, encouraging meta-cognition and self-reflection, and enhancing employability. Further claimed advantages are that authentic assessment can ensure construct and consequential validity (Gulikers et al., 2004). Construct validity is whether an assessment measures what it intends to measure. Therefore, an authentic assessment that immerses students in real-world tasks offers a more accurate measure of their abilities than traditional assessment based on hypothetical or arbitrary scenarios. Consequential validity is the intended and unintended effects of the assessment (Biggs, 1996). For example, examinations may have unintended negative consequences such as teaching and learning to the test. Whereas authentic assessment should lead to the development of real-life skills. Furthermore, authentic assessment can help students to imagine themselves as actual employees and provides opportunities to prepare for the workplace and its potential complications (Sotiriadou et al., 2020). In their systematic literature review, Sokhanvar et al. (2021) found further advantages of authentic assessment, including improving the learning experience of higher education students by enhancing their engagement and satisfaction. They also found that authentic assessment equips students with essential skills such as communication, collaboration, critical thinking, problem-solving, self-awareness, and self-confidence.

However, authenticity is subjective – what students consider as an authentic assessment may differ from what lecturers consider authentic. For example, Ajjawi et al. (2020) found that students experienced misalignments of workplace-based assessments that led to "inauthentic experiences of assessment" (p. 312). In addition, while frameworks for authentic assessment recommend self-reflection (e.g., Tai et al., 2018), participants in Ajjawi et al. (2020) were critical of the emphasis on producing academic reports to evidence reflection, claiming this does not happen in the real world. A further issue raised by Nisbet et al. (2022) is the disparity between students and workplace supervisors on evaluations of students' competencies, which raises issues concerning the reliability of assessors' judgements of authentic assessment outcomes in workplace settings where there are multiple assessors. Of concern to Nisbet et al. (2022) were the consistently lower ratings for international students by workplace assessors, which the authors attributed to the deficit perceptions of these students.

Determining the criteria for authentic assessment can be complex. In their systematic literature review of authentic assessment, Villarroel et al. (2018) concluded only three of the reviewed articles had an authentic assessment model that involved practical conditions or principles to follow. These were: Gulikers et al. (2004), who proposed that authentic assessment has five practical requirements; Ashford-Rowe et al. (2014) who identified eight relevant aspects; and Yorke (2006) who described four interrelated components of employability: understanding, skills, efficacy beliefs, and metacognition. On reading these three works it was decided that Yorke's work did not address assessment specifically, so the frameworks of Gulikers et al., Ashford-Rowe et al. and Villarroel et al. were chosen to examine key dimensions of authentic assessment. From their systematic literature review, Villarroel et al. (2018) highlighted 13 characteristics grouped into three dimensions. Table 1 summarizes the dimensions of each of these three frameworks.

TABLE 1: Summary of frameworks defining authentic assessment.

Author	Framework
Gulikers et al.'s (2004) five dimensions.	1. Tasks that would be carried out in professional practice. 2. The physical context: reflects the actual environment. 3. The social context: resembles work conditions. 4. The assessment result: an actual product or performance 5. Assessment criteria: real-life criteria.
Ashford-Rowe et al.'s (2014) eight elements of authentic assessment.	1. Challenging: Tasks mirror a full array of priorities and challenges. 2. Outcome: an actual product. 3. Transfer of knowledge: assessment should align with knowledge and skills. 4. Metacognition: include critical reflection and self-evaluation. 5. Accuracy: this is also referred to as reliability and validity of an assessment – it should measure what it intends to measure 6. Environment: an actual or replica environment 7. Feedback: opportunity to receive and discuss feedback 8. Collaboration: opportunities to collaborate integral.
Villarroel et al.'s (2018) dimensions of authentic assessment.	1. Realism: similar tasks to the working world 2. Cognitive challenge: higher order thinking, solve problems, make decisions. 3. Evaluative judgement: feedback is formative and based on known criteria.

Similarities and differences exist among the frameworks, for example, Ashford-Rowe et al. (2014) include collaboration, however Gulikers et al. (2004) argue that collaboration should only be a requirement for authentic assessment when the real work situation demands collaboration and social interaction. A further element that is missing from Gulikers et al. is the opportunity for formative feedback, but Ashford-Rowe et al. and Villarroel et al. include this criterion. A further difference is that Ashford-Rowe et al. call for accuracy which is elaborated as validity and reliability: however, accuracy is not exclusive to authentic assessment as all assessments should be valid and reliable (Newton & Shaw, 2014).

