Routledge Research in Education

ASSESSMENT FOR EXPERIENTIAL LEARNING

Cecilia Ka Yuk Chan

ROUTLEDGE

Assessment for Experiential Learning

Chan's book explores the challenges in assessing experiential learning, deepens our understanding and inspires readers to think critically about the purpose of assessment in experiential learning.

Experiential learning has been studied and proven to be effective for student learning, particularly for the development of holistic competencies (i.e. 21st century skills, soft skills, transferable skills) considered essential for individuals to succeed in the increasingly global and technology-infused 21st century society. Universities around the world are now actively organising experiential learning activities or programmes for students to gain enriching and diversified learning experiences; however, the assessment of these programmes tends to be limited, unclear and contested.

Assessment plays a central role in education policies and students' approach to learning. But do educators know how to assess less traditional learning such as service learning, entrepreneurship, cross-discipline or cross-cultural projects, internships and student exchanges? While the current assessment landscape is replete with assessments that measure knowledge of core content areas such as mathematics, law, languages, science and social studies, there is a lack of assessments and research that focus on holistic competencies. How do we assess students' ability to think critically, problem solve, adapt, self-manage and collaborate?

Central to the discussion in this book is the reason students are assessed and how they should be assessed to bring out their best learning outcomes. Offering a collection of best assessment practice employed by teachers around the world, this volume brings together both theoretical and empirical research that underpins assessment; and perceptions of different stakeholders – understanding of assessment in experiential learning from students, teachers and policymakers. The idea of assessment literacy also plays an important role in experiential learning, for example, reflection is often used in assessing students in experiential learning but how reflection literate are educators, are they aware of the ethical dilemmas that arise in assessing students? These questions are discussed in detail. The volume also introduces a quality assurance programme to recognise student development within experiential learning programmes.

The book will be particularly informative to academic developers, teachers, students and community partners who struggle with the development and assessment for experiential learning, those who plan to apply for funding in experiential learning, and policymakers and senior managements seeking evidence and advice on fine-tuning curricular, assessment designs and quality assurance.

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Cecilia Ka Yuk Chan

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Foreword

Universities used to assess what was taught and what was easy to test, and in some they still do. This led to a focus on relatively low-level knowledge tested at the end of courses. This encouraged students to delay study until close to their examination and prompted them to adopt strategies of memorisation. However, they have gradually recognised that this promotes a very restricted curriculum which does not reflect the full range of learning outcomes that are needed to produce graduates who can adapt to the demands of a complex world.

Most disciplines, especially those aligned to professions, have broadened their assessment strategies and few now rely solely on final examinations. The focus has moved to broadening what students learn. For example, the soft skills of communication and working cooperatively with others have taken on greater importance. Much of this change cannot be accommodated in traditional lecture-based courses. New learning modes and activities have been established appropriate for the outcomes being sought. Hands-on active approaches to teaching and learning have been adopted. Some of these involve students in real-world situations outside the educational institution in business, industry or the community. Students learn in the settings where work happens in response to the needs they meet there. Other active approaches utilise various forms of simulation and group work on campus. A great range of terminologies, often discipline-specific, are used to describe these activities – placements, practicums, work-integrated learning, teamwork, practice-sessions, etc. – which all fall under the general heading of experiential learning. Here, the term is used generically as a shorthand to encompass many different experience-based tasks and activities, on campus and beyond.

What all these approaches have in common is that students learn by working with experience. Students undertake tasks that focus on the capabilities and attributes they need to develop to be recognised as a graduate in a particular field. These range from well-equipped simulations of health environments where students practice being nurses or clinicians of various kinds, to simulations of engineering processes or stock markets, etc. Students are placed in either real or simulated contexts in which they have to appraise the situation they find there, intervene appropriately and make judgements about the effectiveness of what they do. They learn through acting and reflecting on what they do. Most

importantly, they learn in consort with others. Technical knowledge and skills combine with interpersonal attributes to address meaningful issues. Tasks are often not individual but require collaboration with others, be they fellow students or others they may encounter in a particular context.

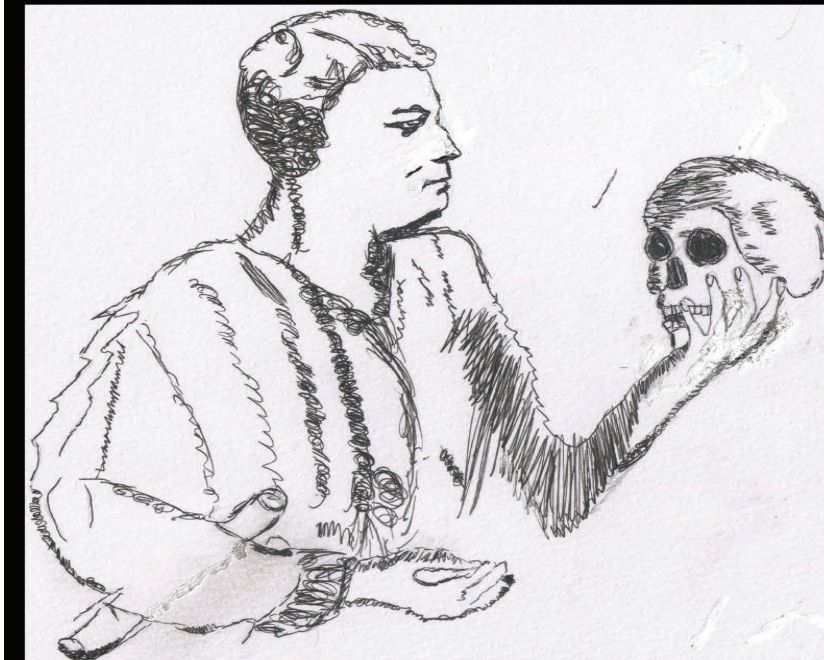
Assessing the learning outcomes of such work requires us to think beyond conventional tests and exams, although there are places where technical knowledge of such practices is still useful. The range and scope of what needs to be judged are far greater than individual disciplinary knowledge or what can be judged through simple written assignments. Graduate attributes and transferable skills now take greater prominence.

As the extent of such experiential activities has increased and as the formal establishing of course learning outcomes has acknowledged their importance, demands on assessment have never been greater. It is not a straightforward matter of applying what we already know about test construction and the design of unseen examinations, but confronting major new challenges: How can hard-to-assess outcomes be evaluated? What new ways of thinking are required if what is to be learned does not reside within a given course unit? How can assessment be designed in ways that do not undermine the very kinds of learning that are being promoted?

Cecilia Chan has been grappling with these issues with success for many years. In this book, she has brought together key ideas from the literature and from her own research and the practice of herself and her colleagues. This is a substantial undertaking as this area is fraught with diverse and conflicting terminology, a lack of consensus on key ideas and a dearth of good quality research. Her book helps the reader navigate the pathways of assessment and experience-based learning. It identifies key ideas and dilemmas: for example, how to choose appropriate assessment practices, how to assess group work, how to involve external parties and how to resolve tensions between reflection and assessment? It is a valuable sourcebook which brings together practices from different disciplines which hitherto have not been discussed in one place. It provides ways of thinking about how generic attributes and discipline-specific learning can be assessed within one course.

This book provides a stimulus for discussion on a challenging topic. It enables us to take more thoughtful approaches to the assessment of an increasingly important aspect of higher education.

David Boud



"To assess or not
To assess. That is
the question."

Sean Colleton
30 Jan 2022

Prologue

This book is written especially for teachers, academic developers, policymakers, students, activity organisers and community partners. I hoped to write a book with which readers can easily reflect, reinvent and reapply onto their own assessment practice for experiential learning. I didn't want to write a book with only practical examples and not supported by research theories and frameworks. However, coming from a professional discipline background, I also understand the frustration of reading (and not understanding) a book with only educational research and theories. But as someone who has been leading academic development at a research-intensive university for over 15 years and conducting serious educational research, I recognise how important it is that the effective strategies we engaged are backed by theories and research evidence. This book bridges that gap. I have brought in my perspectives and experience of what I believe is most useful for readers in assessing experiential learning. I have first-hand experience in most of the assessment approaches I presented in the book, and truly practice what I preach.

In the book, I tried to use simple daily examples to illustrate the different aspects of experiential learning. Knowing the readers of this book may be teachers, educational developers, policy writers from various disciplinary backgrounds and types of post-secondary education institutions (such as community, vocational and technical colleges, research-intensive and teaching-intensive universities), I made it a point to use straightforward language and terms that are not specific to educational research, and I hope that I have managed to make it readable and approachable for all readers. The way this is written is not only for teachers to learn new tricks or improve old ones but also to allow policymakers and funders to fully understand and appreciate the work that teachers and administrative staff deal with in experiential learning, raising caution not to underestimate the workload and hurdles through which teachers and supporting staff have to jump.

The examples, case studies and focus of the book are written for post-secondary education; however, most of the content is suitable for different levels of education. School teachers and principals can adapt some of the assessment strategies to suit the culture of their students and environments.

There is one area that I did not cover, and it is on the assessment of experiential learning during the COVID-19 pandemic. During the pandemic, many

experiential learning activities came to a halt, and some activities were reinvented. With some countries imposing travel restrictions, overseas experiential learning opportunities have also reduced significantly, leading to the introduction of the term *experiential learning at home*. Our Pro-Vice-Chancellor at the University of Hong Kong, Prof. Ian Holliday made a very sound point that there are many experiential opportunities to gain at home, and he encouraged teachers to take this opportunity to reinvent. Teachers have begun to use simulation or online flipped learning to replace the part of face-to-face. For example, my colleagues from Architecture, Mathew Pryor and Gavin Coates used concept boards, online studios and online field trips to help students to learn about landscape architecture. Tanya Kempston from the Faculty of Education guided university student mentors to work virtually with secondary school students to create radio dramas and broadcasted them at her virtual radio drama festival called "Hear This!" The Global Citizenship@Home internships at the Faculty of Social Sciences headed by Elsa Lam created a new pathway for students to achieve global learning with internship placements in Hong Kong. Rebecca Lam from the School of Chinese, Faculty of Arts used the YOCLE online platform (see Chapter 9) and asked students to identify Chinese phrases or words that are written incorrectly in restaurants, shopping malls or anywhere that they may encounter in their everyday lives. Students also have the opportunity to comment and like each post as well as messaging the class, bridging the learning isolation from the pandemic. Among these new reinvented experiential learning activities, many new technological tools were trialled and employed. Yet, the actual assessment challenges and approaches in experiential learning remained relatively similar. The main differences were the result of using more technology tools during the pandemic. Thus, those challenges that fall in the category of using technology for assessing experiential learning, such as digital exclusion and breach of academic integrity, persisted. Of course, I am aware that there may be a lot of disagreement and debates regarding some of these so-called newly invented "experiential learning," where the experience may not be truly authentic, and the kind of student learning experience is reasonably doubted. Future research in this area is needed.

