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AUTHENTIC ASSESSMENT DESIGN IN ACCOUNTING COURSES: A LITERATURE REVIEW

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ABSTRACT

Aim/Purpose	Authentic assessments offer students the opportunity to develop skills that implement the formal learning they receive in the classroom. Although there is a need for accounting graduates to possess a plethora of skills to equip them for success, there is a shortage of literature that focuses on authentic assessment design for accounting courses. This paper aims to address this gap by compiling a toolkit for accounting educators aspiring to design and implement authentic assessments.
Background	This paper reviews examples of authentic assessments that are available and have been used by accounting educators and educators in general. It highlights the skills that might be developed with each assessment
Methodology	A review of 182 articles on authentic assessment design and examples of authentic assessments like portfolios, reflective journals, presentations, reports, peer and self-assessment was conducted.
Contribution	A toolkit with examples of authentic assessment to ease the task of authentic assessment design for those new to authentic assessment and seasoned authentic assessment practitioners alike.
Findings	Authentic assessments are a form of learning. They help graduates develop skills and attributes that will make them work-ready and capable of handling a lot of real life practical work situations. Rubrics are an important part of authentic assessment implementation and their use is mandated by business school accrediting bodies like AACSB.

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Recommendations for Practitioners	Accounting educators may find guidelines in this paper which will help them understand authentic assessments and enlighten them on the challenges they may encounter when implementing the assessments.
Recommendation for Researchers	There is a need for future researchers to contribute more to this topic so as to increase the variety and amount of literature available for those wishing to engage with authentic curriculum design in accounting. Future researchers could also focus on the perceptions of authentic assessments of accounting educators, students and employers.
Impact on Society	This paper may also be of use to prospective employers wishing to gain a clear understanding of the skills inherent in prospective graduates who may have been exposed to authentic assessments. Accounting students and graduates may find this paper useful as it will help them comprehend the importance of some the assessments with the backing and assurance from the literature.
Future Research	Future research may focus on the challenges in implementing authentic assessments. It would also be great to see more research addressing the perceptions of educators towards authentic assessments.
Keywords	reflective journals, critical thinking, accounting education, graduate-attributes, problem-based learning, work –integrated learning

INTRODUCTION

There is concern that accounting graduates are missing requisite skills for professional practice. Concerns regarding their communication skills were brought up in the early nineties with an emphasis on the necessity to consolidate computing and communication skills into accounting curriculums (Hancock et al., 2009). The Australian Learning and Teaching Council (ALTC) interviewed 47 employers from diverse organizations in an effort to identify the required skill sets for Accounting graduates, and they found that the most frequently mentioned skills were problem-solving; planning and organizational skills; self-management; technological competence; initiative and enterprise; interpersonal and teamwork skills, communication and presentation skills (Hancock et al., 2009). The findings showed that there was a need for Australian graduates to possess generic and higher-ordered capabilities, including negotiation, analytic and critical thinking, and the ability to engage clients (Hancock et al., 2009). A report by the American council on Education indicated that some students in the USA believed that they did not acquire skills that were useful in the workplace and that they lacked communication and teamwork skills (Wellington, Thomas, Powell, & Clarke, 2002). Most studies in Australia have come up with different graduate attributes and according to Oliver, Whelan, Hunt, & Hammer (2011), there is usually a combination of generic and employability skills and some features of civic engagement.

In line with these findings, higher education providers must guarantee that their students can acquire the generic skills during their learning. As a critical element of educational practice, assessments support the students' learning by offering them the opportunity to manifest the acquired knowledge and skills, whilst defining their vocational, academic and professional achievements. As Brown, Race, and Smith (2004) once asserted, "the results of our assessment influence our students for the rest of their lives and careers," consequently students' learning can be changed by the methods of assessment. Hence, to align the teaching and learning outcomes with the expectations of employers, education providers have shifted the focus to the philosophy of constructivism, under which the competences are considered not in relation to skill mastery, but as personal and situational. As such, they emphasize on the essence of a close alignment of assessment with performance-based context in the

real world (Wiggins & Pettibone, 1995). Alignment, therefore, is increasingly sought via authentic assessment (Herrington, Reeves, & Oliver, 2009).

Authentic assessment, perceived as a form of alternative assessment, is an assessment that continuously takes place throughout the learning period and is inseparable from the learning and teaching process (Gulikers, Bastiaens, & Kirschner, 2004). Authentic assessment is connected more closely with the real world needs and is meaningful as it requires students to use competence, a combination of knowledge and skills that can be applied in professional life situations (Gulikers et al., 2004; Larkin, 2014; Sridharan & Mustard., 2015). Forms of authentic assessment include portfolios, reflective journals, oral presentations, work integrated learning, self and peer evaluation, performance assessment, and so on. Authentic assessment can affect directly and indirectly students' learning. Authentic assessment is continuous, hence facilitates students' monitoring of learning activities (Pantiwati, 2013). Monitoring is a component of meta-cognitive skills and meta-cognitive skills include self-thinking and self-control mechanisms. Authentic assessment enhances thinking and meta-cognitive skills (Pantiwati, 2013). According to Bloom's taxonomy, thinking skill contains two aspects, namely, lower-ordered thinking and higher-ordered thinking. Higher-ordered thinking includes critical and creative thinking (L. W. Anderson et al., 2001). This review focused on concepts and definitions of authentic assessment and critical thinking.

This paper also sought to understand the value of problem-based learning. Problem-based learning, a form of authentic assessment, is deemed to be a more effective way of evaluating students' work compared to traditional assessments (Barber, King, & Buchanan, 2015, Ward & Lee, 2002). Authentic assessment uses learning activities and performance samples which advocate students using higher-order thinking skills.

As authentic assessment is fairly complex and requires a lot of judgment from those grading the work, there is a need to incorporate reliability measures in grading authentic assessments tasks. As such, developing an assessment rubric defining standards at different course levels and structures to support and measure learning is becoming more and more popular. One possible explanation for the common use of rubrics is that they provide meaningful assignments and assessments to students through transparency. Students recognize what they are doing and why they are doing it. Without rubrics, there are no guidelines for students towards the requirement or understanding the teachers' feedback on the results attained (Montgomery, 2002). Hence, the study also sought to understand how the use of rubrics can enhance students' learning. Other authentic assessment toolboxes that can be used in assessing students' work authentically were also explored.

In their quest to design authentic assessments for accounting courses the authors discovered that there was shortage of research providing the technical know-how or a 'user manual' of authentic assessment. In other words, most of the articles gave examples of one or two types of authentic assessments but not an overview of most of the available options all in one place. It was after conducting a literature search that the picture slowly began to emerge: it became clear what authentic assessments were and what examples were being used in practice. The need for a one-stop toolkit for authentic assessments was highlighted. It was through this literature search that this paper came into being.

While research on authenticity in assessment continues to grow, there is still a growing need for a practical framework that can guide the design of an authentic assessment, especially in accounting education. To fulfil this objective, the study conducted a comprehensive review on literature to identify several factors that affect the authenticity of a learning experience. This study sought to determine the critical elements of authentic assessment, to facilitate design and assessment of complex and authentic tasks. Its purpose was to formulate an effective framework of task design and assessment.

The paper provides a review of previously published work related to authentic assessment design and examples of authentic assessments with the following keywords: authentic assessment, critical think-

ing, accounting education, assessment design, and problem-based learning. To obtain a diversified portfolio of literature, the authors conducted online searches utilizing RMIT University library and electronic databases such as Science Direct (sciencedirect.com) and Google Scholar (scholar.google.com). In addition, examples and case studies were referenced specifically from Australian universities which apply authentic assessment design including Curtin, Deakin, Monash, UNSW, and Edith Cowan universities.

The search strategy was not limited to accounting courses, other disciplines, especially business, were considered to expand the search and scope. Approximately 182 articles were reviewed. Given the need for not only the theoretical discussion on authentic assessment, but also its practical design, the authors also leaned towards literature that discussed the use of rubrics, examples of authentic assessment, and problem-based learning. Consequently, the authors could synthesize existing literature and draw conclusions addressing the gap in skill sets of accounting graduates and compile a toolkit on authentic assessment design for those new to the topic.

A definition of authentic assessment will set the scene: understanding what authentic is and is not is crucial for ones' appreciation of how it impacts students' learning, develops and nurtures desirable graduate attributes and the challenges inherent in authentic assessment implementation. Consequently, the next section will explore the description of authentic assessment.

WHAT IS AUTHENTIC ASSESSMENT?

