

## Title:

Designing Learning Design Pedagogy: Proactively integrating Work-Integrated Learning to meet expectations

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## Abstract

As more and more organisations examine the validity and suitability of online and blended models of learning and development the pandemic has only accelerated this demand. While the initial response was more in line with emergency remote teaching (Heggart, 2022.), more carefully planned models, often requiring design expertise, are now being trialled in different contexts. Contexts are the foundation and thus have a direct dependency when one thinks of designing for learning and performance. Understanding the factors that influence how a context shapes the learning experience thus assists with a much improved outcome for institutions and individuals (de Alvarez & Dickson-Deane, 2018; Romero-Hall et al., 2020). Work-integrated learning, also known as cooperative education in some geographies, depends on the integration of the disciplinary and societal context to add the value needed for the learning experience (Saunders, 2019). Knowing how this may look from a design perspective and then measuring it against the outcomes that are achieved to see if they meet the needs of industry and society-at large is the next step to have meaningful translation (Carr-Chellman & Carr-Chellman, 2020).

## Keywords

proactive learning design, work-integrated learning, Cooperative education, designing for transfer, Industry

## Introduction

As universities are facing significant challenges in the 21st century (Kaplan, 2021) preparing for the future and what it may bring would require decisions that are yet to be identified. The awareness of unknown decisions means that future skills are difficult to qualify for future work. With the rise of competing organisations, the increase of *other* credentials, and the separation between employment and tertiary degrees, universities are grappling with their position in society and the role of education as a social good (Kaplan & Kaplan, 2021b, 2021a). In the face of problems like climate change, mass inequality, and the movements of large numbers of people across the globe, the traditional disciplinary silos common in universities are struggling to adapt or offer solutions. This has led to an interest in multi-, inter-, intra- and transdisciplinary research (Bliemel & van der Bijl-Brouwer, 2018), where there is a focus on skills that are less discipline specific, and instead emphasise transfer, creativity, critical thinking and resilience. A number of universities have adopted these principles into their graduate attributes (*The University of Edinburgh's Graduate Attributes*, n.d.; *UTS Model of Learning*, 2014), stating that they believe these kinds of skills are essential in the development of graduates as they prepare to enter society. From this we can view the many universities that are adopting centralised models of teaching and learning, with expectations regarding the use of Learning Management Systems (LMSs) as a support to this front. This is stimulated, in part, by the findings of the Sloan Consortium reports (Allen & Seaman, 2008, 2013), Bradley Reports (Bradley et al., 2008), multiple Horizon Reports (*2005 Horizon Report | EDUCAUSE*, n.d.; *2006 Horizon Report*, n.d.; EDUCAUSE (Association), 2020), which raised questions about the experiences of students and the importance placed upon teaching and learning experiences at the tertiary level. Years later, universities around the world are seeing the value in employing learning designers to assist academics make this transition to blended or fully online modalities (Nworie, 2022). Something similar is taking place within the public sector, where training and development professionals, either within organisations or as outsourced third parties, are increasingly discussing their work in terms of learning and performance design, and especially workplace elearning design. Indeed, the field itself is expected to grow significantly over the next decade (Johnson, 2020).

These changes were occurring before the disruption induced by COVID. The pandemic has only accelerated this demand, as more and more organisations examine the validity and suitability of online and blended models of learning and development. While the initial phase was more in line with emergency remote teaching (Heggart, 2022), more carefully planned models, often requiring design expertise, are now being trialled in different contexts. Contexts are the foundation and thus have a direct dependency when one thinks of designing for learning and performance. Understanding the factors that influence how a context shapes the learning experience helps improve outcomes for institutions and individuals (de Alvarez & Dickson-Deane, 2018; Romero-Hall et al., 2020).