In this book, I have used the generic term "Experiential Learning" to describe the range of activities that are experience-based and hands-on. Using this term as an umbrella term is by no means underplaying other equally important terms used to describe experience-based learning such as experience-based education or work-integrated learning. The term experiential learning is used as it is the most commonly known term to describe these activities in Hong Kong and many parts of Asia. As this book focuses on assessment, I didn't want to distract readers' attention with the ambiguities arising from the conceptualisations of the experiential learning terminologies. Thus, in Chapter 1 of the book, I have provided several concepts of experiential learning from researchers, teachers and students to uncloud the idea behind experiential learning.

Each chapter begins with a quote that relates to the theme of the chapter, and the structure of the main body may differ depending on the theme of each chapter. The chapter ends with a section called *questions to ponder* and I included my

own personal reflection after completing each chapter which diverges from the conventions of a typical academic book. This book is written for academic developers, teachers, policymakers, students, activity organisers and community partners more than it is for educational researchers. However, individual researcher will find useful examples and practices from this book and may contemplate the kind of findings that are needed to support these practices to help generate theories and frameworks. The questions and reflections at the end of each chapter may also inspire research questions. Below is a short summary of each chapter.

Short Summary of Each Chapter

Chapter 1: What IS and IS Not Experiential Learning?

From a scholarly definition of experiential learning to a practical interpretation of it from the lenses of educators and students around the world, this chapter offers a tangible definition and typology of experiential learning in relation to its stakeholders. It also includes a list of benefits and challenges for different parties involved in experiential learning, which lay the foundation for a deeper dive into the topics in later chapters.

Chapter 2: Experiential Learning Theories and Frameworks

To prepare readers for a thorough discussion of the nuances that exist in experiential learning, this chapter offers an introduction and digestible breakdown to helpful theories and frameworks that address the fundamentals of the educational phenomenon. It also touches on holistic competency models, which are highly helpful in understanding the non-academic learning outcomes of learning experiences. From experience-related research like Dale's Cone of Experience and Kolb's Experiential Learning Theory, to holistic competency-oriented models such as Holistic Competency Development Framework (HCDF) and Chain of Mirrors, this chapter takes readers on an analytical journey covering the rationales, strengths, criticisms and applied examples of theories relevant to experiential learning.

Chapter 3: Assessing Academic Knowledge and Experiential Learning

There are numerous similarities and differences between assessing academic knowledge and holistic competencies. Deeply understanding the former gives us insights into the basics of assessment, including concepts like formative and summative assessment, assessment literacy and students as partners, which are highly useful for and applicable to assessment in experiential learning. This chapter connects the dots between assessments of these two very different groups of learning outcomes, and showcases the benefits and challenges brought about by the different types, methods and approaches to assessment in experiential learning, all well-supported by recent educational research and examples.

Chapter 4: Designing Experiential Learning Assessment

Following the big-picture discussions in the previous chapters, this chapter serves as a detailed guide to assessment design in experiential learning. The chapter begins with a list of essential questions for educators to ask oneself when deciding on assessment types and when designing the actual tasks in their programmes. Enriched with real-life examples and thinking prompts, I present nine common assessment tasks in experiential learning and their respective strengths, weaknesses, effective design tips and sample rubrics. This is followed by eight experiential learning activities, from capstone, internships, to residential education, and concrete ways in which their learning outcomes can be assessed.

Chapter 5: Reflection as Assessment in Experiential Learning

This dedicated chapter digs into reflection as a common but tricky assessment for experiential learning, particularly as evidence for higher-order thinking processes before, during and after an experiential learning activity. Drawing from prominent interdisciplinary studies on reflection as a practice, this chapter explores this complex topic and breaks it down from the perspectives of students, teachers and institutions, before expanding into its sociocultural nuances and reflection literacy, the understanding of which is the key to authentic and meaningful reflection in the context of education. The chapter also offers important principles for designing impactful reflective assessments and lays the foundation for a later discussion on ethics.

Chapter 6: Feedback in Experiential Learning

Feedback can be a challenging aspect in experiential learning, especially when the learning outcomes are personal and often unpredictable, making it difficult to standardise and maintain quality and usefulness of the feedback. In this chapter, I invite readers to examine factors affecting feedback: quality, sources of feedback (i.e., types of assessors), modes or practices, and feedback literacy, and prompt readers to critically evaluate the types of feedback given in various contexts. It also discusses the importance of evaluative judgement and how it can contribute to the development of feedback practices and literacy with further research.

Chapter 7: Ethics in Assessing Experiential Learning

Previous chapters have implied a range of ethical concerns surrounding experiential learning, its pedagogy and assessment, all of which are addressed with examples in this thought-provoking chapter. This chapter covers the concerns and dilemmas that educators should consider during design and other decision-making processes of experiential learning, and illustrates with possible scenarios for readers to ponder. This is followed by some suggested solutions to overcoming these challenges and tips for ensuring a safe space for students, teachers and other stakeholders and participants of experiential learning activities.

Chapter 8: Assessment Cases around the World

This chapter provides an anthology of real-life experiential learning assessment examples from institutions around the world. These authentic and detailed case studies range from community service, field trips, internships, to hands-on practicum programmes, and were sourced from top universities from around the globe, including Hong Kong, Canada, the United States, the United Kingdom, Singapore, Australia and New Zealand. In each case study, I guide readers through its learning activities, assessment methods, rubrics and other grading criteria, feedback from teachers and students, and more, making the chapter a highly useful reference resource for educators and programme designers.

Chapter 9: Assessing Experiential Learning with Technology

Technological advancements inspire innovations in every field, and education is not an exception. This chapter showcases how technology can be effectively utilised to enhance students' experiential learning process either as a main or support tool. I also remind readers of the challenges that may come with the misuse or inappropriate adoption of technology in certain situations and contexts. The chapter is wrapped up by a case study of an overseas construction safety online course using YOCLE, a multi-platform e-learning tool with built-in assessment tools and validated instruments designed specifically for experiential learning and holistic competency.

Chapter 10: Quality Assurance and Evaluation in Experiential Learning

Quality assurance and evaluation of learning and impact are both crucial to a programme's success and sustainability, and potentially messy and intimidating. This chapter draws from my experience as a teaching and learning expert in higher education and a wide range of educational research to guide readers – especially potential grant applicants, administrators and policymakers in the field of experiential learning – through the evaluation process that is most useful and important for experiential learning. This includes critical guiding questions and evaluation methods and tools, as well as the International Holistic Competency Foundation (IHCF) Quality Assurance programme for programmes targeting holistic competency outcomes.

Enjoy your reading, hopefully you will find the book useful.

Yours sincerely,
Cecilia Ka Yuk Chan

Acknowledgements

Having an idea and turning it into a book is as amazing as it sounds. It has however been very challenging particularly during the last few years with the COVID-19 pandemic when higher education around the world has been turned upside down and my responsibilities as the head of professional development at my university have massively heightened due to the varied impacts the pandemic has created. Thus, the initial idea of having this book finished within a year prolonged on for three years.

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Cecilia K Y Chan (22nd January 2022)

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1 What IS and IS Not Experiential Learning?

> A valuable experiential learning curriculum allows students to **reflect**, **relearn**, **react**, **reinvent**, **reform** and **reapply** their learning.
>
> – Chan, CKY

Introduction

The wide-ranging definitions and ever-enhancing approaches in experiential learning, exacerbated by a lack of unified theories and frameworks, often cloud teachers as to what defines and constitutes the term "experiential learning." For reasons of consistency, the term "experiential learning" is adopted in this book as a general, descriptive term to refer to a broad range of activities that centre on the intentioned process of learning where "experience [is constituted] as a form of knowledge" (Usher, 1993, p. 169). Using this term as the generic term is by no means to underplay other equally important terms such as experience-based education or work-integrated learning. The term experiential learning is used as it is the most commonly known term to describe these activities in Hong Kong and many parts of Asia. As this book focuses on assessment, I didn't want to turn the readers' attention to the ambiguities that arise from the conceptualisations of the experiential learning terminologies. Thus, this first chapter begins by putting together how educational scholars, teachers and students understand and experience experiential learning. This may help teachers and students *uncloud* the concept of experiential learning when they create, build and plan their own activities and focus the design on the more vital areas of "experiencing," "reflecting," "clasping," "applying" and "feedforwarding."

1.1 The Interpretation and Practice of Experiential Learning from Various Educational Researchers, Scholars and Associations

Below are some direct quotes from educational researchers, scholars and associations who have been investigating various branches of experiential learning. These direct quotes serve as a guide for teachers and a quick literature review for emergent scholars in this area.

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In the words of Lewis and Williams (1994, p. 5): "In its simplest form, experiential learning means learning from experience or learning by doing. Experiential education first immerses learners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking."

During an interview with David Kolb (2012), he said: "Experiential learning puts learning in the center of the learning process for a learner." In his book (Kolb, 1984), he commented that "Experiential learning is the process whereby knowledge is created through the transformation of experience". He interprets his ideas using his four-stage experiential learning theory, namely, concrete experience (by experiencing from prior or from new experience), reflective observation (by reflecting on the experience), abstract conceptualization (by rethinking and clasping the experience), and active experimentation (by reapplying and testing what you learnt from the experience and reflection).