One way to bridge the gap between industry expectations and the abilities of graduates is to assess the learning of students more authentically. Authentic assessment is built on tasks that encourage students to use their scientific knowledge in real contexts and show skills and competencies needed to navigate critical situations in professional life (Ashford-Rowe, Herrington, & Brown, 2014; Gulikers et al., 2004; Larkin, 2014; Sridharan & Mustard., 2015). Types of authentic assessment include portfolios, study and reflective journals, presentations, discussions, and performance assessment, just to mention a few. In contrast, examples of non-authentic assessment include standardized tests such as end-of-chapter exams comprising multiple-response questions (Sridharan & Mustard., 2015). Non-authentic assessments require students to simply study facts and prepare for their assessments via rote learning instead of building and applying the concepts (Gulikers et al., 2004; Scouller & Prosser, 1994). On the contrary, authentic assessments are based on different kinds of tasks assessing higher-ordered thinking with a demonstration of knowledge that can be applicable to real-life contexts (Ashford-Rowe et al., 2014).

The fundamentals of authentic assessments can be modified for use in many traditional settings in the business discipline. For example, Wellington et al. (2002) used authentic assessment in the multi-disciplinary industry project involving accounting, marketing, engineering, and industrial design students to work on real problems provided by participating industry partners. The tasks are in line with skills initially targeted by these programs, such as identifying and understanding problems, handling communication with clients, designing strategies, and participation in multi-disciplinary teams. The students' performance is assessed by both industry partners and academic supervisors.

Vos (2015) investigated how educators assess students' learning from simulations and found that most of them follow authentic assessment principles. Simulated environments, especially used in business and marketing, are designed to represent real-world decision-making contexts. In business simulations, for instance, groups of students develop business or product ideas, develop a target segment and go through a concept test and market entrance, and finally, present their business plan at a major business fair at the end of the semester (Vos, 2015). The students' work is evaluated by invited experts from the university and private sector companies who are sponsors of the business school.

Authentic assessment may use "performance evaluations, criterion referenced appraisals, systematic observation by instructors, clients, peers, self and portfolios and journals" (Wellington et al., 2002), scaffolded over a single course or over the entire program.

Some researchers claim that authentic assessment can be used interchangeably with performance assessment (Gulikers et al., 2004; Hart, 1994; Torrance, 1995), while others assert that authentic assessment emphasizes the realistic value of the task and context (Herrington & Herrington, 1998). The main distinction between authentic assessment and performance assessment is the fidelity level of the task and the conditions from which the performance might usually happen (Reeves & Okey, 1996). Authentic assessment puts a special emphasis on the high degree of fidelity, while this is not as critical a matter in performance assessment. The mentioned differences between authentic assessment and performance assessment demonstrate that every authentic assessment is also known as performance assessment, but not in reverse (Meyer, 1992). According to Marzano (2001), performance assessment is effective for measuring communication ability, problem solving, and critical thinking. In other words, performance assessment helps to improve meta-cognitive skills since it directs the method of studying. Thus, authentic assessment also has an impact on the improvement of meta-cognitive skills in students. As critical thinking is a desirable but often under-developed skill among students (Kimmel, 1995), it is necessary for educators to understand how authentic assessment may aid the development of critical thinking skills.

The Role of Authentic Assessment in Developing Critical Thinking Skills

Thinking skills are mental processes acquiring and generating knowledge to develop a meaningful experience in learning and teaching activities. Johnson and Johnson (2002) describe thinking skills as mental processes to find an answer to a question, relevant meaning, decision making, problem solving, and comprehending an issue. As pursuant to Bloom's taxonomy (L. W. Anderson et al., 2001), thinking skills are categorized into two groups. Lower-ordered thinking includes comprehension, knowledge, and application, whilst higher-ordered thinking contains evaluation, creativity, and analysis. In higher-ordered thinking, critical thinking goes to convergent thinking which leads to one point, whereas, creative thinking belongs to divergent thinking, which disperses from one point (Johnson & Johnson, 2002). According to Flavell (1979), the ability to control, understand, and manipulate the mental process is called meta-cognitive skill. In the context of education, meta-cognitive skill is described as the act of self-learning and the use of strategy for correct learning (Arends, 1997). It is believed that cognitive skills have a strong impact on different kinds of cognitive activities such as problem solving, memorization, recognition, communication, and comprehension (Sperling, Howard, Staley, & DuBois, 2004). According to Dean and Kuhn (2003), meta-cognition contains critical thinking, which is the ability of a person to think critically and respond to a policy, argument, and concept.

Research has shown that a person with critical thinking skills performs better and provides more information by elaborating the result of communication, observation, and experiences (Paul & Elder, 2013; Puteh & Hamid, 2014). Additionally, critical thinking and higher-ordered thinking control the basic cognitive process, that is, meta-cognitive, and combine comprehensive understanding on particular topics (Eggen & Kauchak, 1996). In other words, critical thinking is the skill to convince, to analyze findings and assumptions, to reason in an organized way, to solve a problem, to make decisions, and to communicate with meta-cognitive skill (Ennis, 1991). The curriculum can develop these aspects of critical thinking by concentrating on principles, concepts, structures, systems, and the tight relationships amongst these aspects. According to Lawson (2001), students would have the chance to think creatively and critically if the curriculum is plainly made for inquiry instruction. It could be said that the curriculum, in combination with other instructional components, determine the development of critical thinking skills.

Braun (2004) in his review of critical thinking in business curriculum literature shows three approaches to developing critical thinking skills. The first approach is problem-based learning, which use case studies or live projects as a major component of the business curriculum. By following fundamental problem-solving steps, students develop analytical skills from case examination, enhance judgement skills through evaluating different scenarios, and gain synthesis skills through the reconstruction of scenarios (McPeck, 2016). Development of critical thinking skills in business curriculum is also found in course content-embedded learning. This approach concentrates on the thought process rather than solely on concept learning (Katsioloudes & Tischio, 2001). It often uses the Socratic type of questioning to foster the discussion and deepen the content learning (Celuch & Slama, 2000). Techniques include classroom discussions and debates, in-class group exercises, guided questioning. The Socratic dialogue or questioning can be extended with the usage of instructional scaffolding technique, under which the student's thinking could be escalated to a higher degree of one on one tutoring between the instructor and student (Lesgold, 2013). Other approaches to develop critical thinking skills include critical system thinking, critical theory, and critical reflection. These approaches require the improvement and sharpening of critical thinking skills to identify and evaluate assumptions and alternatives, drawing inference regarding the connection between business practice in relation and the bigger context, and examining the trade-offs between individual and societal values (Braun, 2004).

However, traditional accounting programs that are composed of a series of knowledge-based courses may not contain the elements needed to develop critical thinking skills in students because such courses often emphasize algorithmic exercises and focus excessively on development of rote knowledge. While many traditional programs contain a capstone course based heavily on advanced case problems, instructors in these courses often find that students lack the critical thinking skills (Kimmel, 1995). This has sparked a continuous interest in developing a framework that can integrate critical thinking into the accounting curriculum (Bonk & Smith, 1998; Garcés, 2013; Kimmel, 1995; Springer & Borthick, 2004; Thompson & Washington, 2015). Bonk and Smith (1998) replaced the teacher-centered classroom with the student-consultative teaching approach and suggested ten plus critical thinking ideas that can be embedded directly into the accounting curriculum. Springer and Borthick (2004), through the implementation of business simulation in the classroom, demonstrated that the constructed understanding of students endures far longer than the mechanical and ritualistic computations in traditional accounting courses. Incorporating critical thinking not only improves the students' thinking skills, but also provides them with a broad accounting knowledge base (Kimmel, 1995; Thompson & Washington, 2015).

Going beyond the traditional approaches to learning requires instructors to come up with a variety of learning tools that will ensure students develop and nurture the desirable graduate attributes, and one such approach is problem- based learning.

PROBLEM-BASED LEARNING

Rooted in the constructivist thought, problem-based learning (PBL) is a student-centered instructional framework utilized to idealize collaboration and self-directed learning (Hmelo-Silver & Barrows, 2008) by posing a complex, ill-structured and authentic problem to students (Loyens, Kirschner, & Paas, 2011). Students work together in groups under the guidance of a facilitator to gain the skills and knowledge required to solve the problem and take responsibility for their self-learning. Over the course of a problem-based learning unit, students are able to apply the skills and knowledge attained from their own learning back to the problem for re-examination and resolution, with an assortment of closing or final products (Loyens et al., 2011; Savery, 2006).

One of the main criticisms of accounting degrees in higher education from prospective employees and employers in the early twenty-first century is the lack of focus on the development of transferable skills, research skills, and problem-solving skills. Research shows that there is a need to differentiate and reform higher accounting education programs to guarantee learners achieve actual skills ra-

ther than memorizing the content, develop the strategy to improve skills and knowledge so as to stay operatively in the professional career (Killian & Brandon, 2009), and acquire fundamental professional capabilities such as critical thinking, analytical and communication skills (Apostolou, Dorminey, Hassell, & Watson, 2013).

By advocating an assortment of learning strategies such as co-operative learning, reflective analysis, interpersonal skills and critical thinking (Cobb & Bowers, 1999), problem-based learning promotes theoretical and practical understanding, and constructs new knowledge (Kurzel & Rath, 2007; Wilkin, 2014). In a study whereby Vietnamese high school students participated in problem-solving games, S. McDonald (2017) found that interactive teaching methods could enhance critical thinking.

