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Assessment Re-Think: Income-Generating and Industry-Based Assessments

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ABSTRACT

Assessments are the fundamental media between students and educators. This paper aims to evaluate how to create assessments, how students learn from them, and how to link them to the industry and entrepreneurism. The implementation plan postulates how students can generate income from income-generation assessments or business innovation assessments. In this paper, we discuss the involvement of modern industry in assessment. We examine evidence from approximately 100 assessments detailed in 32 subject outlines. We employ a descriptive, pragmatic research methodology to consider whether they can be aligned more with industry expectations and expected duties. We propose a framework to connect with industry and create student income-generating projects. This proposed income-generating assessments framework recommended industry-based assessments with which students can not only earn marks towards a subject but potentially earn an income based on it. This paper extends the idea of peer learning to expert or industry learning: an approach that did not employ in higher education. Our approach supports educators in keeping the assessment up-to-date, enabling students to add more value to their learning of industry products and procedures. Students can directly contribute to the product and procedures and learn from the strategies actively employed in the workplace.

INTRODUCTION

From an educator's perspective, many factors determine assessment success, including how it is prepared, taught, and moderated. From a student perspective, assessments are a learning opportunity and a must-do to complete the subject. From an external perspective, assessments are part of an approval process. There are many ways to teach and deliver a class. Many teaching pedagogy (Loughran, 2013), (Waite, 2017) and assessment improvements (Sparks, Katz, & Beile, 2016), (Bryan & Clegg, 2019), (Murphy, 2006) are reported regularly in the literature. Sometimes teaching is combined with industry engagement and recognition (Lee, 2008). Assessments have two main perspectives to consider, the educator and the student.

Educator perspective - Assessments are considered a key element of learning and teaching. Also, they are meant to be moderated and reviewed at the peer level by the educators. Moderators can be internal or external to the organization. External moderators bring independence from the institution

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and a focus on providing confidence that corrupt practices like favoritism or bribery will be suppressed or detected (Nabaho & Turyasingura, 2019), (de Souza-Daw, 2021). External accreditors often look only at a small sample of students' works. Academics with similar expertise examine the assessments and make recommendations and deliver approvals. An analysis of assessments rarely contemplates the degree of industry involvement. Unfortunately, it did not allow education tools as critical as assessments to be the best they could be.

Student perspective - Students often see assessments as the only thing that matters in a subject (Brown & Knight, 1994), (Ramsden, 1992), (Leathwood, 2005). If the material does not assess, it becomes optional. With this view, there is no one way students can fully experience the subject. They can easily miss out on key learning activities such as demonstrations and tours, not to mention key knowledge and practical experience.

Furthermore, students could and should be engaged in a much richer learning experience (Price, O'Donovan, Rust, & Carroll, 2008). It used the paper reviews how Bloom's taxonomy and factors of good assessments. Follow by an analysis of how a student learns from an assessment is examined. Finally, it discussed the industry and employment; we further analyzed 32 subject outlines in detail and their 100+ assessments identifying the industry and entrepreneur content. Our proposed three factors income generating assessment framework combines the knowledge of industry and entrepreneurism that may minimize the graduate-industry gap. Based on the entrepreneur and industry findings, we made recommendations to help lecturers keep assessments up-to-date.

Background and Current Situation

Nowadays, students have competing demands, including employment, family obligations, hobbies, and friends. Combined with lowering expectations (Côté & Allahar, 2011), (Clarke, 1998), (Giroux, 2012) and putting pressure on staff and students to teach not only the subject but any pre-requisite as well. Creating an unprecedented time-poor student in a fast-changing era. As a result, student assessment's priority has fallen; no longer is it considered an opportunity to strive for excellence. In an attempt to motivate and encourage students, assessments have changed from traditional; prose essays, case studies, and laboratory reports to non-traditional; blogs, letters, and e-posters to keep up to date with the changing times (Leedham, 2009).