Another term that is often used synonymously is "experience-based learning" (e.g., Andresen et al., 2000; Kraft, 1990; Moore, 2010). Andresen, Boud and Cohen (2000, p. 225) proclaimed "the distinguishing feature of experience-based learning (or experiential learning) is that the experience of the learner occupies central place in all considerations of teaching and learning. This experience may comprise earlier events in the life of the learner, current life events, or those arising from the learner's participation in activities implemented by teachers and facilitators. A key element of experience-based learning (henceforth referred to as EBL) is that learners analyse their experience by reflecting, evaluating and reconstructing it (sometimes individually, sometimes collectively, sometimes both) in order to draw meaning from it in the light of prior experience. This review of their experience may lead to further action."

Katula and Threnhauser (1999, p. 240) labeled experiential learning as a "process that takes place beyond the traditional classroom and that enhances the personal and intellectual growth of the student. Such education can occur in a wide variety of settings, but it usually takes on a learn-by-doing aspect that engages the student directly in the subject, work or service involved."

Work integrated learning is another term that is used widely to describe work related experience, it is "the intersection and engagement of theoretical and practice learning. The process of bringing together formal learning and productive work, or theory and practice. Constructing one system using available knowledge from several separate sources" (Cooper et al., 2010, p. xiii).

The National Society for Experiential Education (2013) included a list of eight principles for experiential learning activities: *"Intention", "Preparedness*

and Planning", "Authenticity", "Reflection", "Orientation and Training", "Monitoring and Continuous Improvement", "Assessment and Evaluation" and "Acknowledgment".

1.2 The Interpretation and Practice of Experiential Learning from Teachers around the World

Many teachers have shared their understandings and experience of what experiential learning is in programme documents and course promotional material. In order to better apprehend teachers' perceptions and appreciate their efforts in designing experiential learning activities, a list of quotes has been selectively collected from teachers through course information leaflets and videos around the world. By demonstrating a wide variety of approaches and experiences, this aims to shed some light on how teachers interpret experiential learning.

> "Nowadays, Hong Kong society and teenagers do not lack knowledge and information. What we lack is the wisdom in applying knowledge, which is important for solving problems in different settings. Experiential learning provides the perfect opportunity for students in this regard." Prof. Samson Tse (Dean of Student Affairs/Former Associate Dean, Faculty of Social Sciences, University of Hong Kong)

> "At the end of the term when they present their projects to the class, the clients and other professors, I have the privilege of witnessing how much my students have matured. They have incredible pride and increased confidence in their work." "Experiential learning and the opportunity to see my students thrive are priceless." Prof. Meral Demirbag Büyükkurt (Professor in the Department of Supply Chain and Business Technology Management, The University of Concordia)

> Anthony from the School of Public Health and Health Systems at the University of Waterloo takes her students out of the classroom so that they can have face-to-face conversations with Duff, a man who lived on the streets for more than three years. She also brings them to local shelters, and even to federal prisons. "It's intense and personal. But I want students to know that it's reality, it's their world,"; "It's also their place in the world and their responsibility as citizens to engage in the community,"; "I want my class to change the way students think about the world and about health. For better or worse, or better and worse, I want them to see the world, and their responsibilities in it, more clearly." Ms. Kelly Anthony (Lecturer, School of Public Health and Health Systems, University of Waterloo)

> "Experiential learning is intense and often messy, but that messiness helps students understand and master the concepts that they're learning in the lecture hall." Dr. Kate Trimble (Senior Associate Dean and Director, Office of Experiential Learning, Massachusetts Institute of Technology, MIT)

> "Only so much can be taught, the rest must be learned through experience." Dr. Adam Barsky (Edward Brown Award for Teaching Excellence recipient, Associate Professor, Faculty of Business and Economics, The University of Melbourne)

1.3 The Interpretation and Experience of Experiential Learning from Students around the World

With students being the "end-users," their perceptions of these experiential learning activities are probably the most important. It has long been evidenced in educational research that students' attitudes influence their motivation to engage in learning (Gardner, 1988). Prosser and Trigwell (1999) proclaimed that how students perceive their learning can determine the effectiveness of their academic learning. Their "Student Approaches to Learning" model proposes that students' perception of the learning environment will influence their adaptation of a particular approach to learning (i.e. deep or surface approaches to learning), which in turn mediates the learning outcomes achieved.

Learning outcomes of experiential learning often focus on holistic competencies,[1] and scholars have been vocal about how students' perceived importance of holistic competency development could affect their motivation to enhance these competencies (Chan & Luk, 2020; Chan, Zhao, & Luk, 2017). Students with more positive attitudes (e.g., enjoyment) demonstrate a higher level of engagement in experiential activities that lead to holistic competency development (Chan & Yeung, 2020). Thus, in the design of experiential learning activities, including assessment and feedback, it is vital to ensure a clear understanding and consideration of students' perceptions. Any mismatch or large discrepancies in their understandings, expectations and actual experience may hinder the occurrence of learning and competency development. In light of that, a list of quotes has been collected from students around the world and compiled below to help readers conceive experiential learning through the lens of students' unique angles and experiences.

> "To me, experiential learning is to touch upon the real world, and to learn about what is said to be possible in the textbooks but rarely implemented perfectly in the real world." And "I think my experiential learning experience was indeed a practical one, because I could apply what I have learnt from Public Administration, such as the collaborative dynamics between the government, the private sector and the third sector into my experiential learning experience." Karen Chung (Student, Department of Public Administration, Faculty of Social Sciences, The University of Hong Kong)

> "I have never felt more useful at university than my experience in the UNSW Human Rights Clinic. As someone not suited to conventional, classroom-style learning, the Human Rights Clinic allowed me to truly learn what it takes to start as a human rights lawyer, work in a team, and

learn from outstanding supervisors. I found the work to be extremely challenging, but always felt set up for success by the support provided by my peers and supervisors. Working specifically in migration law not only gave me a thorough understanding on a human rights issue that is always in the news, but improved my drafting and legal analysis. In all honesty, I think an experience like the HRC should be a compulsory part of a law degree." Sam Koslowski (Student, 2018, Faculty of Law, University of New South Wales)

"I want to live in a community where people care about each other. If I want that, then I have to be that. Having an opportunity where I can get guidance from my professors and learn from mistakes before starting an articling position gives me comfort – when I go into articling, I'll have the necessary experience to do a better job in an area that I wouldn't have had practical work experience in." (3rd year student, Osgoode Hall Law School, York University, cited in Council of Ontario Universities, 2014)

"I think experiential learning is interactive, it is practical and also it is very professional, so that I can get a more holistic education because it not only enforces my understanding of the theories, but it also improves my core values and my generic skills that can come in handy in my career." Molly Gu (Student, The University of Hong Kong)

"Over my one-semester abroad, I got the chance to make friends with people from all over the world. […] What's more, as a university student, I experienced the different teaching styles at Queen's University and The Chinese University of Hong Kong. I do believe that I will become more proactive, considerate, and creative from now on, thanks to my experience as an exchange student." (Student, Faculty of Science, Chinese University of Hong Kong)

"In fall of 2018, I went into Sustainability 350 not knowing what to expect. All I knew was that I would be required to volunteer at Ginkgo Organic Garden. What started out as 'extra work' quickly turned into an experience that changed my life. I learned about all the different areas of sustainability while committing myself to helping our environment. Lifelong friends were made, and I still volunteer on my own time because it makes me feel good to know I can make a difference. Help because you want to, not because you are being asked to. You will feel the change." (Student, Human Resource Management programme, Roosevelt University, 2021)

1.4 Criticisms on Experiential Learning

There are a lot of ambiguities in the conceptualisations of the term "experiential learning," particularly from the researchers' perspectives. Researchers have argued that the conceptualisations of experiential learning are not robust enough to support the variety of factors that occur in learning by experience. Below I

present some criticisms from researchers so that readers can receive an unbiased picture. Experiential learning

- tends to focus on retrospective reflection, fails to address the "here and now" experience (Vince, 1998);
- fails to account for social, political-cultural and institutional influences on the learning process (Reynolds, 1999);
- places too much emphasis on the role of the individual learner and decontextualises the learning process (Holman et al., 1997);
- does not take into consideration the role of a learner's intention and desire in learning. The focus on cognitive reflection is simplistic (Britzman, 1998);
- does not account for the interaction between cognition and the environment, how each individual's cognition converges with others,' or "how individual knowledge co-emerges with collective knowledge" (Fenwick, 2000, p. 263).

Researchers who are interested in deepening their knowledge on the precise conceptualisation of the terms used for experiential learning and the criticisms that arise from them should consult the articles above.

1.5 Types of Experiential Learning

Experiential learning can be divided into two major categories – those occurring outside of the classroom known as field-based experiences, and those occurring inside the classroom, often during class time, known as classroom-based learning.

Field-Based Learning was first found integrated into higher education in the 1930s. Field-based learning includes experiences such as internships, clinical experiences, research and practical fellowships, apprenticeships, student exchanges, undergraduate research, practicums, cooperative education, service learning and community-based learning. Activities that bring together academic learning and practical application of theory such as internships, practicums, service learning and clinical experiences are also known as work integrated learning or work-based learning. While work integrated learning is increasingly becoming a distinct field of research and practice, it is fundamentally based on the principles of learning through reflection, making sense of experiences and situated learning (Cooper et al., 2010). Hence, work integrated or work-based learning activities are included as part of field-based experiential learning in this book.

Classroom-Based Learning can also be considered as experiential learning according to Lewis and Williams (1994). Classroom-based experiential learning includes role-playing, games, case studies, simulations, presentations, debates, discussions, hands-on technology and various types of group work. However, with the evolving nature of pedagogies, these types of experiential learning are now considered more as pedagogies for active learning.

In this book, I will mainly focus on the assessment of field-based experiential learning activities, although some assessment practices with a little bit of imagination

can also be used for classroom-based learning activities. Sometimes, there is no precise boundary in categorising the types of experiential learning activities.