To create a framework on which to evaluate students' perceptions of the authenticity of the assessment associated with the WIL activities, commonalities from the frameworks of Ashford-Rowe et al. (2014), Gulikers et al. (2004) and Villarroel et al. (2018) were used. All three frameworks emphasize the importance of realism, which is that assessment tasks need to be carried out in a professional and authentic manner reflecting actual work-related tasks. Secondly, the frameworks agree that the assessment should produce an authentic output, for example, a product, performance, or presentation. A third overarching commonality is that the judgement of the assessment should be based on real-life criteria that would exist in a workplace and that the judgement should include self-reflection and formative feedback (Ashford-Rowe et al., 2014; Villarroel et al., 2018). These commonalities of authentic assessment were used to develop a theoretical framework (Table 2) to guide this research.

TABLE 2: A three-dimensional framework for authentic assessment.

Dimension	Attributes
Realism	The task is challenging and requires solving problems contextualized to everyday working life, including higher-order thinking skills.
	The environment in which the task is completed should be authentic as possible in terms of the physical and social environment.
Output	The output should be an authentic product or performance.
Judgement	Based on real-life situation criteria that are known to students.
	Includes self-reflection.
	Includes formative feedback.

Sotiriadou et al. (2020) reported that authentic assessment has been examined in various disciplines, for example, law, nursing, social work, and education, but little has been reported in business disciplines. According to Sotiriadou et al. (2020), authentic assessment that has been researched and reported in business disciplines has focused on preventing academic misconduct rather than using authentic assessment to measure performance skills. They provided evidence for authentic assessment outside of work placement and in the field of business education but concluded that further research is needed that includes group or cross-disciplinary scenarios, and comparisons with other business disciplines. Ajjawi et al. (2020) considered that authentic assessment has been "researched from the teachers' perspective, less is understood about students' experiences of alignment during WIL placement and how these contribute to authentic learning from assessment" (p. 307).

This exploratory project followed the call from Sotiriadou et al. (2020) and Ajjawi et al. (2020) for further research on authentic assessment in business disciplines, particularly with a focus on students' experiences. It explored the perceptions of business school students from Operations, Marketing, and Project Management who undertook business projects as their primary form of assessment. Research questions for the study are:

1. How do students perceive the project-based authentic assessments?
2. What factors contribute to students' perceptions of authentic assessments?

METHODS

A qualitative case-study approach (Braun & Clarke, 2006; Mills et al., 2010) was used to gather evidence to address the research questions. The research presents three cases based on three project-based, authentic assessments. All three assessments replicated real-world tasks and were based on subjects taught in the second year of the Bachelor of Business offered by the Unitec Institute of Technology in New Zealand. To ensure a relatively consistent student experience across the cases, second-year students were chosen who shared a similar academic and assessment background. The unit of analysis as described by Yin (2003) is the assessment. Data was collected at the end of each semester between 2018-2020. Students studying these subjects were invited to either complete a qualitative survey or volunteer for focus groups after the completion of the subject. In total, 21 students completed the survey, while 55 students participated in nine one-hour focus groups. Each focus group comprised of 5-8 students. Two focus groups were conducted that focused on the Operations Management assessment and another two concentrated on the Marketing Management assessment. For the Project Management assessment, two focus groups were organized with the students who carried out the role of project administrators, and an additional three focus groups were conducted with students from the

other subject classes (clients), who received the project plan and progress reviews. All focus group sessions were audio recorded and transcribed.

The qualitative survey and focus groups included similar questions drawn from variables featured in the theoretical framework. Questions covered aspects such as project tasks, peer feedback, project output, lecturer and industry feedback, self-reflection. Discussion about similarities between assessment tasks and workplace tasks, mismatches between assessment and workplace expectations, and ideas for improving the assessment to better align with workplace expectations were also included.

To facilitate the organization and analysis of the data, a coding system was employed. Table 3 illustrates the coding process with sample data. The focus group data for Operations Management was coded as "OPF1" and "OPF2," while the data for Marketing Management was coded as "MF1" and "MF2." For the Project Management assessment, the coding system included "PMF1," "PMF2," (for assessed students) "PMF3," "PMF4," and "PMF5" (for students from other classes who received project plan and process reviews). Survey data was coded as S1-S22. All data in this research was recorded and classified in an electronic database maintained throughout the research process, as recommended by Yin (2003). The theoretical framework guided data analysis, and NVivo facilitated the process of organizing the data. The coding was performed independently by two researchers and checked by the third researcher.