Bloom's Taxonomy Variations

Bloom's taxonomy (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956) has been instrumental in describing educational activities since being developed in the 1940s and 1950s. It has been used extensively in Higher education to describe learning objectives, assessments, and more. There have been many publications on its applications (Rahman & Manaf, 2017), (Mulcare & Shwedel, 2017), (Amin & Mirza, 2020). It suggested several improvements, probably the most influential are the "revised bloom's taxonomy" (Anderson et al., 2001) and the more modernized verbs in the digitalized Bloom (Churches, 2009). Although, there has been substantial criticism of the taxonomy (Case, 2013), (Seaman, 2011), (Pring, 1971), from excessive use of high-order verbs that do not match the activity to criticism of learning in levels rather than mixing up the lower and higher order learning. Like others, we prefer to condense the seven Bloom's levels into three levels; understand and memorization, apply/build and implement, and design and evaluate. Alternatively, put easy, medium, and hard for Bloom's levels (1,2), (3,4,5), and (6,7), respectively.

Aspects of a good assessment

Students often remember their assessments, particularly the ones that help them learn and develop new skills they might rely on in the industry. Assessments in arbitrary terms should cover the breadth of the subjects (Bloxham & Boyd, 2007). An assessment should cover as many learning outcomes as possible and have clear expectations. Learning activities can even be entertaining, such as escape rooms (Ross & de Souza-Daw, 2021). We argued that few learning activities would meet industry expectations and failed to prepare students exiting with a recognized qualification adequately. There has been significant research on the graduate-to-industry gap (Chida & Brown, 2011), (Dunne & Rawlins, 2000), (Junejo, Memon, & Mohammad, 2018), (Wohlfart & Hovemann, 2019). Educators, as content experts, should be able to create a good assessment that bridges the gap between the industry and education. Likewise, an assessment should cater to strong students and encourage them to own their assessments and push their boundaries or expectations. Good assessments should also cater to weak students, enabling them to learn and pass without being overtly critical of one subject matter. Assessments should also enable credit where credit is due, particularly in group work. Finally, good assessments motivate students to finish and submit on time, enabling them to see a career that justifies their hard work.

Moreover, the assessment should engage and generate interest in the industry field. Assignments are arguably the most critical part of a subject. If done properly, they prepare students for an industry with relevant work-related assessments comprising technical, teamwork, and professional development. If done poorly, they achieve little more than checking a box for accreditation (if that). Typically, they are mediocre, with some attempts at making things relevant but, in far too many cases failing to prepare students appropriately or even adequately for the intensely competitive workforce.

Everyone has something to teach – Peer Learning

Peer learning is one such pedagogy (Boud, Cohen, & Sampson, 2001), (Hilsdon, 2014) and (Topping, 2005). It relies on students interacting with each other and subsequently learning from each other and learning together. However, peer learning is limited to the highest knowledge of an individual in the group. Also, it minimizes sub-optimal solutions if learners allow input from experts to avoid group thinking (He & Adar, 2016). Driscoll (Driscoll & Driscoll, 2013) discusses the notion that everyone has something to teach. It is not new and echoes throughout our personal learning experiences. We can use this philosophy in how we learn, or rather should learn, throughout our degree.

We argue that students may first learn from themselves, looking inwards to solve problems by reading textbooks, going through work examples, and then solving new problems. Secondly, we learn from peers and other students via group work. Thirdly, we learn from more experienced practitioners (professionals with established related works). We found illustrations of this in the different assessments described in the subject outlines we reviewed. It could include learning from case studies and adding features. Finally, as we progress and mature our skills, we can reach the fourth level of learning – learning from experts.

Highly skilled professionals that have unique experience in the field with cutting-edge equipment and data. The expert might be a principal researcher or a privileged position, e.g., Chief Health Officer. We have tried to categorize this phenomenon in **Figure 1.** We argue that when you are an expert, you repeat the cycle of learning from yourself, peers, and experienced practitioners. If we fail to solve a problem at any level, we should escalate to the next level and conclude, whether that means solving the problem or accepting that it cannot, at least currently, be solved.