1.6 Benefits of Experiential Learning to Different Stakeholders

Depending on whose perspectives you are adopting, there will be different benefits associated with experiential learning. There now exist ample funding opportunities for universities, communities, corporations, teachers and even students to propose diverse learning experiences. Shell Canada, an oil and gas company, initiated the Shell Canada's Campus Ambassador Programme that offers funding for students in many Canadian universities to provide opportunities for their hands-on experience (Dalhousie University, 2015; University of Alberta, 2021; University of British Columbia, 2014; University of Calgary, 2016). The packages may include cash rewards and subsidies for travelling and activities organised by clubs and societies, with the priorities given to ones with objectives to improve students' educational experience in relevant areas of Shell's business (e.g., engineering, energy, sustainable energy, environment and economy issues), as well as opportunities to engage with the community at large. At the University of Hong Kong, experiential learning is a graduation requirement, and undergraduate students must engage in one overseas and one Mainland China learning experience to broaden their horizons and promote internationalisation (The University of Hong Kong, 2021). Support and funding resources for faculties and students to experience "educationally rich" real-life problem-solving activities (Gallant Ho Experiential Learning Centre, 2021) are available. The University of Hong Kong also provides teaching development grants for teachers to design projects and activities that will have an impact on the strategic development and promotion of teaching and learning; and experiential learning is marked as a priority area and a distinctive feature of the University's undergraduate curriculum. Residential colleges are often allocated funding resources for experiential learning, enabling residents to organise programmes that benefit competency development. At the University of Macau, a full residential collegiate system similar to that of Oxford, Cambridge and Yale has been implemented. Ample experiential learning activities are organised within the residential colleges to build competencies such as leadership, citizenship with global outlooks and teamwork (University of Macau, 2021).

With abundant schemes funded by governments, corporations and universities, grant proposers often require the applicants to identify benefits associated with their proposed projects. In this section, I provide a comprehensive list of possible benefits for different stakeholders in their proposals, using appropriate teaching and learning terminologies.

Benefits for Universities (Boose, 2004; Faculty of Health University of York, n.d.; Fenton & Gallant, 2016; Ngai, 2006; Panet al., 2018; University of New Brunswick, 2014)

- Increase student recruitment and retention by deepening student experiences;
- Enhance reputation among students in the network of employers;
- Promote university's image as socially responsible, in particular when students are involved in community and service learning;
- Maintain network with alumni through partnership with their companies;
- Increase graduate employment as students are better prepared for work, and may even secure employment opportunities during internships, fellowships and services, etc.;
- Secure partnership opportunities and financial support from community or corporate partners;
- Publicise their pedagogical innovation which may lead to further government funding;
- Develop international network;
- Enhance university reputation by promoting diverse active authentic pedagogies.

Benefits for Teachers (Boose, 2004; Cantor, 1995; Faculty of Health University of York, n.d.; Fenton & Gallant, 2016; Ngai, 2006; Pan et al., 2018; University of New Brunswick, 2014)

- Reignite teacher's love of teaching as they provide meaningful education to students;
- Learn new approaches to interact with students;
- Apply new pedagogical approaches to students who have non-traditional learning styles;
- Guide students to achieve a deeper understanding of course concepts and their applications;
- Enhance and maintain student engagement, motivation and participation, which in turn lead to teacher fulfilment;
- Obtain rich data, research insights and connections which are possibly useful for future research;
- Enhance teacher satisfaction as experiential learning often gives teachers greater satisfaction than traditional teaching approaches;
- Provide opportunities for teachers to meet with potential research industrial partners;
- Senior management often values teachers who have industrial and community network;
- Often attract funding opportunities and even teaching award recognition due to the innovativeness and workload of experiential learning.

Benefits for Students (Boose, 2004; Faculty of Health University of York, n.d.; Fenton and Gallant, 2016; Ngai, 2006; Pan et al., 2018; University of New Brunswick, 2014)

- Enhance academic motivation and engagement through bridging the gap between academic knowledge and the authentic world, hence encouraging self-directed learning;

- Increase clarity about academic goals and career expectations;
- Appreciate other cultures and people from different backgrounds;
- Develop professional networks and gain potential employment opportunities;
- Gain real-world experiences, obtain information on selected career fields and build network;
- Enhance holistic competencies (including cognitive competencies, values and attitudes) as well as specific skills (technical and professional skills);
- Develop self-confidence and maturity;
- Improve academic performance.

Studies have shown modest or no differences between students with experiential learning experiences and those without (Strage, 2000). Although it is often reflected that experiential learning students outperform non-experiential learning students in the same course (Freeman et al., 2014), it is unfair to say all types of experiential learning benefit students in terms of their academic performances. Moreover, even if experiential learning improves students' grades, it is unlikely due to the enhanced mastery of course knowledge, but a deeper understanding and a better application of academic knowledge in the real world (Eyler & Halteman, 1981, as cited in Strage, 2000) and an improved attitude towards learning.

1.7 Primary Purposes of Experiential Learning – Enhancing Student Learning

Experiential learning brings together student learning opportunities that are otherwise difficult to provide in a normal classroom setting. The primary benefits are that it enhances student learning in areas of "relevancy", "holistic competency development," "reflection," "meaningful feedback," "value mistakes" and "actual experience".

Relevancy – students often criticise the university curriculum for being irrelevant to the real-world for example, "too many theories, not enough practice," "too conceptual," "teachers do not know what is going on in the real-world," "my professor is still teaching me something that was used twenty years ago" – these criticisms can be found in many student experience evaluation reports in universities. Teachers are sometimes bounded by policies of the accreditation bodies or universities and may find it difficult to introduce a curriculum which is more "authentic" and "relevant." Experiential learning differs in that it allows students to take what they have learnt and apply them first-hand. The learning processes, either good or bad, are more meaningful for them as they experience them and develop their own relevance.

Holistic Competency Development – In a classroom, students are often given known solutions to problems, but in life, most problems are ill-defined and some may not even have solutions. Experiential learning trains students to be creative, to think critically, to work in teams (in most of our lifetime, we work in teams: as parents, as siblings and as teammates), to solve problems, to find ways to deal

with oneself and be resilient if the problems do not have solutions. Thus, holistic competencies are not just for students' careers, but more importantly, for their personal life. Competency development is much more feasible in experiential learning activities for students to make meaning out of it.

Guide by Reflection – experiential learning encourages spontaneous and intentional reflection that is not necessarily by design. For example, when students work with each other in a community project at an elderly home, they witness and experience something unfamiliar to them. Some may go home and reflect on what they witnessed, others may even discuss with each other the issues that impressed or confused them. In a classroom, this kind of reflection is rare unless by design. By the nature of experiential learning activities, it is common for the learners to reflect, hence better understanding the concepts, theories and situations to which they are exposed. Such reflection will guide their learning.

Meaningful Feedback – in most experiential learning theories or frameworks, feedback is often dismissed. In the classroom, teachers can provide, or assign a person to provide feedback, resulting in a more defined process. The person providing feedback may be the teacher, the tutor, a peer or even the student themselves. In experiential learning, this is less defined. Coming back from an elderly home community project, discussions among students provide them with valuable peer feedback; students who go home and talk to their parents may also receive feedback from them. The feedback received is often not generated intentionally in a formulaic manner, but rather organically through the day-to-day experiential learning experience that students have lived. To ensure high-quality feedback, teachers can design experiential learning activities that include innovative feedback mechanisms such as peer mentoring.

Mistakes are Valuable – In life, trial and error cannot be avoided. Students should be given opportunities to make mistakes, to learn not to fear them, but to find value in them instead. The process of learning is more important than the results. Experiential learning allows that.

Actual Experience – Practice makes perfect – that is a fact. Each student has unique prior experiences and personalities, and how they interpret and interact with their experience varies. In experiential learning, teachers and parents have to learn how to let go and allow our students to learn and develop by experiencing. That is the actual value within experiential learning.

1.8 Challenges of Experiential Learning to Different Stakeholders

Following the list of benefits of experiential learning, a list of challenges is provided below for grant reviewers and different stakeholders to make aware of the challenges that they may face if experiential learning activities are to be implemented.

Challenges for Universities (Fenton and Gallant, 2016; Pan, Seow, and Koh, 2018)

- Experiential learning is often resource- and labour-intensive; universities need to invest in hiring relevant professionals, develop partnerships and provide support for professional development;
- Significant structural changes in the curriculum, which leads to a large amount of administrative work;
- Safety measures and insurance need to be put in place;
- Tensions between the call for the development of experiential education and the emphasis on research and publications.

Challenges for Teachers (Austin & Rust, 2015; Fenton & Gallant, 2016; Pan et al., Koh, 2018)

- Accommodate changes in long-standing teaching practices;
- Workload often concentrates on the organisation of the activity;
- Constant and unexpected changes may arise in the course of the activity;
- More guidance for students is needed;
- More time commitment and workload required, especially when the curriculum is first implemented;
- Difficulties in ensuring the quality of experiential learning programmes and the delivery of learning outcomes;
- Tensions between research and heavier workload for experiential education;
- Difficulties in developing mechanisms for assessment and evaluation, such as setting assessment rubrics and maintaining consistency;
- The teacher's role is different in experiential learning activities and they have less control.

Challenges for Students (Fenton & Gallant, 2016; Pan et al. 2018)

- More time and effort required than the conventional mode of learning;
- Frustration with new teaching and learning styles, different learning environments and unfamiliar assessment standards;
- More responsibility for their own learning;
- Some students may be unable to understand the benefits of experiential learning or why they are participating in some activities;
- Students (both high or low performance) often dislike group work and collaboration (Chang & Brickman, 2018; Matthews, 1992).

Benefits seem to outweigh challenges for different stakeholders, particularly for students, to enhance learning. The weight of each challenge may differ depending on the individual university, teacher and student. Only the individual stakeholder can judge this weight and consider if the cost of challenges outweighs that of benefits for them.

Conclusions

In its simplest form,

> "Experiential learning is learning by doing."

With the varied definitions and experiences of experiential learning interpreted by the different stakeholders, the author hereby concludes with some common features and effective practices of experiential learning to help readers develop their own understanding of experiential learning.

The Must-Have Features of Experiential Learning

1 Doing must be part of the learning process;
2 Experiencing must be part of the learning process;
3 Observing must be part of the learning process;
4 Reflecting must be part of the learning process;
5 Relevancy to the real world must be part of the learning process;
6 Previous experiences and knowledge must be considered and be part of the learning process;
7 Allowing for trial and error must be part of the learning process;
8 Experiential learning is a continuous process.