Designing for learning [and performance] requires an in-depth knowledge of how learning occurs (Donovan et al., 2000; Ormrod, 2004), thus building on learning sciences, cognitive sciences and psychology, education, and other nuanced disciplines. It [designing for learning] becomes an even more complex process when technologies which include those powered by electricity, hosted on networked systems (i.e., intranets, the Internet, etc.), accessed by [mobile] devices through an interface, and provisioned to learners via digital learning systems/environments are involved. Designing for learning and teaching is iterative and almost interwoven in its existence, as the process used to instruct also informs the content being learned. The difficulty in producing learning designers who are knowledgeable and skilled in the profession has always been a challenge to the field (Tripp, 1994). Understanding how learning design skills are to be designed to achieve proficiency, is due to the associated knowledge being more tacitly formed than compared to knowledge that is explicit in nature (Celik, 2021; Wilson et al., 1993). By situating the knowledge to be learned within contexts, students can easily grasp concepts by creating a bridge between the learner and the contextualised content (Dickson-Deane, in press), thus creating opportunities for transformative capacities in pedagogical designs.

Work-integrated learning, also known as cooperative education in some geographies, depends on the integration of the disciplinary and societal context to add the value needed for the learning experience (Saunders, 2019). As students matriculate into tertiary level institutions, the institutions need to plant social good throughout the curriculum, which requires an awareness of the skills demanded and an ability to design deliberate yet strategic activities. The skills of transfer, criticality, creativity and resilience will then permeate the curriculum through a systematic approach with the aim of creating a networked design between tertiary institutions, society and industry. Knowing how this may look from a design perspective and then measuring it against the outcomes that are achieved to see if they meet the needs of industry and society-at large is the next step to have meaningful translation (Carr-Chellman & Carr-Chellman, 2020).

### Incorporating work-integrated learning into learning design as a strategy

Perhaps appropriately for a profession that continues to struggle to define itself (Rieber, 2018; Wagner, 2011), learning design education and training and the boundaries that encompass the field remains a confused space. While there is a profusion of different credentials and programs catering for learning design and technology expertise in countries all around the world, there still remains contention about what should be incorporated into these programs, and what kind of skill set constitutes what is required by a neophyte learning designer or technologist (Heggart & Dickson-Deane, 2021). Internationally, this has been a problem for at least three decades (Rowland, 1992; Tripp, 1994)), and has stimulated a number of approaches, including problem-based methods (Dickson-Deane & Asino, 2018, p.; Silber, 2007), studio approaches (Cross, 2011), and studies of practice (York & Ertmer, 2016)..

The lack of clarity has also led to some frustration on behalf of students. One common refrain (Gardner et al., 2021) is that students often feel that they are not adequately prepared for interviews, for learning designer roles, or for working as a learning designer in the field.

The argument by students is that courses focus too much on theoretical considerations - the 'why' of learning design, and not enough on practical matters - the 'how'. This means that the curriculum which focussed on specific tools and technologies that might once have been of value in a course for learning designers (and this includes both technological and procedural tools) might be quickly becoming obsolete, or replaced by alternative preferred approaches or tools - focussing on the skills towards use of a specific tool as opposed to the pedagogical value of a type of tool. The design of learning design curriculum to support the much needed transference of skills is an important requirement here. Skills that are needed not just for employment but for life-long and life-wide living learning by bridging the divide between the knowing of "why" towards the applicability of "how to do". A good solution is the use of internships or cooperative education as it is called in some locales. However, there are growing concerns about equality in terms of access to and designs of internships (Rainford, 2010), their appropriateness for a changing student demographic - a problem which is exacerbated in postgraduate settings (Chatterjee et al., 2019), and student demands for more effective and meaningful learning experiences. Post- 2020, of course, there is the added challenge of providing internships in an environment that might be facing limited interaction and lockdowns due to the ongoing threat of the COVID19 pandemic. These problems - as challenging as they are - can be approached from the perspective of a learning design problem. Through reconsidering the nature of the course design and especially the elements of work-integrated learning present within, it is possible to develop a design for learning that focuses on profound and transformative learning and transferable skills and knowledge.