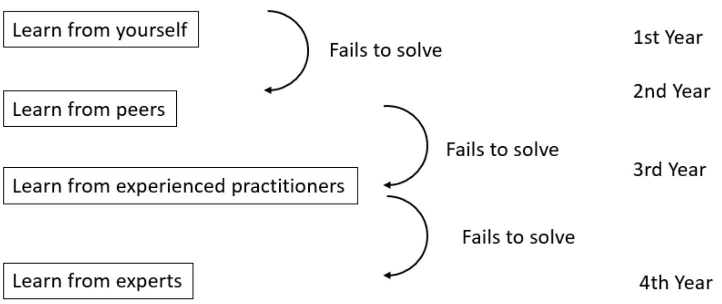

Figure 1 Learning from others cycle

As in **Figure 1.** we postulate from our observations that we spend more time learning from ourselves in the first year, followed by more group work and working with others in the second year. In the third year, we work with experienced practitioners such as alongside industry partners in capstone projects. Finally, we learned from expert researchers in our fourth year by studying published literature for honors projects.

Learn, earn, and learn cycle

Higher Education providers have been struggling to understand and compete with recent developments such as MOOCS (LeCounte & Johnson, 2015), micro-credentials (Wheelahan & Moodie, 2021), and industry certifications (Hitchcock, 2005). Not to mention a growing trend of students working more hours, increased fees, and mounting regulations that education institutions (Trout, 1997), (Beblav´y, Teteryatnikova, & Thum-Thysen, 2015) are grappling with in creating their identity.

Higher education institutions traditionally rely on customers making a very large investment, typically only once. However, the once-off customers have led to numerous challenges in the system. For example, no or limited quality control; education providers not relying on returning students for revenue results in students being mistreated or disregarded as the next wave of incoming students creates income. In addition, it can easily lead to slips in policies and corrected procedures until years later by a government accreditor.

The students' learn-earn-learn cycle breaks the reliance of education providers on convincing a student to study for 3-4 years to convince a student to recommit to the provider per semester. This forces all aspects of a student education experience to be refined and in an always improvement cycle, rather than only being on best behavior during recruitment. Other proposals that focus on completing one semester at a time include one semester to complete an undergraduate certificate, another semester to complete a diploma, and another semester to complete an advanced diploma before another 1.5 years to complete a degree. We focus on providing particular subjects that strongly relate to a professional responsibility for a job, as per **Figure 2**, not trying to train them in an aging method of every aspect a student may encounter for a career, as per **Figure 3**, such as a full degree. However, preparing students for a career rather than a job is still the fundamental goal of degree graduates, particularly with an accord such as the Washington, Dublin, or Seoul accord. Although, this is not necessarily what the industry wants in a fresh graduate or a career graduate. As many will never enter management or executives level at all. Therefore, students must understand which subjects will lead to which job with a degree. Thus, they complete the necessary skills to enter a job market and return to education when they can see real opportunities in the employment market to move vertically or sideways. Potentially, adding only the minimum amount of subjects to do that.