To establish external validity detailed descriptions of the three cases are provided to enable comparison of the findings to similar situations (Miles & Huberman, 1984). Moreover, to ensure reliability, assessment descriptions and documents, including reflective comments within the assessments, and feedback were analyzed, to ascertain how the process and feedback shaped student learning. This variety of data sources was designed to enable the triangulation of data (Yin, 2003).

Ethical approval was gained from the Unitec Human Research Ethics Committee (No: 2018-1037). All participants were volunteers and were assured anonymity and provided with information outlining the study's details and their contributions. Signed consent was obtained from all participants.

TABLE 3: Sample data and associated coding.

Theme	Sub-theme	Code	Sample Quotes	Case
Realism	Authentic Environment	Physical environment authenticity	You actually have to walk to the place.... FOP1	Operations
		Social environment authenticity	We used a real company, had a briefing, had to do research, and had a budget that we had to stick with. To me, this felt very legitimate. S13	Marketing
				Operations
			like meeting the people, we don't know, by communicating with them about the project … That was similar to working in the real world. PMF1	Project Mgmt.
	Task Context	Authenticity in Task Context	Our project was based around inventory control and the practice of cycle counting... The entire project, I felt, was very similar to the workplace. S14	Operations
		Higher-order thinking skills	Finding the root cause and providing solutions using theories and tools is expected in the actual work environment. S15	Operations
			I believe the entire assignment is relevant to being a competent professional. Tasks such as doing market research, segmentation, targeting, target viability, sales forecasting, budgeting and marketing control practices are all relevant to the workplace. S14	Marketing
			The project required us to adapt and solve problems using our own judgment and more sophisticated thinking skills, similar to what is expected in a professional work environment. MPF1	Project Mgmt.
	Barriers to realism	Lack of access to extensive information / Time constraints	In the real world… we would have had full access to all the information we would have needed. S16	Marketing
		Expectations of the role	In the real world… the project managers need to understand it better because otherwise, they can't lead a project. PMF5 The team wasn't responding … … in real work, … there are consequences. PMF2	Project Mgmt.
Output	Authentic Output	Authentic product	The project report was done in a very comprehensive format and required clearly stated problem identification. S4.	Marketing
			The final presentation conducted at the client's premises was carefully prepared with a lot of trial and error. FOP1	Operations
			…those weekly status reports were quite helpful…PMF4	Project Mgmt.

	Realism and output	Keeping track of progress	The project consultant regularly communicated with us, provided updates, and shared weekly status reports. PMF3	Project Mgmt.
	Contributing to other teams	Offering a different perspective	The project consultant's weekly status reports offered a fresh perspective on our progress. By acting as a third party, he brought new insights and highlighted aspects that we might have overlooked, contributing to a more well-rounded approach. PMF5	Project Mgmt.
Judgement	Formative Feedback	Project-related and technical Feedback	... After each presentation, we would get feedback from our peers, as well as our lecturer. The team also had a face-to-face discussion with the client... During this discussion, the team gathered useful feedback. FOP2	Operations
		Feedback on professional behavior	The feedback provided on our professional behavior, including punctuality, communication, and group dynamics, was highly appreciated and contributed to our development of workplace skills. PMF1	Project Mgmt.
			The peer evaluation in the mid of the project made me aware of the changes that I needed to make in myself to be more successful in the project. S13	Operations
			Positive feedback has helped me to understand my strong factors and how to make them even more dominating, Negative feedback has helped me to understand my weak points and I understood where I need to work on. S8	Marketing
	Metacognition	Self-reflection	We also had to write a reflective journal, which has helped me to self-reflect and keep myself from getting complacent. S4	Operations
	Real-life Situation Criteria	Evaluation Known criteria to students	The final presentation was expected to have minimal technical terms and jargon, each point in bullet points, with the use of graphical representation whenever possible, attractiveness and creativity…question and answer session as well. S14	Operations
			Having the business owner in the room was very authentic … It made me feel that I had to put more work in - my pride was in play a bit more than it would if it was an assignment without that aspect. S17	Marketing

FINDINGS

The findings are presented in three sections, each describing a case assessment. Reports of individual cases reflect the theoretical framework and are clustered around three themes of authentic assessment derived from the literature: realism, output and judgement.