There is limited theoretical discussion on PBL pedagogical approaches implementation in business education, especially in accounting education. The first paper defined four strategies that accounting instructors should consider when applying the PBL approach (Johnstone & Biggs, 1998). It was suggested that PBL should be adopted only when the fundamentals are learnt; problem solving skills are acquired, innovative ways of enhancing problem solving skills are in place, and finally the PBL class instructors are also experts within the subject area. The second theoretical paper was published by Milne and McConnell (2001). They offered a mechanism of PBL though which case studies could be deliberately utilized to trigger the knowledge acquisition, provide students the freedom to learn on their own, and to purposely stimulate the development of self-directed learning skills.

There are some empirical studies published on PBL in the context of accounting education and clear evidence of its impact on students' achievements and outcomes. Breton (1999) demonstrated that the application of problem-based learning approach produced better results in terms of knowledge acquisition and aptitude to deal with problems in the long term. Using a case study detailing how problem-based learning was implemented in a final-year Accountancy Capstone unit in an Australian university, Stanley and Marsden (2012) also showed that students perceived problem-based learning to be effective, especially in terms of developing questioning, teamwork, and problem solving skills. Additionally, problem-based learning tasks can also be integrated into Accounting information system (AIS) curriculum to improve academic performance (Wilkin, 2014). Finally, it is appropriate for novice learners as it fosters transferable skills through the application of learning in new contexts or on new tasks (Bergstrom, Pugh, Phillips, & Machlev, 2016).

Designing educational experiences which utilize the problem-based learning approach requires instructors to consider the modes of assessment adopted (Overton, Byers, & Seery, 2009). Since problem-based learning is often used to encourage learners to develop some skills they may rely upon in their future career, it is important to develop an authentic assessment. In assessing problem-based learning, authentic assessment can be considered as a more appropriate form of assessment in comparison with traditional assessments such as standardized testing and norm reference which assess the recall of factual content knowledge (Barber et al., 2015; Ward & Lee, 2002). The deliverable shall imitate the kind of outcome that problems would arise if the students encounter it in a professional context instead of the academic one.

WHAT CONSTITUTES A GOOD AUTHENTIC ASSESSMENT DESIGN?

In a study on the quality of assessment in social sciences in the tertiary setting, Gore, Ladwig, Elsworth, and Ellis (2009) emphasize three elements that need to be included in every assessment task, namely, student support, intellectual rigor, and significance. These elements are all associated with intellectual rigor and indicate that each assessment task must be designed to increase the active involvement of learners, help them develop their higher-ordered thinking, and oblige them to demonstrate clearly what they have learnt (Amosa, Ladwig, Griffiths, & Gore, 2007; Clare, 2007). The value of an assessment task derives from guaranteeing that the task is both linked to the learners' prior knowledge and provides extra academic settings that imply an implementation of broad

knowledge and cultural perspectives so that the learning is appropriate and meaningful (Bearman et al., 2016; Gore et al., 2009). Lastly, students have to be aware that they are fully supported and there is a high degree of expectations on them by showing them the criteria of assessment which can assist the navigation and management of their learning (Gibbs, 2014; Gore et al., 2009).

It is also essential and necessary to consider the eight critical elements that determine an authentic assessment, as described by Ashford-Rowe et al. (2014):

- An authentic assessment should challenge students to construct and produce knowledge.
- The skills and knowledge demonstrated by students through an authentic assessment should enable them to successfully produce a performance or product (outcome).
- Authentic assessment design should support the concept that the skills, knowledge and attitude being assessed may be transferrable to other areas.
- Critical reflection, self-evaluation and self-development should be components of authentic assessment.
- The necessity of accuracy of the assessment activity in developing the learner's intellectual inputs and evaluating how the key skills and knowledge are relevant to work-related scenarios.
- The extent to which the assessment environment and the tools like language, graphics and topics used to deliver the assessment task simulates a 'real world' environment.
- The essentiality of formally incorporating opportunities to provide feedback.
- The significance of creating opportunities for collaboration.

Unequivocally, one the most important aspects to of a good assessment lies in the design of authentic assessment tasks. Thus, there is a challenge associated with the design of a high-quality assessment task based on the idea that assessment supports learning, or, simply put, assessment is a form of learning. The challenge here is to design authentic assessment tasks which mimic real-world experiences of learners for a meaningful learning experience in the learning process (Rodríguez-Gómez & Ibarra-Sáiz, 2015). Peris-Ortiz and Lindahl (2015) propose three principles supporting the design of authentic assessment, which are challenge, reflection, and transferability. First, is the creation of challenging assessment tasks by designing and implementing assessment tasks that require lofty expectations from the learners, which lead to obstacles that need to be solved using a variety of strategies. Second is the proposal of assessment tasks that are intellectually demanding, which means requiring students to demonstrate their learning and comprehension and high-level thinking through specific assessment tasks. Finally, the authentic assessment activity should support the notion that knowledge and skills learnt in one area can be applied within other, often unrelated, areas (Peris-Ortiz & Lindahl, 2015; Rodríguez-Gómez & Ibarra-Sáiz, 2015). An example of this approach was the multidisciplinary industry project developed by academics at Monash University in Melbourne, Australia. This assessment was designed for students in the third year of Industrial Engineering, Accounting, Marketing, and Industrial design working together a real-life practical project in modern industrial scenarios (Wellington et al, 2002).

Authentic assessment is highly effective when it reflects a high level of proximity, which is defined as the closeness of the context in resembling a professional environment (Oliver, 2015). The notion of proximity in learning illustrates Gulikers et al.'s (2004) assertion that an assessment's physical and social context are crucial to its overall authenticity. While investigating the effects of authentic assessment on business students' satisfaction and promoting behavior, James and Casidy (2018) suggest that universities should offer a mixed approach of both traditional and authentic assessment instead of offering authentic assessments only. For instance, the subject area might have to comprise standardized testing and knowledge transmission to guarantee that learners comprehend the fundamental concepts of their discipline (Gulikers et al., 2004).

Once the authentic assessment has been designed it is important to use rubrics to communicate the expectations and provide feedback to maximize students' learning outcomes.

How the Use of Rubrics Can Enhance Students' Learning

Rubrics are assessment tools which are designed to facilitate the process of elucidating, communicating, and assessing expectations. They are scoring devices that comprise particular information in regard to what should be expected of students determined by defined or specified criteria (Jonsson & Svingby, 2007). The utilization of rubrics is not new. They exist in various forms, including those common to accounting educators such as the assessment of executive briefings, business plans and final reports (R. A. Riley, Cadotte, Bonney, & MacGuire, 2013). These are definitely not new to accounting educators, what is rather new and goes beyond the utilization of rubrics is the increased focus on authentic assessment as well as the need to assess skills such as knowledge transfer, problem-solving, and critical thinking across the entire curriculum (Kealey, Holland, & Watson, 2005).

Rubrics are potentially one of the most useful devices in the accounting education teacher's toolbox. Petkov and Petkova (2006) in their study of implementing rubrics in an introductory Information Systems (IS) course pointed out the adoption of rubrics helps to set the basis for a long-term assessment program combining portfolios and projects, measure students' progress overtime, better students' performance and expectations, and make the assessment more uniform. While rubrics can help facilitate the grading of assignments, the key benefit of rubrics is the promotion of learning (J. S. Anderson & Mohrweis, 2008; Jonsson & Svingby, 2007). The transparency in standards and criteria of rubrics allow students to have a better understanding of the key target criteria for their performance and define specific areas for improvement (Mertler, 2001). In other words, rubrics show what is essential and thus provide explicitness and clarity to the assessment, and this is considered as positive by teachers and students likewise (Bissell & Lemons, 2006; Schamber & Mahoney, 2006; Shaw, 2007).

Apart from transparency, another important effect of rubrics perceived by teachers is the assistance with reflective practice (Beeth et al., 2001; Luft, 1999). The use of rubrics can provide teachers additional insights into the impact of their teaching and instructions on students outcomes (Waltman, Kahn, & Koency, 1998). Furthermore, the solid design of rubrics' standards and criteria gives information for feedback and facilitate self-assessment (Schamber & Mahoney, 2006). There are a few studies reporting that when students did not understand the grading process, they engaged in off-task behavior. However, this behavior was partially addressed with the use of rubrics (Piscitello, 2001; Toth, Suthers, & Lesgold, 2002). One possible explanation of this is that rubrics provide meaningful assignments and assessment to the students through transparency. They recognize what they are doing and why they are doing it.