Recommended Practices in the Implementation of Experiential Learning

1 The learning outcomes are not set in stone. Students should be allowed to identify new knowledge and skills, reflect on them as they learn, **rethink**, **relearn**, **reapply** and **re-experience;**
2 Experiential learning should allow students to have ownership and responsibility for their self-directed learning;
3 Holistic competencies are often best developed within experiential learning; thus, teachers should embrace them in the design of the activities;
4 Effective experiential learning often happens outside the classroom;
5 Learning may occur without the need for textbooks or lectures;
6 Experiential learning changes the role of teachers into facilitators;
7 Opportunities to practice should be integrated into the learning and not as a one-off experience;
8 The rationale for participation in the activity is important, so make it personally relevant;
9 Teachers should make the learning process meaningful;
10 If learning is to be assessed, meaningful outcomes and clear criteria need to be in place;
11 Without feedback integrated into the learning process, the learning will be delayed and not constructive to student learning and competency development.

According to Chapman et al. (1995, p. 243):

> "Simple participation in a prescribed set of learning experiences does not make something experiential. The experiential methodology is not linear, cyclical, or even patterned. It is a series of working principles, all of which are equally important or must be present to varying degrees at some time during experiential learning. These principles are required no matter what activity the student is engaged in or where the learning takes place".

Questions to Ponder

- Why would you use experiential learning to enhance your student's learning?
- What are the main purposes of your experiential learning activity?
- What challenges might you and your students encounter?
- Does your experiential learning programme have must-have features?

Personal Reflection

In this chapter, I provided considerable information from the perspectives of different stakeholders to demonstrate what experiential learning is or is not. Personally, I don't think the definition or the terminology used for experiential learning from one renowned scholar or another should set the boundaries of what learning should be or determine how teachers design their experiential learning course or project. Like experiential learning, education needs to constantly **reflect**, **relearn**, **react**, **reinvent**, **reform** and **reapply** to prepare future teachers, students and citizens. Future universities cannot work in isolation on research or teaching; these university missions require students, industries and the communities to work closely to create the future society.

Note

1 Holistic competency is defined by the authors (Chan & Yeung, 2020) as an umbrella term for generic skills (e.g. teamwork, self-management and creativity), attitudes (e.g. resilience and hardworking) and virtues (e.g. respect, honesty and dignity).

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2 Experiential Learning Theories and Frameworks

> With academic knowledge, there is deep and surface approach to learning, with holistic competency, there is engagement and avoidance approach to development.
> – Chan, CKY

Introduction

Understanding the history of experiential learning and how it came about in education may sometimes provide us with thought-provoking perspectives. The interrelationship and connectedness between frameworks, built upon a combination of theories, can help teachers and scholars find their own paths in designing their curricula or research studies. In fact, the general concept of learning through experience has been around for a long time – philosophers and scholars from East to West have long identified that "*to learn is to do.*" The renowned Chinese philosopher **Confucius** (520 BC) presented us with an important message about learning:

> "I hear and I forget. I see and I remember. I do and I understand."

Relating this simple quote to some of our current teaching and learning approaches tells us that if students passively listen to a lecture, most knowledge (in a colloquial sense) will go in one ear and out the other. Watching a video or a PowerPoint presentation may make things a bit more interesting and memorable, but for learning to truly take place, experience and practice are needed. **Aristotle** also wrote in the Nichomachean Ethics over 2,300 years ago (i.e. about 350 BC):

> "for the things we have to learn before we can do them, we learn by doing them",

which echoed Confucius's concept. Another Chinese philosopher, **Zhu Xi** (1130–1200), crystallises the essence of experiential learning:

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> "When you know something, but you don't act on it, your knowledge of it is still superficial. After you've personally experienced it, your knowledge of it will be much clearer and its significance will be different from what it used to be."
>
> Zhu Xi (Gallant Ho Experiential Learning Centre, 2021)

Zhu Xi's interpretation resembles what experiential learning portrays in education today.

"*Learning by doing*" is the central concept in the education theory of the influential American educationist, **John Dewey**. Dewey is known as the father of the progressive education movement. Part of the progressive educational movement is constructivism. Constructivism as a paradigm posits that learning is an active, deep and constructive process in contrast to the rote and didactic approach. Dewey hypothesised that learning is the construction of experiences and constructivism is the theory of learning in which the user/learner/participant creates personal learning outcomes through their experience and reflection on previous experiences. He believes that experience, inquiry and reflection are the key elements of experiential learning. Dewey also pushed for education reforms to be grounded in real authentic experience, as he wrote in the following (Dewey, 1938),

> "If you have doubts about how learning happens, engage in sustained inquiry: study, ponder, consider alternative possibilities and arrive at your belief grounded in evidence."

Other educational psychologists such as Kurt Lewin, Jean Piaget, Lev Vygotsky, Carl Jung, Paulo Friere and William James also place experience as the centre of their learning theories. Piaget (1999) emphasises learning as a lifelong process of discovering knowledge, and the assimilation and accommodation of learning from experience and knowledge. Lewin (1946) coined the term "action research" and described it as a "circle of planning, action and fact-finding about the result of the action."

2.1 Dale's Cone of Experience

Edgar Dale theorised a model known as "Cone of Experience" (Dale, 1946). His model resonates with Confucius' philosophy discussed above such that learners retain information best when they "do" things during concrete, direct and purposeful experiences (experience closest to real life).

Learning experiences according to Dale's Cone of Experience can be categorised into three modes in a progression (i.e. enactive, iconic and symbolic; Bruner, 1966). The Cone visualises how different learning experiences can be categorised and ranked in terms of their concreteness (at the base) and abstractness (at the peak). "Concreteness" and "abstractness" here refer to how directly learners experience their learning. When learners experience their learning more

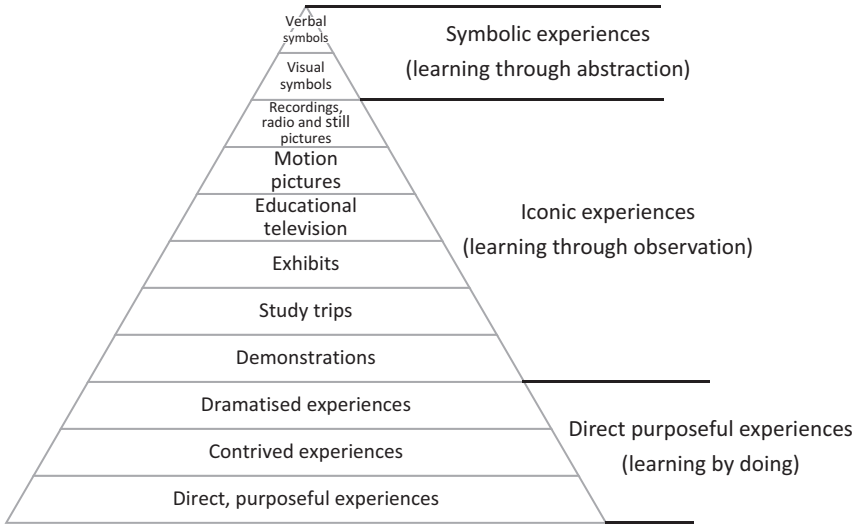

Figure 2.1 Dale's cone of experience.

directly (e.g., doing something and sensing something using five senses), the learning is more "concrete." In contrast, when learners learn more distantly (e.g., relying only on reading reference texts), the learning is more "abstract." Dale's Cone of Experience is shown in Figure 2.1.

Learning experiences can then be broadly categorised into three groups, from the most concrete to the most abstract:

i ***Learning by doing*** means that learners learn through hands-on tasks. Learning of this kind is closely related to real experiences in which learners can actively engage. For example, if an instructor wants the learners to understand more about low-cost water filtering systems, the instructor can provide water filtering equipment and ask them to conduct an experiment to distinguish between a high- and low-cost filtering system. The instructor can guide this experiment by inviting students to solve a real-life problem such as: "Poor water quality in developing countries is threatening their people's health. What can we do?"

ii ***Learning through observation*** means that learners learn through observing how people do something. Learning of this kind is more distant from real experiences but still preserves some elements of authenticity to which the learners can easily relate. For example, the same instructor can show the learners documentaries on how water filtering systems are built in developing countries and ask the learners to improve such systems based on what they have observed.

iii ***Learning through abstraction*** means that learners learn only through reading visual symbols (e.g., written texts) and listening to verbal symbols (e.g., spoken language). Learning of this kind is most distant from real experiences, and it is, therefore, more difficult for learners to actively engage in their learning experiences. For example, the instructor can ask the learners to read a textbook chapter about low-cost water filtering systems and ask questions to check their understanding.

2.1.1 Criticisms of Dale's Cone of Experience (CoE)

The Cone of Experience (CoE) has never been properly proven and is often challenged by scholars who tried to debunk "the corrupted CoE," insisting that the pyramid conveys no rank order (Lee & Reeves, 2007; Molenda, 2003). However, I personally find this "cone" very intuitive as the visual model is simple and clear for teachers and learners to understand and can be applied broadly.

2.2 Kolb's Experiential Learning Theory

Building on the theories of Dewey, Lewin and Piaget, Kolb explored the processes associated with the perceptions of concrete experiences and the different types of learning styles associated with each process. He developed a holistic model of the experiential learning process that is known as the Kolb's Experiential Learning Theory.

Kolb's theory has widely informed programme and curriculum development in various institutions across the world. It has provided a general framework for designing fieldwork in many disciplines (e.g., Abdulwahed & Nagy, 2009; Healey & Jenkins, 2000; McNamara, 2015; Valentine & Speece, 2002). These programmes have incorporated elements using a variety of approaches, such as group work, simulation, application of theories and reflection. These approaches take students through the experiential learning cycle, which, in turn, improve their learning outcomes related to both academic knowledge and holistic competency.[1]

Kolb's theories consist of three main parts, all of which are based on constructivist ideology. First are the principles that guide the theory. There are six principle assumptions of learning that Kolb built upon a series of work from educational scholars that form the basis of his experiential learning theory. Second is the experiential learning theory itself, which involves four stages through which learners progress by assimilating knowledge and competencies during their learning experiences. The last part is about four basic learning styles.