Case 1: Operations Management Assessment

The assessment was part of a subject offered to second-year students majoring in Operations Management. It was also offered as an elective subject for students majoring in other specializations. The applied project was one of three assessments in this subject and worth 40% overall. A learning outcome of this subject was to "Work effectively as part of an operations management team"; hence the assessment was a group project. Another learning outcome was to "Identify and apply appropriate analytical models to optimize the productivity, growth, effectiveness, and environmental sustainability of business processes." Students worked with an industry partner as an external consultant to solve an operations-related problem or improve an existing process. An industry person introduced the company and discussed a challenge for the company with students. The students then visited the business premises, where they observed operations and asked questions. Throughout the semester, they focused on addressing the specified problem and interacting with industry both on and off-site regularly seeking information and making observations. The lecturer facilitated the engagement with industry. Students conducted further desk research and were encouraged to apply theoretical concepts to address the problem if possible. Finally, at the end of the semester, they presented their findings and recommendations to industry partners and their teams. They were then required to incorporate feedback and complete and submit a technical report outlining their findings and recommendations.

Using the three-dimensional framework for authentic assessment, each dimension through student perceptions is presented as follows.

Realism

The workplace environment was exciting and unique for students. They appreciated that instead of reading an abstract concept in an article they had the opportunity to physically immerse themselves and bring their learning to life. "As a team, we had to go there… visits made it true. You actually have to walk to the place… not something that you get through articles" (FOP1). Moreover, the engagement with people and systems was acknowledged and appreciated by students; "You meet people; you talk to the actual store manager; you look at the real system being used" (FOP2). Unlike traditional assessments where students are expected to follow predefined processes, in this project, students must solve the problem selecting a suitable a decision model from models provided in the operations management subject. This process required a deep understanding of decision models to choose the most appropriate one. Students perceived the level of autonomy and the problem-solving nature of the assessment as similar to a workplace experience. Interestingly students demonstrated a very positive attitude towards disruptions and difficulties, considering them to be simulations of real-world situations. "This is similar to workplace situations since unexpected incidents will occur which might disrupt the projects or daily operations, and we will have to accept them and work around them to achieve the desired outcomes" (S14).

The positive attitude towards challenges of solving workplace problems was also extended to working with classmates and industry partners. Students acknowledged that navigating difficult individuals or those who may not contribute equally is a common aspect of the workplace. They recognized the need

to adapt and find ways to collaborate effectively. "We experienced behaviours that were also very similar to what we might expect in a workplace, with some of our contacts being less cooperative than others" (FOP2).

Other types of challenges were also well-received by students. Time constraints and difficulties in obtaining information were considered an opportunity to prepare for the real world. This was reflected by students who were already working and those that joined the workforce shortly after completing the subject. "Working to tight deadlines, chasing information, and juggling tasks really prepared me for what I am doing now" (FOP2). Interestingly, some technical concepts, such as numerical questions and creating spreadsheets, or the practices used in traditional assessments, such as presentations, were appreciated and considered real-world experiences when integrated into an authentic assessment. Students recognized the practical relevance of skills, as they are widely utilized in various workplaces. A student highlighted this sentiment, stating "Use of excel to analyze data regarding the inventory data was useful since excel is widely used in many workplaces" (S3).

Output

Students were expected to conduct an oral presentation for industry and university staff highlighting the project findings. Based on the feedback, students prepared a report that was sent to the industry partners. The project output served not only as a valuable contribution to industry partners, who provided invaluable support throughout the project, but also as a significant learning experience for the students. It reinforced the concept of actively engaging in practical, real-world tasks, akin to the dynamics of a professional workplace. "This is very similar to a workplace where managers identify solutions for any issues and forward it to the senior management for execution" (S3). While these outputs (oral presentations and reports) are commonly employed in traditional assessments, when conducted in collaboration with industry partners, students can more clearly discern their relevance. They envision themselves in their future roles and start reflecting on how they are preparing for those roles.

> In a way, that experience has helped me feel a bit more comfortable speaking publicly. As an operations manager, I am required to address my team on a weekly basis. This is something that I do with a lot more ease now. (FOP1)

It also helped students reflect on important employability skills such as public speaking, as they were developing while working on these projects.

Judgement

Students received formative feedback from their peers, the lecturer, and industry partners throughout the project. They acknowledged that this formative feedback helped them navigate their projects and develop transferable skills. "The feedback on presentations in class developed the presentation skills and confidence" (S5). Qualitative and quantitative feedback from peers was gathered to assess group work attributes such as teamwork, contribution, and collaboration. A structured peer evaluation was utilized to calculate individual scores, serving as a formative assessment during the project and a summative assessment upon completion. The primary objectives of this exercise was to ensure fairness and prevent free riding, while also teaching the essential elements of effective teamwork. By engaging students in thoughtful contemplation of the peer feedback criteria, a deeper understanding of the prerequisites for successful teamwork was fostered. Some students took advantage of the peer evaluation process to focus on self-improvement as stated by this student "I changed my behavior and became firmer in decision making" (S3).