Business schools, nevertheless, have been sluggish in defining standardized measurement of non-quantitative competencies until recently when the Association to Advance Collegiate Schools of Business (AACSB) declared student learning the primary concern of collegiate education. This turned the focus from what instructors teach to what students learn (Martell, 2007; Stivers & Phillips, 2009). The present AACSB standardized measurement, for instance, requires direct assessment measures and outcome based assessment. These are not only advocated to be at the program level but also implemented at the course level (Kelley, Tong, & Choi, 2010). According to the AACSB, documenting the learning of students is tremendously crucial in decisions related to preliminary accreditation and re-affirmation (Hawkins, 2010).

In a study on AACSB deans' perspective of assessment of student learning, over 90% of them asserted that written assignments graded with rubrics are a component of their assessment protocol (Kelley et al., 2010). An important part of assessment is to assist the faculty measure students' learning so as to ascertain the expected learning outcome has been delivered. Rubrics is a recommended approach to scrutinizing outcomes at the course level besides the faculty and further to university level. According to Bisoux (2013), the new accreditation "Standard 8- Curricula Management and

Assurance of Learning—Giving context to assurance of learning" of AACSB emphasizes on continuous improvement of business school outcomes through a comprehensive Assurance of Learning program. Initially triggered in late 1990s and gained momentum in the early 2000s, the AACSB focus on assurance of learning has increasingly been focused and met its standards. To get accredited by AACSB, it is important to meet assurance of learning standards and implement the concept of rubrics at all levels.

Without rubrics, there are no guidelines for students toward the achievement or comprehension of the teachers' feedback and comments on the results attained (Montgomery, 2002). By conducting a focus group discussion with fourteen college students, Andrade and Du (2005) concluded that the adoption of rubrics was enormously useful in setting expectations of performance and feedback in regards to the achievement of standards in teaching and education. However, the use of rubrics to communicate standards attained by students in professional education then calls for methods of assessment such as authentic assessment which is able to capture such standards (Ghosh, Bowles, Ranmuthugala, & Brooks, 2016). Traditional assessments fail to assess essential behavior-based attributes (Wiggins, 1992), while authentic assessment can assess the knowledge as well as technical skills that together define professional competence (Sampson & Fytros, 2008).

Professional competence is cultivated and examined under particular circumstances in educational settings. Cumming and Maxwell (1999) assert that the transfer of competence to perform single constituents of a task to an overall performance of the task under which the integration of competence is needed should not be underestimated. In fact, learning and assessment need to be contextualized to make them meaningful and relevant to students (Cumming & Maxwell, 1999). Meaningful context should not only motivate students to learn but also provide a holistic picture of what learning can or cannot be transferred to other contextual scenarios (Ghosh et al., 2016). According to Ghosh et al. (2016), an assessment should concentrate on the specified constructs of skills and knowledge if it fails to create real-world contexts and complexities in assessments. For instance, assessments designed in accounting education may not be able to assess students' competence in showing their level of ethical and social responsibility in cross-subsidization of client's account context, however, they can be designed to assess a student's competence to do so through their capability to describe whether an ethical problem exists and support their proposition using an ethical framework (J. S. Anderson & Mohrweis, 2008). Even though such assessments might happen in a controlled environment, the authenticity is demonstrated through ways that the same skills can be applied in real-world contexts (Messick, 1994). The standard of learning attained in the real-life context can be communicated via rubrics, making it a crucial authentic assessment tool for assessing outcomes representing workplace tasks.

EXAMPLES OF AUTHENTIC ASSESSMENTS

PORTFOLIOS

Portfolios are a collection of a student's performance that is purposefully chosen to tell a specific story about the student (Kim & Yazdian, 2014). It is not a multitude of the student's work accumulating throughout one semester or the entire year. Instead, portfolios contain a specifically selected subset of their work (Adeyemi, 2015; Lam, 2016). The design of a portfolio assignment conventionally commences with a kind of purpose or story for the portfolio. Therefore, portfolios are defined by the particular purpose served, an amount and the type of items encompassed, the activity of pinning down the items to be encompassed, in what ways and whether a student responds well to the selected items, and all prior decisions to make the portfolios (Adeyemi, 2015; Lam, 2016).

Portfolios are authentic in a way that they specify a pile of descriptive details in regards to the achievement of students (Samkin & Francis, 2008). As previously mentioned, authentic assessment practice concentrates on the process of learning in which students are engaged, such as studying techniques under which students utilize the knowledge acquired to transform new information from

various sources to better understand the learning process and thought of the students (Chitpin, 2003). The assessment offered via authentic assessment might be considered as part of the classroom experience on a daily basis (Goodman, 1991). As such, portfolio assessment is associated with numerous aspects of the curriculum via instruction, content, objectives, and evaluation (Chitpin, 2003). Therefore, a portfolio is commonly integrated with authentic assessment practice as it tells the student's story through a purposeful collection of the student's work and meaningful reflection and evaluation of that performance rather than through test scores.

Portfolio assessments are typically designed for one of the following three purposes: demonstration of students' growth; communication and collaboration; and opportunities for transforming teaching (Kim & Yazdian, 2014). First, the growth and progress of students are demonstrated as their work samples are collected gradually. For example, the performance of students on a standard test can be incorporated as the very first item in the student's portfolio. Based on the outcome of the test, teachers can identify if the results are within the norm group and accordingly design some differentiated instructions such as reciprocal teaching, instructional conversations or collaborative grouping (Bergeron, Wermuth, & Hammar, 1997; Kim & Hinchey, 2013; Kim & Yazdian, 2014).

Second, portfolios facilitate communication and collaboration amongst teachers, students, and parents. Cohen and Wiener (2003) exemplified the communication process between those collaborators via the student learning portfolios. According to Cohen and Wiener (2003), teachers create instructional goals and communicate these to students, and in turn, students explain what they have learnt to the teachers. Third, portfolio assessment produces constructive feedback for teachers to transform their teaching to meet the needs of individual students. This helps in making experienced, effective teachers who can transform their pedagogical content knowledge into instructions that are engaging and promote meaningful learning (Hulman, 1987).

Chatham-Carpenter, Seawel, and Raschig (2010) have identified three distinct commonly referenced purposes for e-portfolios, which are reflecting on learning, career related uses, and documenting assessment of professional standards. The use of e-portfolios to reflect on learning helps students bridge their in-class learning to community and workplace contexts, between courses and between academic years (Chatham-Carpenter et al., 2010). With career e-portfolios, students can incorporate their curriculum and co-curriculum learning, identify crucial skills they are developing, see the value of their experiences, make preparation for job searches and interviews, and potentially share the e-portfolios with prospective employers (Chatham-Carpenter et al., 2010). E-portfolios are also used to document assessment of professional standards; over half of universities studied currently use them for that purpose. For instance, Johns Hopkins University's (JHU) Center for Technology in Education in the United States is renowned for the portfolio project, called "Digital Portfolio". Similarly, the University of Iowa has their web-based system, called Iowa e-Porfolito™, designed to meet performance assessment requirements and mandated standards (Chatham-Carpenter et al., 2010). Examples of widely available systems of e-portfolios include ePortfolio, Foliotek, LiveText, TaskStream, Tk20, TrueOutcomes, Blackboard Portfolio Platform and Open Source System (Sweat-Guy & Buzzetto-More, 2007)

However, there are some challenges in implementing a portfolio assessment. The first challenge for teachers is the demand on the teacher's time (Kim & Yazdian, 2014). In order to know the actual strengths and weaknesses of students, teachers have to spend a considerable amount of time to go through entries in student learning portfolios, which can be hard for those who are extremely busy and have no one to support them. The second challenge might be the different expectations from the school administrators (Kim & Yazdian, 2014) who often want evidence of instructional effectiveness like test scores or charts. Finally, it is quite costly to design a portfolio assessment (Kim & Yazdian, 2014; Spalding, 2000). There is minimal evidence to demonstrate that teachers truly engage in professional conversations with students personally.

Even though limited studies have been conducted on how to use portfolio assessment in accounting education, there is clear evidence portfolios are well received by accounting students. Slater (1996) demonstrated that portfolios enable students to better absorb learning content and apply their understanding comprehensively and creatively. In fact, accounting students who engaged with the portfolio assessment found this type of assessment beneficial in terms of critical and creative thought (Samkin & Francis, 2008). Besides, research findings from Watty, Jackson, and Yu (2010) also revealed that a majority of accounting students indicate their preference for portfolio assessment. Samkin and Francis (2008) implemented portfolio assessment into an accounting course and they incorporated the assessment of various skills: reflection, meta-cognition, and critical and creative thinking. The portfolios were made up of personal journals, classroom assessment techniques, feedback form, one-minute paper, Know-what-learn, free-writing, mini cases with a summary, and reflection.

Reflective Journals

As previously mentioned, students have been predominantly driven by traditional assessment tools such as essays, end-of-term examinations, research reports, and so forth, which are all set by their teachers. Students try to learn concepts and theories which are needed to pass the assessment, while they are not aware of the gaps between their current knowledge and the need to pursue different learning goals or new information for future professional life (Phelps, 2005). Reflective journals are designated to provide students opportunities to reflect on their own experience and self-evaluation in order that they might see what could be improved and how to improve in practice (Tang, 2002; Tiwari & Tang, 2003). Specifically, reflective journals demonstrate students' content knowledge, skills, attitudes, integration of scientific theories with practice, professional judgments, and reflections among other things.