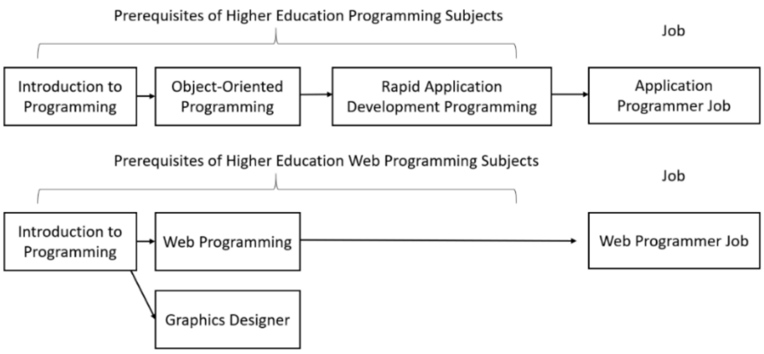

Figure 2 Pre-requisites subjects to get a relevant job

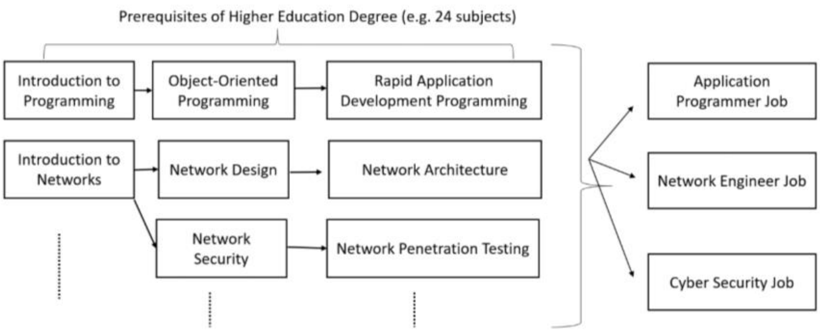

Figure 3 Traditional Course Structure to get any job in a relevant field

Learn by Doing

Learn by doing (Breen et al., 2018) (Goggins, 2012) is a pedagogy synonymous with industry practitioners with common notions of learning on the job and just-in-time education. Learning as you go is critical to any career, given ever-changing technologies, policies, and laws. It is very common to find listed in job advertisements a desire to seek professional development opportunities. Employers often give time to employees to develop their skills. It is common in repetitive tasks (day-to-day, entry-medium level employees). The more complex problem and project-based learnings are more often associated with once-off experiences and research activities.

There is a wide range of activities undergraduates can perform using commercial-off-the-shelf products (Agrawal, Agrawal, & Taylor, 2016). Increasingly too, these commercial products can be complemented with open-source technologies. As a result, students from various disciplines can perform various tasks. Those are building a "food computer" or rooftop gardens for agriculture students; analyzing big data sets for data analysis students; building devices and gadgets for engineering graduates using makers communities offline at libraries and online such as with the free, open-source Thingiverse (Thingiverse .com) and Instructables (www.instructables.com). This learning style from videos and free material largely grew in popularity from home cooking and exercise videos decades ago and has now branched off into other fields.

Learning from the industry from the start, not as an afterthought

Table 1 found typical examples of assessments. Peer assessments are very common (Dochy, Segers, & Sluijsmans, 1999) and often used in project work in higher education. However, assessments themselves are commonly toy-based or have few practical applications. The assessments can demonstrate learning outcomes but often do not have strong industry applications. Similarly, it presented tutorial information to solve pre-defined problems that repeat a demonstration rather than requiring solutions through designing and implementing a real-world problem. In other words, most tutorials do not encourage imagination and practical application.

Table 1. Mapped Learning Opportunities for Assessments

Learning Opportunity	Example
Learning from Peers in class	Work together on a case study assignment
Learning from toy example	Work to produce a "hello" world program. That has no real application in the real world.
Learning Maths to solve pre-defined problems	Learn about pre-defined problems and how to solve them. No attempt at trying to apply mathematics to unknown problems.

Industry learning creates opportunities for students to learn from industry professionals rather than education peers. Table 2 presents industry learning examples. Access to industry professionals is often difficult to achieve on a routine basis; however, access to their work is not. We can follow their work, their professional output, and their style of solving solutions. The open-source community has particularly enhanced it. We can see not only the product but how the product has been designed, specifications files, product manufacturing details, to some degree, the costs, and insights into best trade practices and technologies.

Learning opportunities are from the wealth of information in industry standards, patents, open standards, datasheets, white papers, and more. Unfortunately, so few assessments use this easy-to-access information.

Lastly, mathematics, while at the core of science and technology education and also important to the social sciences and humanities, is nearly always taught to solve pre-defined problems. Not designing a solution to a real-world problem as expected in the industry.

Table 2. Mapped Learning Styles to Industry Assessments

Learning Styles	Examples
Learning from Peers in the Industry	Group work to modify code on an open-source well developed
Learning from an industry standard	Download an open standard. Read and implement the standard.
Learning to solve real-life problems with mathematics	Solve EMI interfaces using first principals' equations. Such as Maxwell's, Helmholtz's, and more.