Case 2: Marketing Management Assessment

Marketing Management is a subject offered to second-year students majoring in Marketing. One of the learning outcomes of this subject requires students to investigate and develop a marketing plan for an organisation. To meet this learning outcome, an authentic assessment was designed in which teams of students create a marketing plan for an outside organisation.

Similarly, to case one, the lecturer initially facilitates engagement with the client and the project initiates with a client presentation to the class. The presentation includes an overview of the organisation and a specific, real marketing issue or problem that requires a marketing plan. Students then conduct research and gather the information required to better understand the business and its customers. Towards the end of the assessment period, students present their marketing plan to the client for feedback. The feedback is then incorporated into their final marketing plan before submission.

Realism

To understand the organization and its customers at a deeper level, students conducted desktop and limited primary research. Students could also ask the client further questions after the initial client presentation and visit the organization if needed.

Interestingly students with varying degrees of real-world marketing experience acknowledged the realistic nature of the process and tasks required by the assessment. A student without any prior marketing work experience cited the interaction with the client as an important determining factor of authenticity: *"We used a real company, had a briefing"* as well as the work tasks involved" we had to do research and had a budget we had to stick to" (S13). Another student with marketing work experience compared the tasks they had performed in the past with the assessment tasks and acknowledged a similarity between the two experiences: "I've worked with marketing campaign planning, budgeting and analysis, and I can say that the assessment tasks are fairly similar to practices I've seen in my previous workplace" (S14). The aspect of working in a team and the development of soft skills further contributed to some students' perceptions of authenticity: "working together as a team and I think these assessments have made me more ready and experienced for the future" (S12).

Output

The presentation to the client and the final Marketing Plan were the outputs of the assessment. Students presented their Marketing plan to the client, lecturer, and peers for feedback. The feedback was then incorporated into the final written Marketing Plan before being provided to the client for future reference and submitted for marking. Students considered the outputs as being realistic to work carried out by a marketing professional:

> It was super similar to a piece of work we would complete in industry because you would need to write similar reports, with groups of people based on all the information given… the marketing plan was very much like a real-life marketing plan that you would do. (S15)

Responses from students regarding the authenticity of the outputs also included the social interaction aspect with the client commenting specifically on the physical presence of the client at the presentations: "the owners were there today" (FM2), and "it's like when you present in front of your boss" (S15).

Judgement

As the marketing plan was a staged assessment (situation analysis, brand strategy and marketing mix plus budget), students received formative feedback from the lecturer at each stage of the project.

Students found the feedback to be helpful but did not explicitly comment on the staging process's similarity with the real world: "before we moved on to the next part, we were given feedback which worked quite well because sometimes we needed the feedback to do the next part, and then we could still make adjustments on the previous part"(S18).

The client and the lecturer provided feedback on the students' team Marketing Plan presentations. Both forms of feedback were seen as valuable and authentic and enabled students to complete an appropriate Marketing Plan document:

> The evaluation was completed by our lecturer and the owner of the business, which is similar to a real workplace where you would need to pitch your ideas, report and present to your co-workers, make changes after advice and then re-present in front of your boss and the owners of the company. (S15)

Students also received feedback from their peers. Although peer feedback was viewed positively by some students "I think it's important to learn how to accept constructive criticism as well as praise. Emotional IQ in the workplace is so important" (S18), others felt it wasn't a realistic reflection of the business world: "From my experience of being in the workplace, it's always your boss who does the evaluation – a performance review. I guess, in terms of your colleagues, they don't have as much of a say" (FM2).

Case 3: Project Management Assessment

This assessment was part of a core subject taken by all students in second year as a prerequisite for industry placement in the final year. The learning outcomes required each student to demonstrate the ability to produce project documents and coordinate a project from beginning to end. To provide an opportunity to build and assess such skills, students were expected to act as project administrators for a team of students from other subject classes, working on projects similar to those previously described (i.e., Operations management team, Marketing team). In this role, they were required to engage with the team proactively, attend meetings, develop a project plan, and complete a minimum of three progress reviews. Evidence was submitted as two assessments: project plan (30%) and progress review (40%). Working with student teams from other subject classes enabled interdisciplinary collaboration. It also made it possible for each individual student to act as project administrator for a team that worked on the same timeframe as their semester. These student projects were also quite similar in terms of team size and project complexity, which ensured fairness. For this assessment, students were interviewed from other subject classes who worked with these students and received project plans and progress reviews.