Reflective journals have been used effectively in many professional education programs and play an essential part of students' learning progress. Tang (2002) asserts that the most important advantage of reflective diaries is that reflective diaries provide students (on a postgraduate education course) opportunities to think about what they have learnt, understand the relation between the theories and concepts to their teaching professional, evaluate their teaching practice and plan for future improvement. Students can be allocated into three categories: non-reflector, reflector, and critical reflector to illustrate various levels of reflective thinking (Wong, Kember, Chung, & Yan, 1995)

Bisman (2011) conducted a study relating to the emerging use of reflective journals in accounting. The result revealed that reflective journals made students proactive in the learning process, being aware of their learning curve and being more engaged with learning materials.

On the other hand, Woodward (1998), declared that, besides the obvious advantages of using reflective journals in authentic assessment in professional education, there were a number of issues which should be raised such as the need for a standardized framework of criteria and goals for evaluating journals, lack of guidance for students to demonstrate their knowledge in a correct situation, and many more. These issues lead to the necessity of considering a proper framework to apply reflective journals properly and effectively in professional education, particularly in accounting education.

Presentations - Including Video Presentations

Research posits that accounting students are likely to have a higher degree of oral communication apprehension than their peers (Simons, Higgins, & Lowe, 1995). Furthermore, studies have shown that employers and professional bodies look for novice accounting practitioners with strong communication skills (Bolt-Lee & Foster, 2003; Ulinski & O'callaghan, 2002). There are also studies which contend that oral presentation skills are critical as they allow students to exhibit greater level of cognitive thinking and development (Ulinski & O'callaghan, 2002; Weldy & Icenogle, 1997). Thus, the assessment of oral presentation is crucial for the development of work readiness in graduates (Cabellero & Walker, 2010).

Oral assessments are crucial for a balanced approach to learning and teaching (Birenbaum, 1996) and constitute an authentic mode of assessment (Terwilliger, 1997). There are many forms of oral assessments which could be utilized (Joughin, 2010), whilst some might be appropriate to peer assessment (De Grez, Valcke, & Roozen, 2012; Magin & Helmore, 2001; Van Zundert, Sluijsmans, & Van Merriënboer, 2010), others might be more appropriate to a blended learning environment (Heiman et al., 2012). Additionally, if being utilized as a process of collegial group work, oral assessments might create a beneficial effect on the learning experience and engagement of first year student (Nash, Crimmins, & Oprescu, 2016). Therefore, it is important to develop presentation skills in the initial stages of university experience.

In terms of peer assessment, Falchikov (2013) postulates that the involvement of students in assessing presentation skills is tremendously valuable in cultivating self-regulation skills. It demands students to have an analysis of their own behavior and a clear understanding of the nature of quality criteria. Several studies prove that the use of peer assessments improves presentation performance (Bourhis & Allen, 1998; Cheng & Warren, 2005; Kerby & Romine, 2009; Topping, 1998). An oral presentation rubric with pre-defined criteria is typically formulated to assess presentation performance (Ammons & Mills, 2005). Kerby and Romine (2009) listed several methods used to assess oral communication skills of accounting students, and one of them was self and peer assessment. Using a case study integrating oral communication across accounting courses, students were expected to individually present for 15-20 minutes on a topic relating to an earlier accounting class. The presentation was video recorded and the peers' feedback and comments were shared with the presenter. The defined criteria were then rated on 3-point Likert scale to determine the quality of the presentation (Kerby & Romine, 2009). Another approach is the use of technology, such as PowerPoint slides first presenting to their classmates and later to practicing teachers during a professional development workshop (MacEntee & Wells, 2005).

Blended learning, where online activities are combined with traditional face-to-face learning, is proven to be more successful than face-to-face learning alone (Heiman et al., 2012). Accounting professors are already assigning students with video tasks or projects, the evidence being an increase in their availability online. Students from University of Nevada (UNLV) conducted a group video project on interviewing accounting experts about employment opportunities. Others at Instituto Tecnologico Autonomo de Mexico (ITAM) documented in video form their on-site visits to big corporations such as HSBC, KPMG, and IBM their findings on corporate accounting practices, as well as reporting on the attainment of student's networking skills (Holtzblatt & Tschakert, 2011). According to S. K. L. Riley (2008), virtual worlds provide a mechanism to incorporate student-centered learning and experiential and constructivist practices into the classroom.

The assessment of video presentations does not necessarily require interviews with experts. It can portray student participation in video projects. Students at Texas A&M University had an assignment in which they role-played and conducted a country study presentation based on situations, concepts, and characters in association with International Accounting. The video was graded by the lecturer and evaluated by peers for its educational merit, creativity, originality, humor, and technical accuracy (Holtzblatt & Tschakert, 2011). In a Managerial Accounting class at California State University, students use Youtube together with other online sources of information to make a video presentation which is viewed by their lecturer as a member of the group (Jones, 2012). Since videos can be easily shared online, students tend to spend a lot of time on filming and editing to make it attractive. Thus, students soon learn that creating a good video is a process that involves many skills such as project management, research, representation, and presentation skills (Holtzblatt & Tschakert, 2011).

Work Integrated Learning (WIL)

Contemporary views of tertiary education advocate the work integrated learning (WIL) approach to programs, curriculums, assessment and delivery focus (Lombardi, 2008; Martin, Heppard, & Green, 2011; Patrick et al., 2008; Veillard, 2012). Undoubtedly, a meaningful and authentic learning experi-

ence is closely associated with real-life experience (Patrick et al., 2008); however, there is clear a difference between the work of creating and promoting the real-life experience with the task of assessing and indicating the learning outcomes of students through authentic learning tasks (De Bruijn & Leeman, 2011). From a student's point of view, the term "authenticity" pertains to the learning experience and endeavors to reflect the achievement of that professional experience (Iverson, Lewis, & Talbot, 2008). Furthermore, Gulikers, Kester, Kirschner, and Bastiaens (2008) claim that students' learning could be influenced by two factors: their perception of authentic assessment and the association of this authenticity to the real-world practice.

Studies have shown that the authenticity in WIL learning tasks can be found within the academic and professional context (Patrick et al., 2008; Welch, Vo-Tran, Pittayachawan, & Reynolds, 2012). To encourage ready-to-work and engaged graduates, curriculums are concentrated on the establishment and development of authentically assessing tasks reflecting WIL within the educational sector. Even though research has scrutinized detailed illustrations of assessment tasks as illustrations of WIL's authenticity (Koh, Tan, & Ng, 2012; Mackaway, Winchester-Seeto, Coulson, & Harvey, 2011; McNamara, Larkin, & Beatson, 2009; Staehr, Martin, & Chan, 2014; Welch et al., 2012), little is known about the adoption of authentic assessment in curriculums. Iverson et al. (2008) suggested a framework for assessing the authenticity of instructional tasks utilized amongst educational programs. According to their study, the theoretical codes compiled from the numerous studies were formed with practical activities which framed the foundation of the instructional task framework. The codes are related to implementation, self-reflection, quality of the task and the environment which indicated the outcomes of students and ultimately the value of the learning experience.

Although work-integrated learning is not a new concept, there is growing interest to make it become a key component of higher education (Manthorpe, 2012). The reality of providing a fully accessible WIL experience in real-world settings is inconceivable. In order to contextually resemble real-world settings and offer authentically meaningful learning contexts, WIL might comprise numerous forms and include various tasks (Venables & Tan, 2009). Whilst the forms of tasks can be different based on the discipline context, altogether WIL tasks necessitate the reflective and conscious linking of theory and practice. Examples of WIL tasks include capstone subjects, work-related presentation, problem-based learning, reflective journal, portfolio, role play, case studies, simulations, and virtual simulations (Bosco & Ferns, 2014). It is important to note that assigning a tag to an activity does not successfully lead to a highly authentic task simulating a real workplace environment (Fergusson, Allred, Dux, & Muianga, 2018). The WIL tasks should contain specific information and guidelines towards individual tasks to eventually provide students with knowledge of what is expected in the professional context.

In order to narrow the gap between the skills of new accounting graduates and skills needed by industry practitioners, the literature extensively explores WIL and incorporates best practices to develop an effective and authentic accounting WIL framework. Leong and Kavanagh (2013) proposed a three stage framework to effectively embed WIL into an undergraduate accounting program. In the Leong and Kavanagh study, first-year students have the chance to engage in work training in the form of a talk or career event by meeting industry speakers from notable accounting organizations and accounting-related professional bodies. For second year, students learn basic accounting concepts and communication skills through community or industry intensive accounting projects for a real client, which is supported and guided by the university. Final year students take a job placement for one semester to keep improving their skills, competencies and standards. The assessment of this final stage is a written report, reflective journals, a project proposal and a resume about their learning experience (Leong & Kavanagh, 2013).