### Modulating the *design and applicability* of learning design curriculum

Achieving the experiential value of the skill of learning design requires an in depth review of the curriculum and how the pedagogy actuates the curriculum. This in part requires academics in the field to fully review and then embed their core understandings of the field into their own semantic understandings for teaching. As this process is actioned through pedagogy, the mapping of key knowledge to an existing schema can be difficult to attain (Rumelhart, 1984) and developing a method through which there is meaningful comprehension can be difficult to design. In order to design such, conditioning the mind to accept the knowledge and truly comprehend it, requires that the brain has to be readied. Designing for transfer requires the understanding of how learning occurs (Ormrod, 2004) and the complexity required for the best outcomes (Jackson et al., 2019; Sangwan & Garg, 2017; Thorndike, 1924). To facilitate applicability, transfer must occur and the belief that transfer can only occur between similar context and conditions was soon replaced with the notion of connectionism - the understanding that through sufficient practice and enough stimuli to motivate and promote learning new pathways a fertile bed suitable to accept knowledge can be created to enable transfer processes (Reed et al., 1974).

As one learns the skills embedded in the field of learning design, there are three approaches that can be used to increase the knowledge needed; 1) one can convert what is known into a map, compare the cognitive map against others and create new knowledge (i.e., analogical transfer), or 2) take the current knowledge, reduce the steps that forms the foundation of said knowledge and rework it until it is optimised with a specific context for a level of complexity (i.e., knowledge compilation) or 3) see the current knowledge when matched against another solution as a form of corrective action to be attained (i.e., error correction)

(Anderson et al., 1981; Chen, 2002; Ohlsson, 1996). Through extensive dialogue with students, referencing workplace tasks and the context in which they are situated, educators can then gauge how much has been transferred and the accuracy of such (Fleming et al., 2021). Dialogue about the students' needs helps the educator scaffold how the skills they teach can be transferred to the future endeavours of the students in the workplace. Learning which tasks are most appropriate for the workplace is based on the dialogue with the students and knowledge of the workplace needs. The educator can use the knowledge gained from the dialogue with the student to show them how to transfer the skills the workforce desires, so students are more work ready. Finally, the educators need to create an environment in which students feel safe and are encouraged to ask questions. The students need to feel safe enough to attempt, and possibly fail, transfer skills for transfer to be taught effectively. This freedom to fail at transfer helps the student learn how to transfer faster and more effectively. The process of the transfer will then set the foundation for whether the data can be transferred near, (i.e., to a similar problem space) or far, to a problem space that is disparate in discipline and complexity (Jackson et al., 2019; Perkins & Salomon, 1988). As these conditions are provided for a novice learning designer, the ability for skills to grow allows for an improved and more notable designer ready for the activity in an employed mode (Phye, 2001; Phye & Sanders, 1992).

## When do the curriculum and pedagogical design work for learning outcomes?

Research has been striving to see how academic institutions can increase the ability to transfer the skills taught in academia to the workforce. Research began looking at what kind of tasks taught in academic classes were transferable with the first realisation was that collaborative activities in academic settings (Hakel & Halpern, 2005) and authentic tasks demonstrating applied learning concepts (Burke & Hutchins, 2007) aided in the transfer process over the more theoretical concepts taught in academic classes (Veillard, 2012). Theoretical concepts were more mentally demanding and, thereby, became more difficult to transfer. In addition, activities taught in academic settings which were complex (McDonald et al., 2012), because they emulate work environments were hard to transfer as well. These findings lead researchers to see if transfer could be improved if industry involvement was increased in academic settings. Smith, Ferns, and Russell (2014) found that academic institutions who increased industry involvement in academic settings prepared students more for the work environment and improved transfer abilities. This finding was further elucidated when Veillard (2012) revealed that knowledge learned in the classroom was harder to transfer to the workplace compared to knowledge gained from workplace learning experiences. This finding reveals that WIL could be the solution to building the schema required to support learning for workplace employment (Jackson et al., 2019; Rumelhart, 1984; Sangwan & Garg, 2017; Sweller et al., 2019).