Realism

Students identified elements of real-world tasks in this assessment. For example, one student expressed, "It was a good learning experience to know how you can handle the team, what can be the risks, and how to achieve a target or time in the project" (PMF1). Many participants discussed coping with the challenges of working with students from other subject classes by comparing this to the challenges of the real world. They also considered it a unique learning opportunity and "an opportunity to come out of your comfort zone" (PMF2). Working with students from other subject classes whom they did not know created a social context and was considered by some students as "an authentic experience in terms of collaboration" (PMF2). However, not all students shared the same perspective on the authenticity of working with their peers. Some argued that real-world project managers have the appropriate authority and responsibility. The mismatch between students'

perceived expectation of the role and their peers' inconsistent work ethic led some students to feeling that they were not immersed in an authentic social environment, as one student put it: "They are just students" (PMF4). Students' varied expectations, coupled with the absence of direct immersion in an actual workplace environment, contributed to the emergence of divergent perceptions among the students.

Output

Students were expected to submit a project plan, a series of progress reviews and evidence of their communication using templates. The recipients of those project outputs were students working on group projects in other classes (all teams). They saw the benefit and acknowledged their usefulness. As one student remarked "It helped us keep track…he used to make those Gantt charts… that gave me an idea" (PMF3). The documents also influenced their work dynamics, with one student noting, "It guided the group towards the deadline … he had those status reports with those different colored things … it brings a new point of view, and it helps us see things that we might have missed" (PMF5). Reflecting on the project outputs, project management students emphasized the importance of time and resource management in real-life scenarios. One student expressed, "…for me, this project has been very eye-opening. The reason being it gives you an insight on how projects work, how you are supposed to manage your time and manage the resources efficiently" (PMF2).

Judgement

Students regularly received formative feedback from the lecturer on the Google drive as projects progressed. The first summative assessment was a project plan. The feedback on this assessment served as a checkpoint to ensure students were ready with their project plan before further engaging with other students for progress reviews. Emulating a professional work environment, students were required to have project plans approved by team members, fostering collaboration and consensus within the team. They also received indirect feedback from the team that they worked with. Some students used this feedback for personal development and to improve communication skills.

This assessment builds on the familiar context of student projects and helps students learn new skills in professional project management. However, this individual nature of the assessment, particularly the fact that the other team did not receive any academic incentive, was perhaps one of the reasons that sometimes-other teams did not collaborate and made the assessment a major challenge. Here is the perspective of a student on the receiving side of the project plan: "He needs us for his project, but we don't need him. We can ignore him" (PMF3). While many others found the project management students to be highly involved and beneficial and noted that "The project consultant's weekly status reports offered a fresh perspective" (FM5).

DISCUSSION

This study examined students' perceptions of the authenticity of assessments in three business subjects in higher education. A three-dimensional framework was used to determine the students' perceptions of the authenticity of the work-related assessments. A summary of findings which support the three key concepts of authentic assessment in the proposed three-dimensional framework is presented in Table 4.

TABLE 4: Summary of findings.

Theme	Operations management	Marketing	Project management
Realism	**Realistic tasks** – solving operations management problems. **Physical Environment** - going to actual businesses. **Social environment** – collaborating to complete a project, talking to managers and employees at businesses	**Realistic tasks** – Investigation and development of marketing plan. **Social environment** - collaborating to complete a project, Engagement with real client	**Realistic tasks** – working with a team as project administrator. **Social environment** - collaborating to complete a project, working with a diverse range of people, talking to managers and employees at businesses
Output	Solution to an existing operations problem as a report and a Presentation to client	Marketing plan as a report and a Presentation to client	Project plan, meeting minutes and progress review documents.
Judgement	Formative feedback from peers, lecturer, and industry partners as well as self-reflection. Summative feedback from lecturer and peers – based on industry needs and best practices and learning outcomes. Self-improvement based on feedback and self-reflection	Formative feedback from peers, lecturer, and industry partners as well as self-reflection. Summative feedback from lecturer and peers – based on industry needs and best practices and learning outcomes. Self-improvement based on feedback and self-reflection	Formative feedback from external team and lecturer as well as self-reflection. Summative feedback from lecturer – based on industry best practices and learning outcomes.
Students' perception of authenticity	Perceived as highly authentic through immersive experiences via visit to actual workplaces, engagement with industry partners, real-world challenges, and application of practical skills. The immersive engagement with industry also enhanced the appreciation for traditional assessment approaches as they could see their use in the industry.	Perceived as authentic due to their interaction with a real client, completion of realistic marketing tasks, and preparation for future marketing roles. There were some inconsistent perceptions of authenticity stem from differing expectations regarding the availability of resources and working hours compared to real-world marketing departments.	The role as project administrators for external teams, working with diverse range of people, time and resource constraints, and the outputs benefiting external teams enhanced the authenticity of the assessment. Inconsistent perceptions of authenticity raised due to lack of direct engagement with industry, differing expectations of the project manager's role in understanding project requirements and leading a team, and concerns regarding team responsiveness and the absence of consequences for low engagement.