However, embedding WIL into an accounting program encounters several issues. Abeysekera (2006) pointed out five specific issues experienced by accounting faculties, including curriculum alignment, hidden curriculum, the selection of students, the selection of a WIL program, and logistics. Amongst these, curriculum alignment, selection of students, and hidden curriculum should strenuously be con-

sidered. First, modifying the accounting curriculum to incorporate WIL tasks can affect those academics who put strong emphasis on contemplative and conceptual knowledge since WIL tasks principally provide process and system knowledge in practical situations that is not adequately captured in the curriculum (Abeysekera, 2006). Second, there are issues associated with the equitable selection of students since there might be a limited number of places in WIL-embedded programs compared to the number of accounting students (Abeysekera, 2006). Finally, the success of a WIL approach in a program is determined by the hidden curriculum in the faculty. A hidden curriculum is defined as the elements of socialization taking place in an educational context, but not included in the formal curriculum content (Margolis, 2001). Altering the hidden curriculum is a challenging proposition which needs to be approached cautiously since it is about adjusting the culture and philosophy of the accounting faculty (Abeysekera, 2006).

Self and Peer Assessments

In informal surveys with undergraduate students at the University of Notre Dame Australia, Kearney (2013) discerned three issues regarding the manner in which assessment occurs. First, the majority of students have the tendency not to read their own work before submitting it. Second, they do not see other students' assessment tasks and almost all of them work in isolation from their peers. Third, students do not have the chance to actively participate in designing assessments or defining criteria for those assessments. One way to address the quality of education is to make the assessment authentic and address the future needs of students. Thus, the idea of authentic assessment is the one that not only has the ability to gauge interest and enhance student learning but also meet the needs and skills required for success in the present day (Vu & Dall'Alba, 2008).

Self-assessment is deemed to be a meaningful learning activity (Andrade & Du, 2007; Hanrahan & Isaacs, 2001) which promotes a deep approach to learning (B. McDonald & Boud, 2003; Ozogul & Sullivan, 2009; Rivers, 2001). Self-assessment is co-defined by students and the lecturer by selecting certain criteria to evaluate the students' work and formulating judgments to a degree under which they met the criteria and standards (B. McDonald & Boud, 2003; Stallings & Tascoine, 1996). Additionally, self-assessment is a valuable aspect of lifelong learning as it encourages critical thinking and autonomous learning by developing metacognition, influence and capacity (Rivers, 2001; Tait-McCutcheon & Sherley, 2006)

Peer-assessment also plays a crucial role in the literature in regards to the assessment and assessment reformation (Boud, Cohen, & Sampson, 2014; Thomas, Martin, & Pleasants, 2011). According to Topping (2005), peer-assessment is defined as a setting under which students consider the quality, value, level, amount, or success of the output or the outcome of learning of their peers. Although Boud et al. (2014) caution against the judgements of students towards their peers' performance, they cannot deny the importance of peers' input in making assessment decisions. In a seminal study led by Falchikov (1986), students involved in peer-assessment not only said it was challenging but also acknowledged the development of their own critical thinking skills. Another study conducted by Bloxham and West (2004) pointed out that peer-assessment not only supported independent learning but also developed a consciousness about the criteria used on the assessment process. However, there are also pitfalls of peer-assessment in terms of concerns regarding size of classes, accuracy and efficacy (Boud et al., 2014; Ng & Earl, 2008; Taylor, 2008).

One example of the usage of self and peer-assessment is the authentic self and peer-assessment model developed by Kearney (2013). In this model, students are not only involved in implementing grading criteria for their tasks, but they are also included in the grading activities and giving comments to their peers. Students are randomly selected in pairs and provided two unnamed assignments. There are 20 minutes for them to read through the assignment and provide tentative marks on a scale of 5 from low to high. The students subsequently give inputs and explain their choice of mark with others, and together decide on the final grade. In this case, agreement is not necessary, but collaboration is required. The same process is repeated for the second assignment. Following the peer-

evaluation session, the students are given another 20 minutes to evaluate their own assignment according to the marking criteria. Since they evaluate themselves against the criteria in relation to their peers' work, students have the opportunity to enhance their metacognition (Ozogul & Sullivan, 2009; Rivers, 2001).

REPORTS

Lack of writing skills has been cited frequently as the major deficiency of accounting graduates (Williams, 1988). Apart from aforementioned presentation skills, another concern expressed by both accounting practitioners and educators is that accounting graduates cannot write effectively (Ingram & Frazier, 1980). From accounting students' perspective, writing skills are not crucial for their career (Rebele, 1985) since accounting is genuinely a number-crunching occupation (Inman, Wenzler, & Wickert, 1989). G. S. May and Arevalo (1983) suggested modification of existing accounting courses to include written assignments, including formal and informal reports on various accounting topics in order to give accounting students greater mastery over these skills.

This approach takes into consideration the limitations of time in any course. It is so heavy for accounting students to take additional accounting communication courses. Moreover, it is unreasonable to expect accounting faculty to possess the needed expertise to teach communication skills (G. S. May & Arevalo, 1983). Thus, written reports have to be integrated as part of the accounting curriculum. Ingram and Frazier (1980) added that reports should be designed to help accounting students consider themselves as professional accountants encountering real-world communication issues rather than artificial and classroom-based tasks.

Two modes of authentic assessment in the form of reports can be used to improve accounting students' writing skills as well as involve them in the analysis and research of real-life accounting problems. The first mode is scenarios requiring learners to notice key factors in a specified situation, elucidate them by means of theoretical concepts of the course, and plan, write and revise a report for an intended audience for a prescribed purpose (Herrington, Oliver, & Reeves, 2003; Wiggins, 1992).

Another case study include the role-playing of students on the positions of financial vice-president, audit partner, and director of internal auditing in order to write business report (Mohrweis, 1991). According to Mohrweis (1991), written reports not only enhance accounting students' writing skills but also enhance the capabilities to display higher order analytical thinking as part of their written communication. The second mode is to design a solution to a problem in workplace settings and present the solution to an intended audience (Herrington et al., 2003; Wiggins & Pettibone, 1995). A typical assignment for this purpose would be one to analyze a company's financial data and to write a report detailing the findings (C. B. May & May, 2014). This kind of assignment is a practical learning task because it requires students to apply theories they have been studying to real-world contexts.

SUMMARY OF FINDINGS

The aim of the paper was to arm those aspiring to design or simply understand authentic assessment with a toolkit to be used when designing authentic assessment for their own courses. This toolkit was compiled with accounting educator in mind, however, other business-related courses may also benefit from this toolkit. Figure 1 shows the examples of authentic assessments that may be applied to accounting courses. It also gives a brief description of what skills educators should expect their students to develop through the given method of assessment.

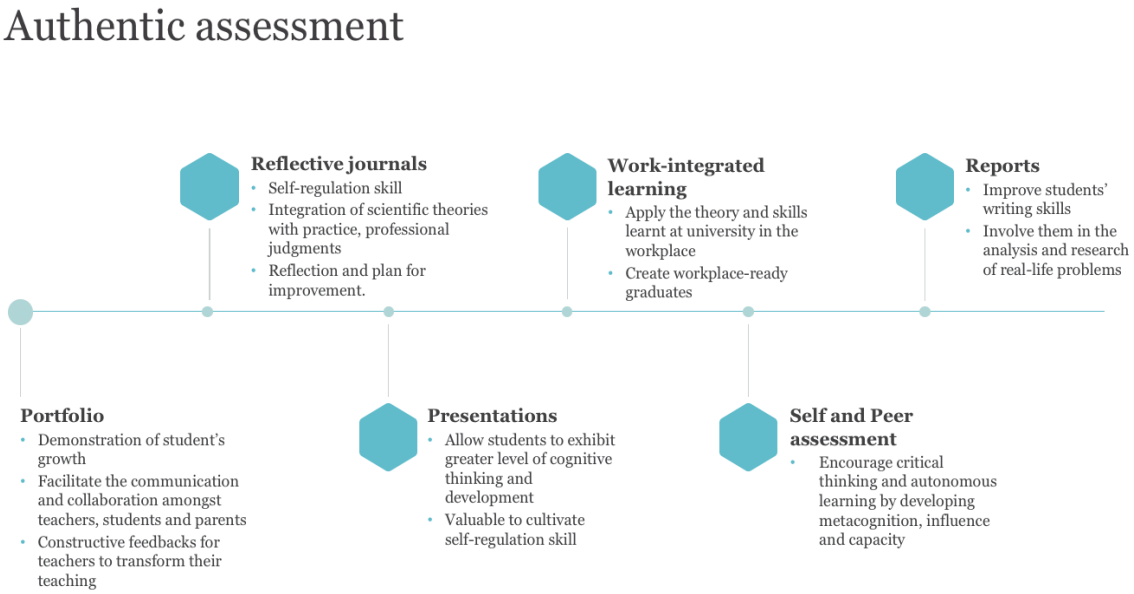

Figure 1: A Toolkit for accounting educators aspiring to design and implement authentic assessment

As discussed earlier, Figure 1 provides a toolkit for accounting educators to give them an overview of the options available in terms authentic assessment. Table 1 on the other hand complements Figure 1 by showing a summary of findings. It highlights the key themes and key words associated with the crucial concepts related to authentic assessment and details of further reading on the concepts. This will be useful for those who wish to delve deeper into the topics as it gives them a starting point in terms of which articles they should read and what to expect from those readings. The key themes are authentic assessment, portfolios, reflective journals, presentations and work integrated learning.