2.2.1 The Six Principles of Experiential Learning

The six principles of experiential learning include:

- Learning as a process
- Learning is relearning
- Emotional reflection

- Holistic learning
- Environment learning
- Constructivism

Learning as a process. Learning is a continuous process grounded in experience. Knowledge is continuously derived and tested out in learners' experiences. It is best to assume that learning is without an end. Kolb does not believe in looking at learning in terms of outcomes. Instead, he believes that educators should focus on improving the students' learning experience by scaffolding students to empower them towards obtaining information and developing a good grasp of the material. In sum, learning is best conceived as a process, not in terms of outcomes.

Learning is relearning. Students must learn, refine, and relearn, as learning is a continuous process with no starting point and no end point.

Emotional reflection. Learning often requires resolution of conflicts between opposing models of adaptation to the world. That is, learners must move between opposing modes of reflection, action, feeling and thinking. Thus, to truly learn, internal and external agreements, conflicts and disagreements may exist and drive the learning process. Learners have to consider multiple perspectives, critique them and finally, make their own judgement based on their previous experiences or preferences. While this may often result in an internal struggle in the learners' own beliefs, it is learning in progress.

Holistic learning. Learning is a holistic process. It is not simply a cognitive process in which students gain knowledge but also encompasses how the learners behave, think, feel and perceive their feelings, thoughts and reflection. For example, from the emotional reflection principle, the process of internal and external struggles and experiences can often uncover the holistic person from within the learner.

Environment learning. Learning results from synergetic transactions between the person and the environment. The learner does this by merging new experiences into established concepts, which allows the learner to grow and adapt to new experiences in novel environments. Learners may perceive the same event differently based on their previous experience. Or alternatively, the same student may experience the same situation differently due to different environments and contexts (e.g., different people, different places and different interactions). Environment changes the perceived learning.

Constructivism. Learning is the process of creating knowledge, which is understood as the result of the transaction between social knowledge and personal knowledge. As every learner has different prior experience and their experiences are constantly transforming depending on their emotions, attitudes or environments, constructive learning inspires unique viewpoints, processes and learning for each learner.

2.2.2 Experiential Learning Theory (ELT)

Kolb (1984) postulates a four-stage recursive experiential learning cycle that consists of concrete experience (CE), reflective observation (RO), abstract conceptualisation (AC) and active experimentation (AE), i.e. experiencing, reflecting, thinking and acting (Kolb & Kolb, 2009, p. 297) (see Figure 2.2). Together with the six principles, ELT emphasises the importance of prior knowledge, engagement with concrete experience where prior knowledge can be put into practice, reflections on the experience, forming theories about the experience, and engagement with new experience where the theories can be tested (Kolb, 1984). In layman's terms, the cycle has four steps – you do something, you reflect upon that action, and based on that reflection, you conclude and modify your understanding before doing that activity or related activities again to see if you have improved, and followed by a further reflection. Kolb has generalised the terms so that students can experience, reflect, think and adapt as they experience their learning and at the same time, transfer Kolb's theory into different disciplines and environments.

According to Kolb and Kolb (2013), learning occurs in the "resolution of creative tension among these four learning modes" (p. 8). It is an "idealized learning cycle or spiral where the learner 'touches all the bases'—experiencing (CE), reflecting (RO), thinking (AC), and acting (AE)—in a recursive process that is sensitive to the learning situation and what is being learned" (p. 8). In short, in an ideal situation, the learner should be given opportunities and an appropriate environment to experience, reflect, think and act; it may not necessarily begin from CE, but learning will be at its best if all the four elements in the cycle are executed.

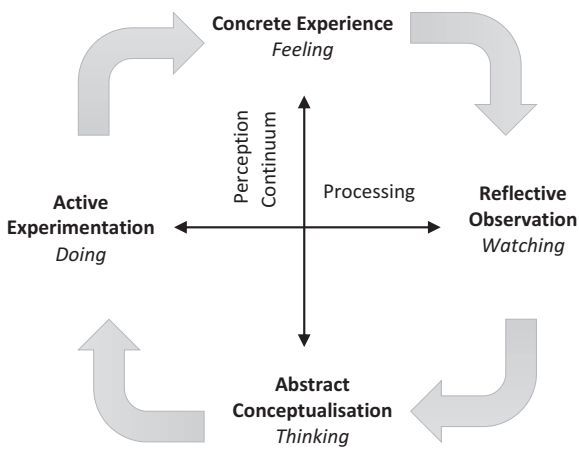

Figure 2.2 Kolb's experiential learning theory and learning styles.

2.2.3 Kolb's Learning Styles

The learning cycle proposed by Kolb is based on two continuums forming four quadrants. The Processing Continuum, portraying the duality of active experimentation and reflective observation, refers to the learner's personal approaches to a task. The Perception Continuum, which captures the duality of concrete experience and abstract conceptualisation, refers to the learner's emotional response. The four distinct stages along the continuums, as mentioned, are active experimentation, reflective observation, concrete experience and abstract conceptualisation. Kolb views the learning process as people moving along the two continuums, and the effectiveness of learning depends on the balance between these stages. In ELT, Kolb believes that a learner cannot perform on both ends of a continuum, and the learning styles of learners would fall into either one of the quadrants. Referring to the four stages identified, Kolb proposed four learning styles:

- Diverging (concrete, reflective) – This learning style emphasises an innovative and imaginative approach in learning and favours observation rather than action. Learners of this style look at things from different perspectives, gather information and solve problems through imagination.
- Assimilating (abstract, reflective) – This learning style compiles different observations and thoughts to form an integrated view of an event. Learners of this style adopt a concise and logical approach and prefer clear explanations in learning over practical opportunities.
- Converging (abstract, active) – This learning style emphasises the practical application of ideas and problem-solving. Learners of this style prefer technical tasks and look for practical applications of ideas.
- Accommodating (concrete, active) – This learning style is defined by solving problems through trial and error. Learners of this style rely on intuition and take practical and experiential approaches to solve problems.

In designing a cycle of experiential learning, Kolb's learning theory sets out four learning styles based on the four-stage cycle. The learning styles are not fixed personality traits, but rather behavioural patterns in learning, which could be seen as learning preferences. The learning styles theorise how people prefer to learn and help learners identify themselves within the learning cycle.

2.2.4 Criticisms of Kolb's ELT

Kolb's ELT is one of the most renowned experiential learning models used in education today, and there are many adaptations and applications of the model. The model is widely adapted partly due to the absence of other simple and clear experiential learning models. In fact, many scholars have criticised ELT for being too narrow, underdeveloped, and loosely explained to be employed effectively in curriculum design (Heron, 1992); this may explain why so many different

definitions and types of experiential learning existed today. Rogers (1996, p. 108) pointed out that "learning includes goals, purposes, intentions, choice and decision-making, and it is not at all clear where these elements fit into the learning cycle."

The circular model often gives the impression that the stages are equal in time and weight. Bergsteiner et al. (2010) argued that Kolb's model is fraught with modelling issues such as graphic syntax errors, categorisation problems, and misconstrued bi-polarities; while Boud et al. (1985) remarked that the key stage of observation and reflection is not sufficiently explained to illustrate what reflection entails. Further, the stepwise cycle is believed to be too simplistic to capture the reality of complex experiences (Ord & Leather, 2011). As Hovelynck (2001) demonstrated in a study of outdoor education, the practice theories educators develop can more accurately reflect their work; whereas a stepwise, cyclical process of experiential learning "might actually inform practice only superficially" (Seaman, 2008, p. 9).

In addition, Kolb's ELT appears to be primarily centred on cognitivism, meaning that an individual is viewed as a separate entity from his/her environment (Holman et al., 1997). The cognitivist perspective means that the theory overemphasises individual experience at the expense of social relations, and thus it does not account for how unequal power relationships can affect the way people talk about their experiences (Vince, 1998). As Fenwick (2000) pointed out, Kolb's ELT lacks the ability to explain learning in a social context where individual knowledge often converges and co-emerges with collective knowledge. In experiential learning, social interactions of a learner are very important to the development of self, thought and learning, particularly for young adults. Culture, prior experience, social pressure and yearnings could greatly impact how learning is developed and enhanced.

With regard to the learning styles, the learning style inventory based on ELT has also been criticised for lacking validity and reliability (Coffield et al., 2004; Freedman & Stumpf, 1980). In principle, it is always difficult to generalise or characterise people into types, learners have "profiles (or patterns) of styles, not just a single style" (Sternberg, 1997, p. 83). There are many factors that may change the approach a learner takes; in short, human anthropology is complicated.

2.3 Experiential Learning Models Targeting the Development of Holistic Competency

Experiential learning often targets not only academic knowledge but also the development and enhancement of holistic competency. Holistic competency is difficult to develop in conventional classroom environments, but is relatively easier to develop in experiential learning activities where students make meaning out of their participation (Chan, 2012, 2012b). I collected data from over 4,500 students across multiple universities in Hong Kong, and 86% of them agreed that holistic competency is better developed through out-of-classroom activities (e.g. internship, field trip, living in halls, joining societies and part-time

Figure 2.3 Tag cloud visualisation of the preferred methods for the development of competency from students' perspectives.

work) than in-class activities. Figure 2.3 shows a tag cloud visualisation presenting the preferred methods of competency development from students' perspectives. Table 2.1 shows a classification of the types of learning activities (in-class, out-of-class and extra-curricular) that are often used for the development of holistic competency in university.

2.3.1 Challenges in the Development and Implementation of Holistic Competency

My team and I (Chan et al., 2017) conducted a literature review on 56 journal papers published in the last two decades and raised three main areas that pose the most challenges to developing and implementing holistic competency in higher education. Figure 2.4 shows a diagrammatic representation of the challenges found.