We can develop industry-based assignments without direct interactions with the industry. It should become the norm of assessing rather than an afterthought. In other words, building industry linkage and designing from the beginning of an assessment rather than trying to attract industry partners only for the final year capstone project as a result of accreditation requirements.

METHODS

Quality and other expectations set in assessments should clearly and strenuously convey the Seven Principles for Good Practice in Undergraduate Education (Chickering & Gamson, 1991). Particularly encourage active learning and communicate high expectations. However, we add to these learning principles by linking them with the industry. All learning activities must see a direct linkage and resemble a real expectation of employees in the workforce. Assessments, in particular, should be typical duties of a graduate. Graduates should be able to read standards and produce quality, actual work that satisfies industry expectations. To ensure the maintenance of higher standards and, in doing so, prevent falling standards (Trout, 1997), (Watty, 2007), (French, 2013), we must set high expectations that match industry practice. It would satisfy our proposed eighth principle: representing learning opportunities of real-world work.

Secondly, students must connect their work and its economic value. The researcher gave students every opportunity to make money, where possible, from their undergraduate work. With this, our proposed ninth principle is realized: opportunities must give to students to demonstrate what they can earn from their education.

Comparing assessments from different higher education providers was problematic as most do not release full details about each assessment, often concentrating only on how it breaks down into quizzes, assignments, examinations, and other assessment tasks. The assessment method could easily become a defining factor in a student's choice. In an ideal world, students exposed to all material throughout the degree would be made available at the beginning of the course to help students make a clear choice before committing significant time and money.

Analyzing 32 subject outlines that we have access to, many laid claims to having industry relevance, but the claims were not typically well developed or demonstrated. For example, they may use industry-standard tools such as SAS or industry-accepted technology, including JAVA, but while it might be clear how a student is to use such tools, how their usage links to the industry are not. Using tools and technology can be at a hobbyist level, which the literature often refers to as "toy examples." It is highly questionable whether these toy examples adequately prepare students for industry. In addition, it raises the conundrum of who says an assignment is at the appropriate level. Peer (other educators) assessments have been the solution for years but have become highly subjective and dubious with group thinking, biases and influences, and differences of expert opinion. Another solution is to have industry representatives review the curriculum, which also suffers from the same issues as peer assessment. In the worst case, bribery and other corruption practices occur, such as when cronies are appointed as external or internal peer or industry reviewers. So, one alternative option is to let the customers (students) and the wider community (industry, government, parents, and more.) have access to more detailed subject outlines that provide greater transparency and offer a fuller set of information so that they can make up their minds using their metrics.

One such metric is the proposed three factors income generating assessment framework, mapping a learning opportunity's difficulties, industry relevance, and entrepreneurism. It is presented in a tabular form, such as in Table 3.

Table 3 Subject Difficulties, Industry and Entrepreneurship

Learning Opportunities\Difficulties	Difficulties	Industry + Entrepreneurship
Assignment Brief	Hard – design/evaluate Medium – implement/follow instructions Easy – Appreciate/Memorize	Experience + Earn Experience or Earn Neither

This metric can identify which assessments need to be updated and renewed. We examined the difficulties and found that most of the assignments we analyzed met Bloom's taxonomy. We found two assessments that provided strong links to the industry practice. Some subjects satisfied industry relevance by linking the awarding of industry certificates (vendors/non-vendor specific) to a subject, course completion, or exam satisfaction. In addition, we gained industry experience through normal subjects such as capstone – final year subjects that allowed some students to complete industry-based projects. However, it noted that not all students ultimately offered industry projects, settling for a simulated industry project with no direct industry links. Apart from these two examples, the links are provided to the industry through industry technology, industry tools, or both. It challenges us as educators to find an assessment more obviously linked to the industry wherever possible.