Realism

Students experienced realism by working on actual problems or issues from a real business. Aspects of these assessments which contributed to perceived authenticity and realism were that the assessments were similar to real world work activities and that they had practical value. This finding aligns with previous research (Ashford-Rowe et al., 2014; Gulikers et al., 2004; Villarroel et al., 2018). Students highlighted challenges they encountered as being particularly authentic. They acknowledged that working with a range of people not only provided an authentic social environment but also imposed challenges they considered important to their development. Hence this research validates the importance of undertaking challenging tasks and situations not only as determinants of authenticity (Ashford-Rowe et al., 2014; Gulikers et al., 2004; Newmann et al., 1996) but also as a key factor in students' engagement and perception of an authentic assessment.

However, each case demonstrated some differences in perceived realism mostly due to differences in the physical and social environment. Students thought the Operations Management assessment demonstrated a high level of authenticity due to the student's engagement with both social and physical work environments, as emphasized by Ashford-Rowe et al. (2014) and Gulikers et al. (2004). Despite the Marketing Management assessment only requiring a marketing industry person to present to the students within the classroom and did not require visiting the business location, students still perceived the assessment tasks as realistic and authentic. An explanation for this could be that the physical context is not too far removed from reality as a client typically meets with a marketing team in a meeting room. Yet they had different perception on availability of data in the real world. The Project Management assessment had the most divergent perception on authenticity primarily due to lack of engagement with authentic physical environments or industry people. While all three assessments shared resemblances with real-world tasks, it is evident that the social and physical environments played a crucial role in shaping consensus in perceived authenticity. Conversely, the absence of these elements resulted in divergent perceptions of authenticity. For instance, for project management, some students asserted that working with challenging individuals closely resembles real-life scenarios, while others argue that collaborating with fellow students, rather than industry people, lacks realism. As students engaged with the physical and social environment of business, their perception of real-world practices evolved.

Findings suggest that not only do the physical and social environment play a key role in developing required skills and preparedness for professional work as discussed by Gulikers et al. (2004) but also strongly influence students' perception. However, the extent to which the physical environment was deemed important seems dependent on the nature of the task in the real world; if the task can be completed successfully without engagement with the physical environment, as in the Marketing Management case, then perceived authenticity will not change. Perhaps, the social environment supersedes the physical environment in students' perception of authenticity. As businesses are increasingly transitioning into distributed and/or hybrid modes (Iqbal et al., 2021) and jobs are changing from 9-5 to the gig economy (Ungureanu, 2019), the physical environment may lose its importance to perceived authenticity.

Output

Students in all three subjects perceived the documents and presentations produced for the assessments as very similar to what is produced in a workplace. Nevertheless, the requirements and learning outcomes of different subjects presented different opportunities and challenges. For example, the

diagnostic nature of process improvement projects for Operations Management provided an opportunity for short independent projects that could have been facilitated with industry. Process improvement projects can happen anytime independent from the day-to-day business. On the contrary, managing projects requires engagement from prior to the start date of a project to the end of a project, and finding projects that begin and end during a semester for every individual student is a difficult, if not impossible, task. Hence, students produced project management documents for other student projects which were happening during the semester and were used as a proxy for an authentic assessment. However, students were not part of the team, and their engagement was primarily in an administrative capacity. Students who received project management documents as well as those providing the documentation expressed discontentment with the process and confusion over the expectations of the role. This may be one of the challenges unique to cross-disciplinary scenarios; by bringing together individuals from diverse disciplines, cross-disciplinary projects naturally give rise to divergent expectations among team members, intensifying the complexity of the situation.