First and foremost, although many universities have incorporated competency development into their graduate attributes, there has been inadequate institutional and curriculum support. While some universities believe it is not their responsibility to offer holistic competency training (Dunne et al., 1997), others find it difficult to launch a curriculum that closely aligns with the rapid-changing nature of these competencies (Jackling & De Lange, 2009; Jackson, 2016), especially in a context of the ever-increasing number of students and when large classes and summative assessment are preferred (Bunney et al., 2015; Yorke & Harvey, 2005). Additionally, teachers have not received sufficient training

Table 2.1 Classification of the types of learning activities (in-class, out-of-class and extra-curricular) for the development of holistic competency in university

Classification of learning activities and opportunities for holistic competencies development			
Academic related	Discipline-specific	Out-of-class	E.g. community service learning*; field trips*; internships*; work placements*; student exchange*; student teaching*;
		In-class	E.g. capstone projects*; problem-based learning (PBL) *; presentations*; clinical and non-clinical practicums*; laboratory*; research fellowship*; group projects*; workshops*
	Non-discipline specific	Extra-curricular	E.g. common core courses*; residential education; camps; general education*; student societies and clubs; workshops and guest speakers; sports activities; career guidance; entrepreneurship-related activities/competition; externship; community service learning; field trips; internships; work placements.
Non-academic related			E.g. experiences in daily life; work experiences; interactions with friends and family; charity and non-profit organisation participation; media, internet and socialisation

* Maybe credit bearing.

with regard to developing students' holistic competency (Bunney et al., 2015; Chan, 2012a).

There are also palpable operational challenges, mainly concerning the nebulous holistic competency conceptualisation, ineffective teaching pedagogies and difficulties in assessment. Due to a plethora of related items used interchangeably with competency and a lack of a standardised list of what these competencies exactly include (Barrie, 2005, 2012), it is difficult to achieve a clear conceptual base for competency development. While research has supported active learning and extracurricular events as effective ways to promote holistic competency development (Chan & Yeung, 2020; Kember et al., 2007), the actualisation of these pedagogies, however, often faces resistance from students and teachers (Chan, 2012b; Green et al., 2009). Apart from pedagogies, the assessment of competency is also highly contestable. Some scholars criticised that holistic competency is rarely assessed and is hidden in the curriculum (Badcock, Pattison, & Harris, 2010), others questioned the validity, reliability, and feasibility of assessing competency (Hughes & Barrie, 2010). In some exam-oriented cultures, assessment may cause students to eventually lose interest in holistic competency if they are developed mainly for grading and evaluation purposes (Chan & Yeung, 2021). That being said, the dilemma is

that, without formal assessment, it is less likely that teachers and students will take holistic competency development seriously in an already tight curricular schedule (Chan & Chen, 2021; Chan & Luk, 2021b).

Furthermore, various perceptions and scepticism of holistic competency from students and teachers also present challenges. In higher education where research outputs are often considered more vital when associated with recruitment and promotion, teachers tend to give more priority to research over teaching and are reluctant to adopt innovative teaching approaches in favour of competency development due to extra workload (Drummond et al., 1998). Some teachers even view the development of holistic competency as an item on a "checklist" imposed by the university (Krause, 2014). As for students, while they recognise the need to acquire academic knowledge, they tend to perceive competency development as "time-consuming" and irrelevant to their study (Dunne et al., 1997; Hughes & Barrie, 2010). Even for those who do realise the importance of holistic competency, their undergraduate career has not effectively fostered their competency development (De La Harpe et al., 2000).

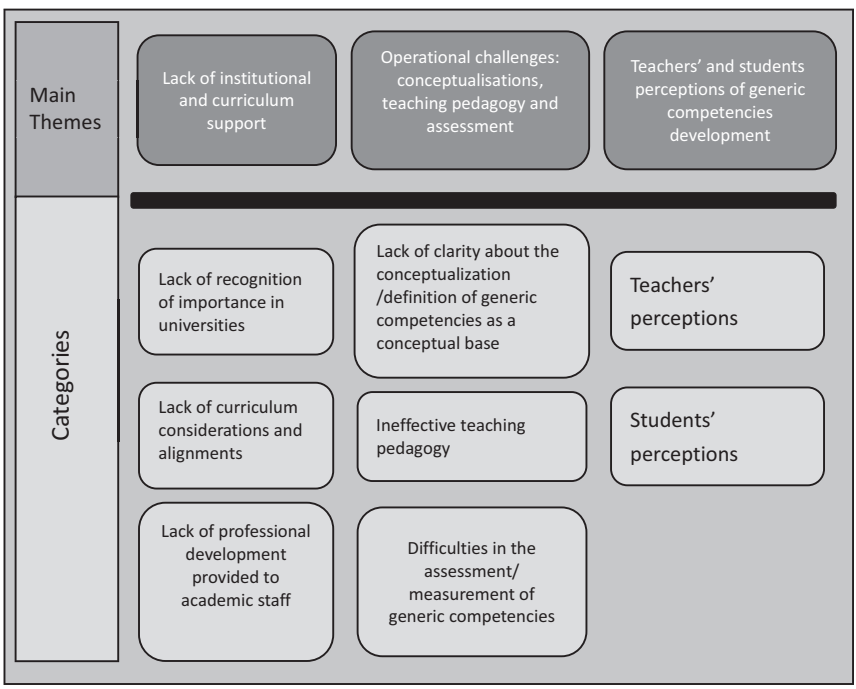

Figure 2.4 A review of literature on challenges in the development and implementation of holistic competency in higher education curriculum (Chan et al., 2017).

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To address these challenges, the authors argued that self-motivation in holistic competency development will be crucial for teachers and students, who should better recognise the importance of holistic competency. A more reliable and systematic competency assessment, reporting and recognition mechanism is also necessary to further promote learning and provide evidence (Chan & Chen, 2021; Chan & Luk, 2021a; Chan & Luo, 2021). Meanwhile, increased institutional support is required to ensure that teaching pedagogies and student experience are aligned with holistic competency development.

2.4 Holistic Competency Development Framework (HCDF) – Approach to Develop

As discussed above, holistic competency is often developed through extracurricular events. These events are typically non-credit-based and do not count towards summative assessment. To explain students' approach to developing holistic competency, a Holistic Competency Development Framework (HCDF) (see Figure 2.6) was deduced and validated (Chan & Yeung, 2020). The framework has five key components that are fundamental to students' approach to holistic competency development: (1) learner character; (2) rationale for developing; (3) students' actual learning experience, and their perceptions and interpretations based on their experience; (4) students' approaches to developing holistic competency; and (5) learners' development of holistic competency as outcomes (Chan & Yeung, 2020).

The HCDF is an adaption of Bigg's 3P model (1987). It was argued that traditional learning processes such as the 3P model do not apply to holistic competency development, because learners who are deep learners in the academic context do not necessarily become deep learners in holistic competency education. Thus, the words "deep" and "surface" with respect to academic knowledge are unsuitable in the holistic competency context. Often, it is those deep learners who are strong academically but tend to *avoid* the development of holistic competency – they may not *engage* in experiential learning activities as they feel that these engagements are obstacles to their real goals (i.e. grades) in academia. Consequently, a new term – "Approach to Develop" (Chan & Yeung, 2020) was coined – this is as opposed to "Approach to Learn," and tailored for conceptualising and quantifying learners' engagement in experiential learning leading to the development of holistic competency. The constituents "deep" and "surface" approaches associated with 3P from Biggs and Tang (2011), Entwistle (1988), Ramsden (1992) and Prosser and Trigwell (1999) in student's "Approach to Learning" are replaced by "engage" and "avoid" in students' "Approach to Developing." A learner is considered as an "engager" if they take the opportunity to engage in an activity; the development of competencies is welcomed and practiced. A learner is considered as an "avoider" if they avoid an activity and thus leave little room for competency development.

When teachers or coordinators design an experiential learning course or activity, the HCDF framework helps the course designer through a student-centred

Table 2.2 Learn vs develop student approaches

Academic Knowledge	*vs*	*Holistic Competency*
Learn		Develop
Approach to learn "Deep" and "Surface"	vs	Approach to develop "Engage" and "Avoid"

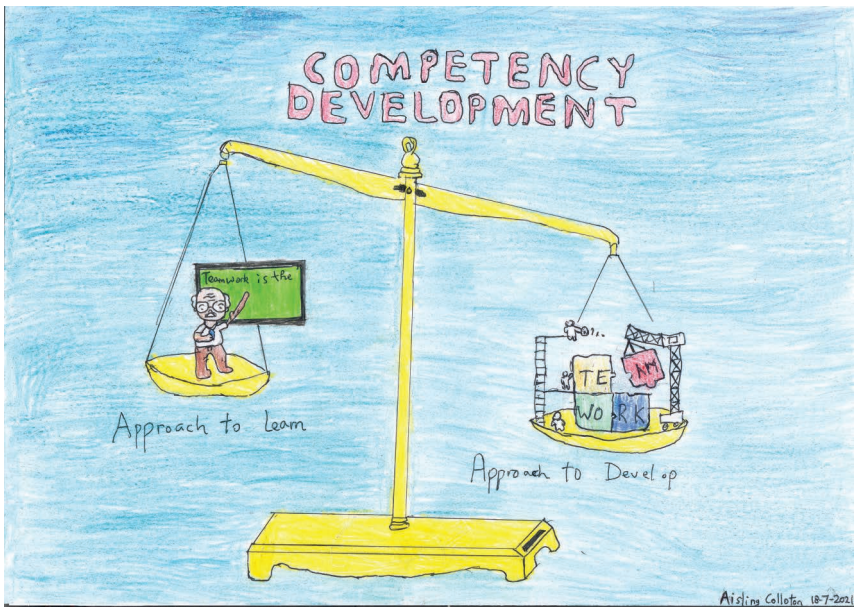

Figure 2.5 Competency development weight scale with approach to develop and approach to learn (Drawing by Aisling Colloton).

learning design process. One particularly important element from the HCDF framework is students' rationales or motives for developing holistic competency, and five rationales have been identified, namely; meaning-driven, career-driven, enjoyment-driven, course-driven and family-driven. Course designers are encouraged to design their experiential learning courses with these rationales in mind, which motivates students to join and engage in activities.