Embedding WIL elements into both the curriculum and pedagogical design of learning design curriculum is easily an iterative and complex process. Additionally, if the current societal and/or world contexts were to be ignored, the designs for such courses will have little to no value (Dickson-Deane, in press). Conceptualising how a design will sufficiently embed learning design elements infused with WIL tenets to facilitate individualised and contextualised transfer which is responsive to conditions which may be unknown and

unexpected is the gold of a design (Khan, 2021). The fragility expressed in the socio-economics in varied geographical locations beg for designs to accommodate the impossible but expect the probable. The key is can this be achieved and if so how?

### Case Study: Operationalising WIL into tertiary education

The Graduate Certificate of Learning Design (GCLD) at University of Technology, Sydney is a new course, having its first intake in 2020. It caters for the increasing demands for Learning Designers in both higher education and corporate fields. It is offered at a graduate level, and the students are drawn from school education, higher education, corporate settings and non-government organisations. Many students are already working in Learning Design, or similar roles. Other students are drawn from the broader education sector (lecturers and teachers). A significant proportion (approximately 30%), however, have no experience in education or Learning Design. This mix of students presents both opportunities and challenges in terms of the design of the course. The students are generally older (30+) as one would imagine with a postgraduate course, and a majority (approximately 65%) are female.

The course is delivered entirely online in as flexible a way as possible, offering a mix of synchronous and asynchronous learning materials in small, six-week subjects (Heggart & Dickson-Deane, 2021). There is no set pathway through the course, and students are able to enrol in the eight subjects in any order. It is a program of study which has multiple elements of WIL embedded seamlessly throughout the program and each individual course. Designing for transfer of knowledge in a program of study can not be done in one course or another, but must be strategically planned, scaffolded and thus would require an intense collaboration between practice and theory and research - industry and academia. This case utilised significant user and market research which detailed stakeholder interviews with prospective students, practising learning designers and employers from a range of industrial sectors. In addition, at the conclusion of the first cohort, further research was undertaken via interviews with graduating students to determine the effectiveness of these interventions in terms of them gaining employment. Thus providing an avenue for the outcomes of the program to be infused and redirected as influencing factors into the curriculum and pedagogical practices. The case outline three elements which created a framework for the learning design (see Figure 1)