Table 1 - Table of findings from the literature

Theme	Key Contributions	Author
Authentic assessment	Assessment; authentic learning activity and design; authentic assessment framework	Ashford-Rowe, K., Herrington, J. & Brown, C. 2014. Establishing the Critical Elements That Determine Authentic Assessment. Assessment & Evaluation in Higher Education, 39, 205-222.
Authentic assessment	Student learning; paired comparison; professional practice; case description; criterion situation	Gulikers, J. T., Bastiaens, T. J. & Kirschner, P. A. 2004. A Five-Dimensional Framework for Authentic Assessment. Educational technology research and development, 52, 67-86.
Authentic assessment	Essential characteristics of authentic assessment; situated learning; social context; authentic activity	Herrington, J. & Herrington, A. 1998. Authentic Assessment and Multimedia: How University Students Respond to a Model of Authentic Assessment. Higher Education Research & Development, 17, 305-322.

Theme	Key Contributions	Author
Authentic assessment	Alternative assessment, assessment models; authentic assessment; formative assessment; learning goals and objectives; learning outcomes; student writing; written and oral communication	Larkin, T. L. 2014. The Student Conference: A Model of Authentic Assessment. iJEP, 4, 36-46.
Authentic assessment	Authentic assessment; critical-creative thinking; meta-cognitive awareness	Pantiwati, Y. 2013. Authentic Assessment for Improving Cognitive Skill, Critical-Creative Thinking and Meta-Cognitive Awareness
Authentic assessment	Authentic assessment strategy; written and oral presentation; peer assessment	Wellington, P., Thomas, I., Powell, I. & Clarke, B. 2002. Authentic Assessment Applied to Engineering and Business Undergraduate Consulting Teams. International Journal of Engineering Education, 18, 168-179.
Portfolios	Attitude, Authentic assessment, Junior secondary schools, Learning, Portfolio assessment and Social studies	Adeyemi, B. 2015. The Efficacy of Authentic Assessment and Portfolio Assessment in the Learning of Social Studies in Junior Secondary Schools in Osun State, Nigeria. IFE PsychologIA: An International Journal, 23, 125-132.
Portfolios	Shared learning, writing instruction, Learning, Reading teachers, Collaborative learning, Curricula, Learning experiences, Writing tests	Bergeron, B. S., Wermuth, S. & Hammar, R. C. 1997. Initiating Portfolios through Shared Learning: Three Perspectives. The Reading Teacher, 50, 552-562.
Portfolios	E-porfolios; authentic program; institutional assessment; reflection skill; career-related learning	Chatham-Carpenter, A., Seawel, L. & Raschig, J. 2010. Avoiding the Pitfalls: Current Practices and Recommendations for Eportfolios in Higher Education. Journal of Educational Technology Systems, 38, 437-456.
Portfolios	Primary education; Student assessment; Authentic Learning	Chitpin, S. 2003. Authentic Assessment of Student Work: The Use of Portfolios. Change (Sydney, NSW), 6, 70.
Portfolios	Portfolio assessment; learning porfolio; quality teaching	Kim, Y. & Yazdian, L. S. 2014. Portfolio Assessment and Quality Teaching. Theory Into Practice, 53, 220-227.
Portfolios	Assessment as learning, assessment for learning, teaching, learning, and assessment of writing, portfolio assessment, EFL writing	Lam, R. 2016. Assessment as Learning: Examining a Cycle of Teaching, Learning, and Assessment of Writing in the Portfolio-Based Classroom. Studies in Higher Education, 41, 1900-1917.

Theme	Key Contributions	Author
Portfolios	Assessment, classroom assessment techniques, critical and creative thinking, deep approach to learning, learning portfolio, metacognition, reflection	Samkin, G. & Francis, G. 2008. Introducing a Learning Portfolio in an Undergraduate Financial Accounting Course. Accounting Education: an international journal, 17, 233-271.
Portfolios	Electronic portfolio; authentic assessment; e-portfolio platforms	Sweat-Guy, R. & Buzzetto-More, N. A. 2007. A Comparative Analysis of Common E-Portfolio Features and Available Platforms. Issues in Informing Science & Information Technology, 4.
Portfolios	Portfolio assessment; spontaneous collaborative learning	Tiwari, A. & Tang, C. 2003. From Process to Outcome: The Effect of Portfolio Assessment on Student Learning. Nurse Education Today, 23, 269-277.
Reflective Journals	Learning journal, reflective journal, assessment, postgraduate studies, accounting education	Bisman, J. 2011. Engaged Pedagogy: A Study of the Use of Reflective Journals in Accounting Education. Assessment & Evaluation in Higher Education, 36, 315-330.
Reflective Journals	Complexity-based approach; reflection; reflective journals; metacognitive	Phelps, R. 2005. The Potential of Reflective Journals in Studying Complexity'in Action'. Complicity: An International Journal of Complexity and Education, 2.
Reflective Journals	Reflection, reflective diaries, reflective learning	Tang, C. Reflective Diaries as a Means of Facilitating and Assessing Reflection. Quality conversations: Proceedings of the 29th HERDSA Annual Conference Perth, 2002. 7-10.
Reflective Journals	Student's reflection; reflective journals; written reflective journals; reflective thinking	Wong et al, 1995. Assessing the Level of Student Reflection from Reflective Journals. Journal of advanced nursing, 22, 48-57.
Reflective Journals	Reflective journalling portfolio assessment; pre-service education; reflective journals; portfolios	Woodward, H. 1998. Reflective Journals and Portfolios: Learning through Assessment. Assessment & Evaluation in Higher Education, 23, 415-423.
Presentations	Accounting education , Core Competency Framework , accounting education change , instructional strategy , education framework , accounting curriculum	Bolt-Lee, C. & Foster, S. 2003. The Core Competency Framework: A New Element in the Continuing Call for Accounting Education Change in the United States. Accounting Education, 12, 33-47.

Theme	Key Contributions	Author
Presentations	Work readiness; graduate employability; graduate recruitment; graduate selection; graduate assessment; transferable skills; graduate competencies.	Cabellero, C. L. & Walker, A. 2010. Work Readiness in Graduate Recruitment and Selection: A Review of Current Assessment Methods. Journal of teaching and learning for graduate employability, 1, 13-25.
Presentations	Assessment, oral presentation skills, peer assessment, self-assessment, student perception	De Grez, L., Valcke, M. & Roozen, I. 2012. How Effective Are Self-and Peer Assessment of Oral Presentation Skills Compared with Teachers' Assessments? Active Learning in Higher Education, 13, 129-142.
Presentations	Teaching with technology; Accounting education; Guest speakers; Online communication; Digital video technology	Holtzblatt, M. & Tschakert, N. 2011. Expanding Your Accounting Classroom with Digital Video Technology. Journal of Accounting Education, 29, 100-121.
Presentations	Accounting, Assessment, Communication, Oral presentations, Outcomes, Rubric	Kerby, D. & Romine, J. 2009. Develop Oral Presentation Skills through Accounting Curriculum Design and Course-Embedded Assessment. Journal of Education for Business, 85, 172-179.
Presentations	Technology, authentic learning, preservice teachers, inclusive education, constructivist learning	MacEntee, V. M. & Wells, S. J. The Use of Technology to Facilitate Authentic Learning. Proceedings of the 2005 Informing Science and iT Education Joint Conference, Flagstaff, Arizona, USA, June, 2005. 16-19.
Presentations	Public speaking, public speaking assessment, assessment anxiety	Nash, G., Crimmins, G. & Oprescu, F. 2016. If First-Year Students Are Afraid of Public Speaking Assessments What Can Teachers Do to Alleviate Such Anxiety? Assessment & Evaluation in Higher Education, 41, 586-600.
Presentations	Integrated business simulation, assurance of learning, leadership rotation, rubrics, Pathways Commission, business plan, unstructured problem-solving, tolerance for ambiguity	Riley Jr, R. A., Cadotte, E. R., Bonney, L. & MacGuire, C. 2013. Using a Business Simulation to Enhance Accounting Education. Issues in Accounting Education, 28, 801-822.
Presentations	Communication skills; writing skills; oral communication skills; accounting majors	Simons, K., Higgins, M. & Lowe, D. 1995. A Profile of Communication Apprehension in Accounting Majors: Implications for Teaching and Curriculum Revision. Journal of Accounting Education, 13, 159-176.