We also explored the final metric of entrepreneurship, which provides students with an opportunity to make money from their studies. After reviewing 32+ subjects and approximately 100 assessments, we found none that offered this opportunity. Students do not have an opportunity to make money from their studies while they are studying. The simplified three-level Bloom's taxonomy is used to map common industry activities, as depicted in Table 4. At the level of "understanding," sharing knowledge and participation in common activities of appreciation are commonly achieved at conferences, workshops, team meetings, and informal colleague conversations. It achieves building and implementation when staff develops an assessment that meets a current standard or is compatible with other technologies. New designs can be patented or kept as trade secrets. Evaluation of technology, often at the same level as the design, is continuously being made in every purchase decision, creating and making benchmarks. The mapping of common activities in the industry is a useful indicator to determine where these activities should take place at which year level in a degree and, thus, which subject.

Table 4 Mapped Bloom's Taxonomy to Industry Activities

Bloom's Taxonomy (levels)	Examples
Design/Evaluate (L5, L6)	Technology decision – purchase decision. Tests against industry benchmarks Patents/Trade Secret
Build/Implement (L3, L4)	Read and implement standards/protocols
Appreciate/Understand (L1, L2)	Attend conferences/Workshops

RESULTS

Industry Findings

Although many institutes would claim to graduate industry-ready students, their industry engagement throughout the course is minimal, with a few industry guest speakers, ad-hoc internships, and assessments built around well-worn fictional or remote case studies. Despite the fast-changing and fluid industry, it has long been the conventional method of preparing students. However, there are growing indications that this conventional method is not keeping pace with preparing graduates for the fourth industrial revolution. Several new methods of addressing these concerns include teaching degree apprenticeships (Venkatraman, de Souza-Daw, & Kaspi, 2018), offering single-unit subjects, or studying a stream of subjects leading to a specific job (not a career).

Higher education providers must embed industry-based teaching into their curriculum. Evidence must show that all students can be engaged in such activity, not just selected students for such activities as placements or internships. It must achieve industry engagement within all subjects, not just for the well-established capstone subjects.

Involvement by industry partners is not only difficult to obtain but can differ widely from one cohort to another. Traditionally, learning from the industry has been through onsite activities as an intern or by receiving industry speakers. Internships provide valuable learning-by-doing opportunities. Industry speaker presentations provide alternative and current industry perspectives, although they can be difficult to organize for every cohort. Neither industry presentations nor internships are offered to every student equally within the same cohort or different cohorts.

However, industry speakers and internships may be the most common way of learning directly from the industry, but they are certainly not the only way. Setting assignments that rely on interpreting and implementing current technologies is another. It allows students to implement current technology and learn from techniques and strategies used in the implementation. Such methods include learning best practices from industry representative code; learning how the technology works and the best ways to implement it; learning from several professionals at once just by reading and understanding their code, comments, schematics, and notes; appreciating and understanding concepts such as re-using and interfacing as students write new code for an existing system. Table 5 shows examples of using industry-related works, tools, and products.

Table 5 Industry-Related Learning Activities

Activities	Tools	Professional body
A VHDL assignment to build additional features to the existing industry core. Students can download and configure a core for their FPGA device and add features.	VHDL synthesizer, editor. FPGA (simulator or hardware)	https://opencores.org/
Debugging and adding features to existing open-source industry-based projects. It can be a plug-in or large-scale multiple users server application.	Computer Languages. Programming Environments. Compiler.	GitHub SourceForge GitLab Allura Gitea
Use a standard defined by a professional body and implement parts or all for a product device. For example, students are given the g.707 SDH standard and told to implement the transmitter and receiver.	Standards. Appropriate technologies and tools. (See other activities for related tools.)	ITU-T IETF ISO IEC W3C
Build and add features to an open hardware product.	Electronics/Electrical	https://www.openhardware.io/ https://devopedia.org/open-source-hardware
Design and build a house	Builders, Architecture	WikiHouse
Design and build furniture.	Carpenters	Opendesk, OpenStructures
Make prosthetics for a patient	Prosthetics and Orthotics	Open Prosthetics Project
Make a ventilator	Biomedical	Open Source ventilator

Industry-based assessment is closer to real-life problems than traditional assessment. These are real-world and not toy-based assessments. They connect students with industry and give them preparation for what they will face in their first year of employment. It can enhance students' presenting professional portfolios on platforms such as Facebook and LinkedIn. Students can use their assessments to demonstrate their industry readiness. They can showcase their work and sell themselves to potential employers. The key here is to ensure the assessment reaches current industry standards and uses technologies and platforms currently in use in the industry, and students can showcase their work on open platforms that employers can seek out job-applicant.