1. Contextualised assessments tasks
2. Industry-like discussion sessions
3. Internship experiences

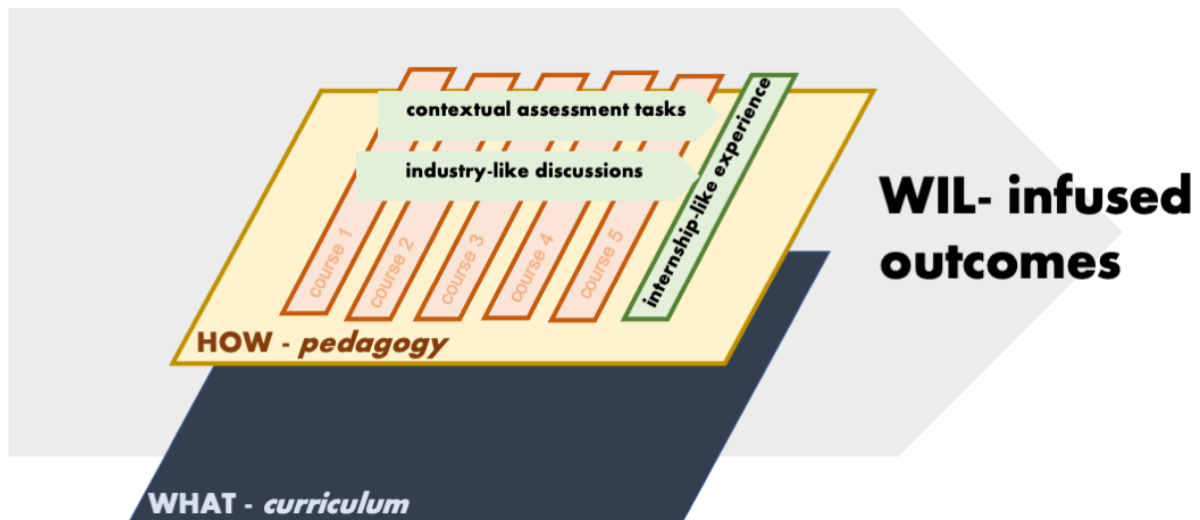


Figure 1 - Proposed framework for embedding WIL elements into GCLD curriculum and pedagogy

### Contextualising assessment tasks within (post)graduate education

It is hardly new to suggest that effective learning and instructional design begins with the requirement to make the learning relevant to the student (Dickson-Deane, in press). Indeed, Merrill (2002) places such an emphasis on this that he makes it central to his principles of learning. The case is even more important for adult learners (Rothes et al., 2017) and those who have a choice about their learning. Relevance increases motivation (Keller, 1987) for the students. However, despite this, attempts to make courses relevant often struggle to go further than tokenistic surveys or questionnaires at the start of any particular course. It's relatively straightforward to ask students why they are undertaking a particular course or why they are interested in their field of study - but if this is the sum of a designer's efforts to contextualise course materials and learning, then it is likely to be self-defeating - and this is especially the case if there is no further engagement on behalf of the educators with student comments.

A more effective approach, and one that was adopted in the GCLD, is to contextualise the learning at the point of the assessment to the current workplace conditions of the student. For each of the different assessment tasks, students were asked to apply the requirements of the task to current or past projects within their current or past places of employment. For example, in one of the courses in the GCLD, students are required to redesign or to develop a new assessment task. In a traditional learning design course, it would be common to provide students with a typical brief or scenario, and require them to work from that. While this may be effective, it does little to allow students to apply what they have learnt to a setting beyond the university. How much more effective is it for the students to be given the chance to apply their learning about assessment to training materials with which they are already familiar. Basically, this approach is a mechanism by which the course designers for the GCLD explicitly designed for student to apply their learning in a new context, with the idea that if they could transfer it from the university to their workplace, it would be easier for

them to transfer it to other workplaces and settings in the future - using the theories of transfer to implement near and far transfer outcomes.

### **Why focus on assessments?**

Biggs (1996) has made it clear that, at least in the eyes of students, it is assessment that is the most important factor. This has led to the idea that assessment drives learning - i.e. students learn for the assessment, rather than being assessed on their learning. This has led to ideas such as making contributions to discussions assessed, or assessing readings and so on, in order to capitalise on the student focus on assessment. Debating the merits of any of these approaches is beyond the scope of this discussion as the attempt is to highlight approaches to achieving the best for the learning outcomes.

However, simply designing for this transfer is not enough. The designers of the course wanted to promote reflection amongst the students, wherein they were required to consider how effectively they had engaged in understanding the value of what they understood and believed they learned (Eraut, 1994; Schön, 1983) in order to be competent in the field. This was accomplished via short reflective pieces that were attached to each main assessment task. Thus serving as a way to embed some of the skills that are most in demand amongst learning designers such as critical thinking, design-decision making and justification, human-centred skills, and more...all skills that are likely to be needed when employed as a learning designer.

### Industry-like Discussions

While no doubt effective, the contextualised assessment tasks were only part of the work-integrated learning strategy deployed throughout the GCLD the next feature that was common within each subject was the inclusion of voices from the profession - current and practising learning designers (or people in learning design adjacent roles). This was done through the offering of industry-like discussions called: *In Conversation With...* and *Expression Sessions*.