So, it can be argued that while there is consensus amongst scholars (Ashford-Rowe et al., 2014; Gore et al., 2004; Gulikers et al., 2004; Villarroel et al., 2018) in terms of the importance of producing outputs that replicate typical workplace tasks, the nature of those tasks, particularly their duration, size, and nature of required data, plays a key role in replicability. Furthermore, the perceived authenticity of the same output can be enhanced when its practical application in the industry is evident to students. Interestingly, outputs that are commonly employed in traditional assessments, such as presentations and Excel exercises, take on a heightened sense of authenticity when students have the opportunity to witness their relevance in real-world settings or receive validation from professionals in the business field.

Judgement

Authentic assessment within WIL can have advantages in terms of construct and consequential validity of the assessment (Gulikers et al., 2004), but concerns regarding marker reliability and subjective evaluations have been raised (Ferns & Moore, 2012; Gonsalvez & Freestone, 2007; Nisbet et al., 2022). The final grades for assessments in this study were awarded by university academics, and contrary to previous research, there were no complaints from students regarding the nature of the feedback and its fairness. This may be because feedback from the industry was formative, which prevented some of the pitfalls of having multiple summative assessors. Lecturers' control over assessment design, structure and nature of tasks led to students' perceiving fairness and reliability of marking, which provided an overall positive experience for students.

Judgement criteria in all three assessments were based on real-life criteria and included self-reflection and formative feedback (Ashford-Rowe et al., 2014; Gulikers et al., 2004; Villarroel et al., 2018). Students regarded feedback from the lecturer and industry representative as valuable and realistic, but feedback from their peers was not always well received.

The diversity of feedback received by students is similar to the dynamics observed within industry. In this scenario, students assume the role of consultants, where customers are industry professionals, while the lecturer serves as a management figure. Additionally, feedback from peers mirrors the dynamics of receiving feedback from colleagues in a professional environment. Customer feedback, along with peer feedback, may indirectly influence one's actions or influence managers' perceptions and evaluation. Thus, the interplay of customer, peer, and managerial feedback collectively shapes one's professional growth and development. Nevertheless, assessment in higher education that leads

to qualifications needs to be reliable; that is, there must be consistency across markers. Previous research has reported the dilemma that can occur in meeting this requirement within WIL. As university staff grade the assessment, the limitations related to multiple assessors in WIL (Nisbet et al., 2022) is resolved. Various other aspects of authenticity discussed in the literature were evident.

This study has found that authentic, work- integrated assessments and learning can occur in higher education outside of placements and internships. Students perceived the assessment tasks to be realistic because they were similar to workplace activities and authentic challenges were encountered. Students appreciated engaging with actual businesses by either going into the workplace to carry out the activities or by engaging with business personnel on campus. This shows the value of higher education institutions collaborating with industry partners to create authentic project-based and work-integrated assessments.

CONCLUSION

In conclusion, this study delved into a key question regarding students' perceptions of assessment authenticity associated with WIL activities in three distinct business subjects. The findings unequivocally demonstrate that students consistently regarded these assessments as authentic. This affirmation was particularly noteworthy, as students not only acknowledged but also welcomed the challenges stemming from the complexity and demands of these tasks. The research also addresses the factors contributing to students' perceptions of authenticity. The paper offers a framework of authentic assessment delineating key factors contributing to students' perceptions of authentic assessment. The factors include realistic tasks that replicated industry activities as well as the social and physical environment created by engaging with industry and working in teams.

While work placements provide valuable opportunities for students to acquire employability skills, authentic assessments serve as a steppingstone that seamlessly integrate various facets of WIL into students' experiences, effectively preparing them for independent employment. This research responded to the call for further research on WIL in the area of authentic assessments in business disciplines (Ajjawi et al., 2020; Sotiriadou et al., 2020) particularly the less understood student perspective. It also partly responds to Sotiriadou et al. (2020) call for further research on cross-disciplinary collaboration in business related education. Findings from the project management case highlight the intricacy of such projects and exhibit unique challenges in designing and implementing cross-disciplinary assessments. However, more research is required to include different types of cross-disciplinary assessments.

This study is limited by its sample size and the available assessments and subjects. Nevertheless, this study identified the role that the physical and social environment, nature of the task and industry involvement play in determining students' perceived authenticity. Hence, further research is recommended to examine the impact of physical and social environment and/or design of assessments on student engagement and perceived authenticity in a larger and more diverse sample of higher education subjects across different disciplines. This would provide a more comprehensive understanding of the topic.

Future research could also explore students' perceptions of authenticity in the context of online and hybrid environments.

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