The difference in learning from the maker communities is that the learning is at a higher level (in the sense of Bloom's taxonomy) and solves more difficult tasks (i.e., it expects the tasks that a graduate to perform in the industry). Moreover, learning from professionals rather than hobbyists.

Entrepreneurial Findings

After consulting the literature and exploring dozens of higher education websites, we found some actively engage in competitions via hackathons and hypothetical scenarios (Fincher & Finlay, 2016), (Steglich et al., 2020), (Flus & Hurst, 2021). These are often motivating and engaging to students and are used in industry (Emam & Hoptroff, 2019) (see innocentive.com, qmarkets.net crowd-sourcing platforms). However, these were the exception. Apprentices need not be the only ones earning while studying. Many defense forces allow for a similar model of working and studying alternatingly. A commercial model using similar principles is the UK degree apprenticeship which combines professional work experience with an education degree (Venkatraman et al., 2018).

In some ways, earning a degree and education at university has never been easier. Small projects advertised on websites such as Freelancer, Jora, Facebook marketplace, Gumtree (UK and Australia), and Seek have never been more popular. Many of them can easily be turned into assessments and submitted by students at their own risk. (The risk is typically minimum for many types of jobs). Jobs ranged from helping to complete a tax return to organizing a profit and loss statement for a small business and computer help. Another new opportunity is with websites companies turn to for new ideas from the public, such as innovation.com, LEAD innovation, and Qmarkets. These companies generally present cross-discipline and long-term “challenges” that are perfect for capstone. Low-income opportunities include modern video sites such as YouTube and TikTok, where small amounts can be earned through advertisements and the construction of mobile or desktop apps. Software bounties provide another opportunity. Software bounties are money companies like Microsoft pay for uncovering bugs and security holes. Students can easily opt to hack and earn by joining ethical hacker communities such as HackerOne or Bugcrowd. Other freelance work can find at freelancer.com.au, upwork.com, guru.com, and upstake.co, toptal.com, and so on.

It was thought impossible to give students in the network security field access to industry training, given the highly sensitive nature of company networks and the requirement of companies to lock out all unauthorized access. However, thanks to the responsible disclosure movement, security professionals can test software and systems (including production systems) to help protect them. Student assessments can include an investigation of bugs and security breaches and SQL reports. Submitting a student's work to an external source for evaluation creates an automatic peer review process. Students also gain the advantage of being assessed by their industry peers before formally entering the industry. Moreover, the industry recognizes these types of assessments as it produces them. From the academic staff member's point of view, having shared participation in assessment grading can mean a reduction in one of their most onerous tasks.

In contrast, marking could easily become a celebration of students' work with external recognition, which often only happens with a research thesis and the associated publications. Realistic earnings from income-generating assessments might be small, but there have already been some very successful outcomes. There are even examples of students making thousands and even millions (e.g., Facebook's Mark Zuckerberg, a more obvious example) from their businesses.

CONCLUSION

As educators, we need to create learning activities that provide the best learning experience for our students. Learning experiences should best prepare students for careers and industry jobs. If students can earn money from their studies, it gives them a real appreciation of the industry's business case. In order to update and make current their assessments, lecturers should research the open-source communities, open-innovation communities, and start-ups to find assessment ideas. Teachers must ensure assessments match current industry standards and practices and use current tools. Students benefit from learning by doing instead of just learning by reading. Ideally, the company schedules aligned due assessment dates, so students can submit to both at once and truly own their assessments as real work.

There is no doubt that higher education assessment must improve. The proposed method uses industry assessments and income-generating projects to help establish young professionals in their field. It eases student entry into the workforce and continually motivates them throughout their studies. In time, it envisions that industry-based and income-generating assessments will become a norm for assessing and another method for ranking higher education institutions against each other.

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