*In Conversation With...* were interviews with learning designers about the topics being covered in the subject at hand. For example, in a subject called *Critique: Issues in Learning Design*, the *In Conversation With...* videos documented a learning designer discussing how designs were made to be accessible, including considering diversity, inclusivity and more prosaic topics like contrast and transcripts. These interviews were segmented and spread throughout the learning management system which housed the course, with the effect that students almost had a more senior colleague discussing the topics with them as they made their way through the course - somewhat a form of cognitive apprenticeship. Of course, this was a somewhat passive affair; students couldn't interact with the videos in any meaningful way beyond viewing them.

However, they did provide a valuable lead-in to the second element: *Expression Sessions*. These were sessions that took place at the end of every subject. In these sessions, a practising learning designer was invited in to take students through something that they had been working on, related to the subject. For example, in the subject *Crunch: Learning Analytics for Performance Improvement*, there was a presentation and then a workshop on how to use automated feedback to personalise student feedback. These served as small



scale cognitive apprenticeships (Brandt et al., 1993) or alternatively as design studios (K. M. Smith & Boling, 2009). Students were able to observe a learning designer at work on a current and relevant problem to their own experience and to ask questions and try to do the work themselves, drawing on their own experience. Like the contextualised assessment tasks, this was an exercise in transfer, but it was a step further than in that example; here, students were asked to consider not their own context, but the context in which the guest learning designer was working.

### Internship experiences

Internships are often cited as an example of work integrated learning and they can certainly fulfil that function, although it should be noted that they work best when they are incorporated with other, sometimes overlooked, elements of work integrated learning (Jackson, 2018). They [internships] also called “coops” are typically described as a partnership between the academic institution and industry to place students who meet a qualifying criteria into industry to gain specific work-related skills (cite). Even before the pandemic made face to face attendance difficult, internships had some concerns; principally, they often entrench inequality amongst students, as it is unlikely that all students will be able to make the commitment to undertake an internship. This problem is only exacerbated in postgraduate study, where most students have other responsibilities, including work and family obligations with the added notion that internships can take the form of reduced or free labour thus being interpreted as advantageous only to industry participants.

Within the GCLD, the course designers wanted to find something that was a better fit for the time-bound modern student. This needed to be something that could work around a student’s commitments. The result was one subject devoted to a *flexible internship-like experience*. This subject (Work: Learning Design Project) is the final course within the GCLD, and requires students to undertake a 20-30 hour internship-like experience. However, this experience is undertaken as part of a learning design team within the university and is based on the notion of completing a project, rather than simply attending and shadowing a more senior worker.

This has a number of advantages; firstly, the flexibility of a project approach means that students can work around their work and family schedules in order to complete the work. This makes the design more socially just (Heggart et al., 2020). In addition, by deliberately designing so that there is a project to be completed, the learning is more focused, more targeted, and thus more likely to be of value to the student, the industry-partner and the academic institution.