Theme	Key Contributions	Author
Presentations	Employers' perceptions, oral communication skills; MBA	Ulinski, M. & O'callaghan, S. 2002. A Comparison of Mba Students' and Employers' Perceptions of the Value of Oral Communication Skills for Employment. Journal of Education for Business, 77, 193-197.
Presentations	Oral communications; problem-solving; self- motivation; entry-level positions	Weldy, T. G. & Icenogle, M. L. 1997. A Managerial Perspective: Oral Communi Cation Competency Is Most Important for Business Students in the Workplace Jeanne D. Maes. The Journal of Business Communication (1973), 34, 67-80.
Work integrated learning	Accounting, Australia, curriculum, experiential learning, work-based learning, work-integrated learning	Abeysekera, I. 2006. Issues Relating to Designing a Work-Integrated Learning (Wil) Program in an Undergraduate Accounting Degree Program and Its Implications for the Curriculum.
Work integrated learning	Integrated Curriculum, Performance Based Assessment, Integrated Activities, Learning Activities, Workplace Learning, Curriculum Development, Higher Education, Foreign Countries, Qualitative Research, Statistical Analysis	Bosco, A. M. & Ferns, S. 2014. Embedding of Authentic Assessment in Work-Integrated Learning Curriculum. Asia-Pacific Journal of Cooperative Education, 15, 281-290.
Work integrated learning	Learning activities; teacher roles; vocational education; competence-based education; authentic learning; self-directed learning	De Bruijn, E. & Leeman, Y. 2011. Authentic and Self-Directed Learning in Vocational Education: Challenges to Vocational Educators. Teaching and Teacher Education, 27, 694-702.
Work integrated learning	Work integrated learning; framework; employability; skills; attributes; accounting	Leong, R. & Kavanagh, M. 2013. A Work Integrated Learning (WIL) Framework to Develop Graduate Skills and Attributes in an Australian University's Accounting Program. Asia-Pacific Journal of Cooperative Education, 14, 1-14.
Work integrated learning	International business education; Pedagogy; International business	Martin, J. A., Heppard, K. A. & Green, S. G. 2011. Taking International Business Education Programs and Pedagogy to New Heights: Fundamental Questions for Educators and Students. Business Horizons, 54, 355-363.

Theme	Key Contributions	Author
Work integrated learning	HERN , work integrated learning, work placement, assessment of student capability, Legal education	McNamara, J., Larkin, I. & Beatson, A. Poster Presentations: Authentic Assessment of Work Integrated Learning. ATN Assessment Conference 2009: Assessment in Different Dimensions, 2009. 253.
Work integrated learning	Work integrated learning (WIL), IT industry, reflective practice	Staehr, L., Martin, M. & Chan, K. 2014. A Multi-Pronged Approach to Work Integrated Learning for It Students. J. Information Technology Education: Innovations in Practice, 13, 1-11.
Work integrated learning	Transfer of learning; tertiary education; work-integrated learning; boundary crossing; connectivity; transition between learning contexts	Veillard, L. 2012. Transfer of Learning as a Specific Case of Transition between Learning Contexts in a French Work-Integrated Learning Programme. Vocations and Learning, 1-26.
Work integrated learning	IT education, computing education, learning in the workplace, internship	Venables, A. & Tan, G. 2009. Realizing Learning in the Workplace in an Undergraduate It Program. Journal of Information Technology Education: Innovations in Practice, 8.
Work integrated learning	WIL; cross-cultural study; cross-discipline experience; online communication, simulation	Welch, B., Vo-Tran, H., Pittayachawan, S. & Reynolds, S. 2012. Crossing Borders: Evaluating a Work Integrated Learning Project Involving Australian and Vietnamese Students. Australian Academic & Research Libraries, 43, 120-134.
Self and Peer assessments	Self-assessment, educational psychology	Andrade, H. & Du, Y. 2007. Student Responses to Criteria-Referenced Self-Assessment. Assessment & evaluation in higher education, 32, 159-181.
Self and Peer assessments	Authentic assessment Seafarer education and training Rubrics Validity Reliability	Ghosh, S., Bowles, M., Ranmuthugala, D. & Brooks, B. 2016. Authentic Assessment in Seafarer Education: Using Literature Review to Investigate Its Validity and Reliability through Rubrics. WMU Journal of Maritime Affairs, 15, 317-336.
Self and Peer assessments	Self-assessment, peer-assessment, sustainable assessment, engagement	Kearney, S. 2013. Improving Engagement: The Use of 'Authentic Self-and Peer-Assessment for Learning'to Enhance the Student Learning Experience. Assessment & Evaluation in Higher Education, 38, 875-891.

Theme	Key Contributions	Author
Self and Peer assessments	Self-efficacy; learning goal orientation; self-estimates	Ng, J. R. & Earl, J. K. 2008. Accuracy in Self-Assessment: The Role of Ability, Feedback, Self-Efficacy and Goal Orientation. Australian Journal of Career Development, 17, 39-50.
Self and Peer assessments	Evaluation; formative assessment; Peer assessment; Self-assessment	Ozogul, G. & Sullivan, H. 2009. Student Performance and Attitudes under Formative Evaluation by Teacher, Self and Peer Evaluators. Educational Technology Research and Development, 57, 393-410.
Self and Peer assessments	Future learning, self-assessment, peer-assessment	Thomas, G., Martin, D. & Pleasants, K. 2011. Using Self-and Peer-Assessment to Enhance Students' Future-Learning in Higher Education. Journal of University Teaching & Learning Practice, 8, 5.
Self and Peer assessments	Peer learning trends; Information technology; peer tutoring; cooperative learning; sustainability	Topping, K. J. 2005. Trends in Peer Learning. Educational psychology, 25, 631-645.
Self and Peer assessments	Peer assessment; Development of peer assessment skills; Attitudes towards peer assessment; Training of peer assessment skills	Van Zundert, M., Sluijsmans, D. & Van Merriënboer, J. 2010. Effective Peer Assessment Processes: Research Findings and Future Directions. Learning and Instruction, 20, 270-279.
Reports	On-the-job technical writing tasks, reporting, accounting curriculum	May, G. S. & Arevalo, C. 1983. Integrating Effective Writing Skills in the Accounting Curriculum. Journal of accounting Education, 1, 119-126.
Reports	Accounting report, presentation skills, reporting	Ingram, R. W. & Frazier, C. 1980. Developing Communications Skills for the Accounting Profession, Amer Accounting Assn.

CONCLUSION

This paper has covered the concepts and definition of authentic assessment within accounting programs in tertiary education through an in-depth systematic literature review. Specifically, the paper ascertained the critical elements of authentic assessment that facilitate the design and assessment of complex and authentic tasks. Its purpose was to formulate an effective framework for authentic assessment task design, useful for those new to authentic assessments and those already using authentic assessments seeking to redevelop their assessments.

In the context of authentic assessments, the use of rubrics and fundamental characteristics of problem-based learning and critical thinking skills were scrutinized. Furthermore, various assessment tools such as portfolios, reflective journals, video presentations, work-integrated learning, reports, and self and peer assessments were presented along with practical examples to help educational in-

structors select the most useful device in accounting education. These are believed to provide further evidence of the success of authentic assessment in improving teaching and learning outcomes. Therein lays the significance of this paper.

Many accounting instructors and educators today have trouble in cultivating best practices for their assessment (Calderon, Green, & Harkness, 2005; Martell & Calderon, 2005). As many accounting educators may not be familiar with rubrics (Anderson & Mohrweis, 2008), the paper demonstrated the benefits of rubrics and how this toolbox can be utilized effectively to assess and improve the learners' capabilities in writing, presentation and problem-solving skills.

Over the years, the discussion about assessment has changed prominently, especially within tertiary education. There is an increased focus on teaching and assessing the development of a wider collection of skills, usually denoted as graduate attributes. In this regard, the abilities to offer learners the requisite skills and competencies which are related to work settings, depends on the development and assessment of those skills in a more meaningful and authentic means. Meyers and Nulty (2009) emphasized maximizing the quality of student learning outcomes and called for better designed courses as a means to offering quality materials and ways of teaching and experiences and tasks which are authentic, relevant and applicable to real-world settings.

Increasing simulated work-integrated learning experiences for accounting students and incorporating these experiences into authentic assessment tasks will improve graduates' awareness as to how their degree program helped them develop capabilities and attributes that are relevant for the workplace (Oliver et al, 2011), thus, making sure accounting educators produce accounting graduates who are confident, work-ready, and equipped with the critical skills for success in the professional world.

Future studies may focus on the perceptions of accounting lecturers to understand the benefits and challenges of authentic assessment design and implementation. It would also be interesting to seek the views of accounting students and employers on whether authentic assessments really improve graduate attributes and outcomes.

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