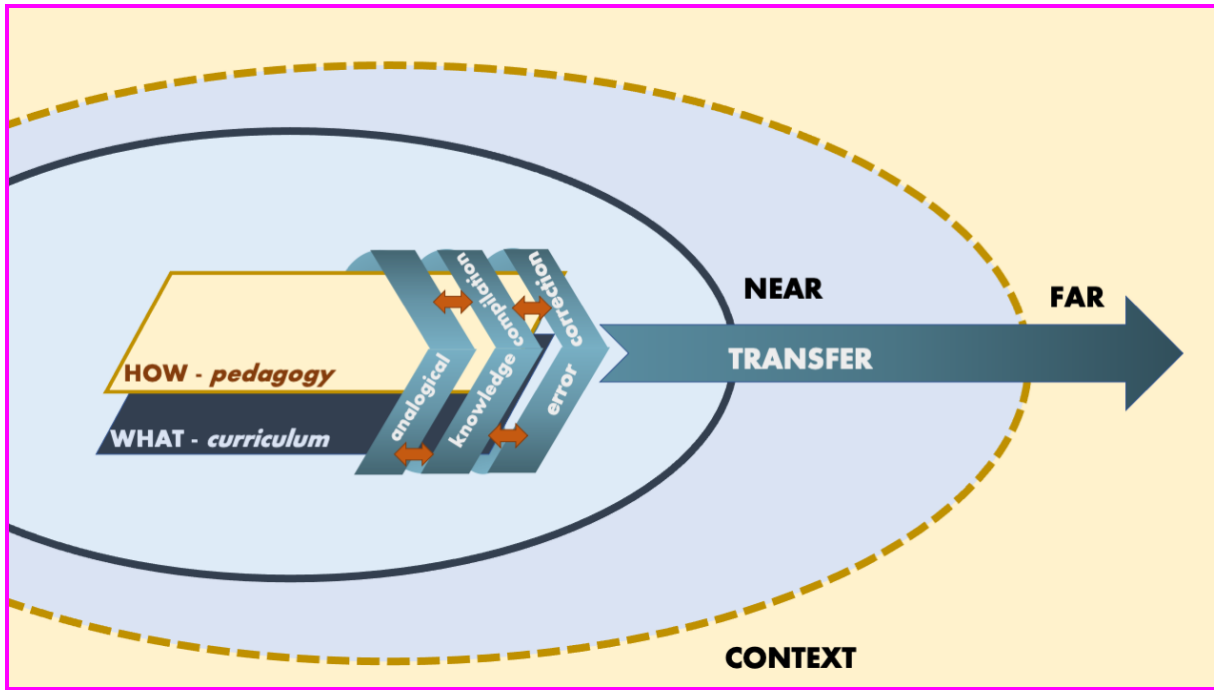


Figure 2: Testing model for transferability of WIL design elements infused into curriculum and pedagogical design

### Future directions and discussion

Given this testing model (see Figure 2) and the areas where WIL elements are infused, separating the contributions towards curriculum design and contributions to the pedagogical design is imperative to measure success. WIL programs tend to measure success through employability numbers which signals to educators that their students have the qualities that current and future employers desire in their employees. As transfer is key from the educational environment to the work-place environment, there is the need to also review how the work-place environment contributes or provides feedback into the same curriculum and pedagogical designs for the program. Looking for a seamless movement in applicability in the attainment and proactive use of skill requires an entire program design that promotes an immersive experience (Csikszentmihalyi et al., 2018). A good suggestion here would be to ensure that educators are explicitly aware of what transfer designs look like and how they should be designed into the curriculum and then reinforced through pedagogical delivery (Barnett & Ceci, 2002) to achieve the expected outcome (Fleming et al., 2021). With the understanding of the type of transfer (i.e., near and far) and then the methods under which they should be measured design and delivery skills will improve even through the activity of scaffolding for transfer - educators should practice designing transfer using transfer principles (i.e., rehearsal, building meaningful understanding towards reduce error making, etc. (Bransford & Schwartz, 1999).

As WIL is considered a design strategy in learning design focussing on the value of all experiences, good, bad, and indifferent is important to creating a well-rounded contributor to the industry (Kapur, 2016). There are also discussions that should be had with industries as to how to instil those desired attributes into students who are novices to the world of work, thus reframing how internships are designed and where they are strategically embedded in courses and programs for improved effectiveness. As the embedding of WIL elements are

discussed, there is the opportunity to rethink how pedagogy can benefit from explicitly creating curriculum and instruction seamlessly with work integrated learning assets - but, many can say this already occurs in some form with the likes of Google and Amazon plan to disrupt college degrees by providing job-ready on demand learning opportunities. Maybe this model is a template almost like a powered up just-in-time learning opportunity and with this all it means is that both university and industry need to meet at the students study desk to determine how to move forward.

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