Unlike academic knowledge, holistic competency must be developed by experience. For example, leadership skills cannot be learnt through attending a lecture or reading a book; the learner must be given opportunities to observe and experience what leadership is. Hence, the word "learn" can be used to describe academic knowledge acquisition, whilst "develop" is more suitable for describing holistic competency education. Table 2.2 shows the constituents of

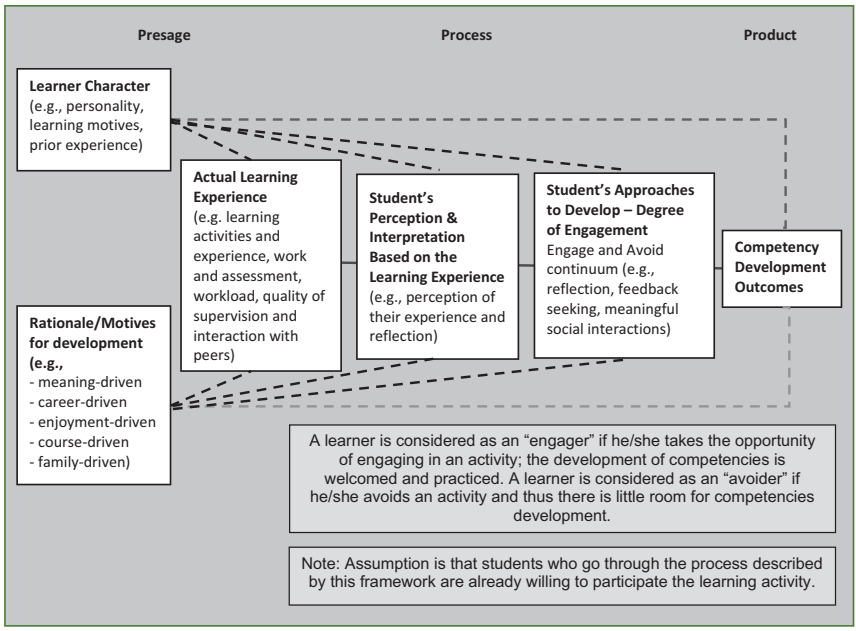

Figure 2.6 Students' approaches to holistic competency development framework (HCDF) (Chan & Yeung 2020).

Source: Reproduced with permission from authors.

students' approaches for academic knowledge as opposed to holistic competency. Figure 2.5 shows an impression by Aisling Colloton showing the Competency Development Weight Scale.

2.5 "Chain of Mirrors – The Metacognitive Development Model" – A Practical Guide for Curriculum Design in Holistic Competency

In the absence of a more concrete model to guide curriculum design for holistic competency development, I developed a model known as the "Chain of Mirrors – the Metacognitive Development Model" (Chan, 2016; Chan, 2019). It has been developed to delineate the development of holistic competency and provide clearer guidance for teachers to design effective experiential learning activities in order to optimise learners' development of holistic competency (see Figure 2.7).

The model provides important "mirrors" that aid teachers in incorporating experiential learning activities and opportunities into their curriculum, enabling effective development and enhancement of learners' competencies. The model was developed from the conceptualisation of the experiential learning process, the metacognitive processes, self-concept theory and student-centred behaviours

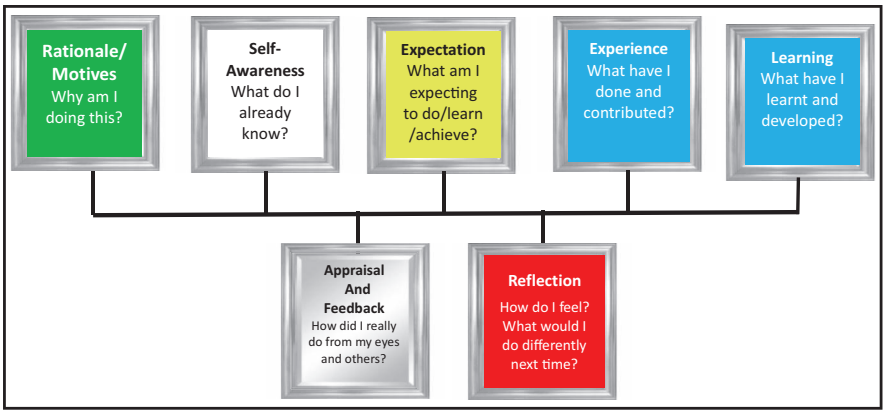

Figure 2.7 Chain of mirrors – the metacognitive development model a practical guide for curriculum design for holistic competency.

involved in learning. These student-centred behaviours include rationales, self-awareness and expectations to engage or avoid an activity; as well as trial and error in the implementation of holistic competency activities. In the previous section, the HCDF framework explains the importance of students' approach to develop, as students engage in holistic competency development differently from their approach to learn academic knowledge.

In fact, to truly enhance students' development of holistic competency, the power of metacognition should not be underestimated. Metacognition is the process of thinking about one's own thinking, which involves the processes of planning, tracking and assessing one's own thinking and achievements. Flavell (1976) describes it as follows: "Metacognition refers to one's knowledge concerning one's own cognitive processes or anything related to them, e.g., the learning-relevant properties of information or data." The Chain of Mirrors employs the key concepts of metacognitive knowledge and regulation to monitor holistic competency. The term "mirror" is used to illustrate how the learner constantly looks into a mirror at different stages of the development process. There are seven mirrors in the Chain of Mirrors and each of them is explained below.

2.5.1 The Rationales/Motives Mirror

In academic learning contexts, learners typically take a course or a programme for career pursuits. But for holistic competency which is not closely related to any disciplines, students' motives to participate in a learning activity can be rather diverse (Chan & Yeung, 2020). Based on a large-scale study, learners' motives were driven and influenced if the activity is (1) meaningful, (2) fun,

(3) career-related, (4) course-related, (5) family-influenced, as explained in the HCDF section (Chan & Yeung, 2020). The value of participating in a learning activity is determined largely by learners' motives to develop holistic competency, which, to some extent, also hinges upon their prior experience (impacting preference) and self-awareness, which is another mirror to be introduced.

2.5.2 The Self-Awareness Mirror

Understanding oneself is an important first step in formulating learning goals, and is thus an important mirror of the model. For a person to engage in such development, they must not only have a good understanding of their own strengths and weaknesses, but they must also be able to recognise that "I am a learner" (Kolb & Kolb, 2009, p. 297). One of the important factor in developing holistic competency is that learners are often unaware of their own strengths and weaknesses regarding the different competencies. The Chain of Mirrors model highlights a need to offer opportunities to enhance self-understanding so that learners can look through the "mirror" and become aware of their strengths and weaknesses in terms of their skills, feelings and behaviours. Self-assessment surveys, learning contracts (to learn more about learning contracts, go to Chapter 4) and SWOT analyses are common tools to enhance self-understanding. As learners have different prior levels of competencies, involving them in making decisions about their learning needs through self-evaluation can encourage them to take a more active role in directing and reflecting upon their learning, which is particularly conducive to holistic competency development.

2.5.3 The Expectation Mirror

When learners decide to take part in a learning activity, they would try to understand what they expect to learn, set goals and decide on the approach they would take to achieve these goals. These are important metacognitive skills for learning (White & Frederiksen, 1998), relating to both procedural knowledge and strategy knowledge in metacognitive knowledge (Flavell, 1985). If learners have a well-developed learning self-identity, they would make the best use of the opportunities offered by the learning activity. One way to help learners clearly identify and set expectations is through a learning contract. Based on the self-evaluation of their strengths and weaknesses in the previous mirror, the learning contract provides a set of "standards" or "criteria" learners themselves develop to self-challenge, assess and reflect.

2.5.4 The Experience Mirror

Experience is central to the learning process whereby learners with a clear learning self-identity can explore, act and reflect while going through rounds of trial and error to create new skills and knowledge. It is therefore a core element of the Chain of Mirrors model. As mentioned previously, holistic competency is

best developed through experience. For university students, for example, we have found that they strongly perceived out-of-classroom and authentic activities, such as internship and community services, as important means to enhance their holistic competency (Chan et al., 2017). Learners should therefore be offered opportunities to participate in experiential activities. These opportunities should also be carefully designed to align with learners' rationales which determine their "approach to develop" – whether to avoid or engage (Chan & Yeung, 2020). Learners will not continue to engage in the provided opportunities if the experience is negative.

2.5.5 The Learning Mirror

This mirror assists learners in thinking about what they have learnt in the experience and evaluating their learning progress against the expectations they set. What holistic competency have I developed? How did I develop them? Which competencies should I continue to work on? A learning self tends to focus more on the learning process and improvement needed for the future, instead of the immediate outcomes and results. For experiential learning and holistic competency, the process is more important than the result, thus, the activities design should focus on how to improve learning *during* the activities and not *after*.

2.5.6 The Reflection Mirror

Reflection is instrumental in transforming experience and consolidating the acquisition of disciplinary knowledge and holistic competency. Learners constantly reflect upon their concrete experience, learn from mistakes and successes, seek new experience and deduce new knowledge. In experiential learning, reflection is a commonly used assessment method and is achieved by consciously focusing learners' attention on what they have learnt, done, and observed, as well as how they have put prior knowledge into practice (more information on reflection can be found in Chapter 5). As holistic competency development is a long process, reflection – a widely used tool for tracking learning trajectories and digging deep down into learners' feeling and experience – is a crucial mirror. It is said that powerful learners always reflect. Some questions that can aid them in the reflective process include: Why did you do it that way? How did you feel after you had done that? Would you change anything you did? It is also sometimes effective to use artefacts such as videos or personal items to help learners reflect upon their feelings to facilitate holistic competency development.

2.5.7 The Appraisal and Feedback Mirror

The final piece of the "mirror" is appraisal and feedback. In addition to self-evaluation and self-assessment through reflection, it is equally essential for learners to receive sequential feedback from others, such as teachers, mentors, supervisors and peers as well as from the self. Effective feedback provides high-quality

information about learning that helps learners to clarify what good performance is in terms of goals and expectations (Nicol & Macfarlane-Dick, 2006), thus allowing the identification of gaps between their actual and expected learning outcomes. For learners who value social acceptance, they desire to know how others perceive them. In providing feedback for holistic competency development, an observer can be asked to target certain competencies and consider the behaviour, attitudes and skills exhibited by the learners in different contexts that demonstrate those competencies, and then provide feedback. Obviously, as development occurs during the learning process, feedforward would be more vital than feedback, although there are approaches that allow students to continuously reflect and develop even after the outcomes have been achieved. Teachers should utilise different stakeholders to provide appraisal with student-centre in mind.

In the Chain of Mirrors model, different mirrors prompt teachers to present different opportunities to engage students. Self-understanding, reflection and appraisal can be used to guide the development of appropriate assessments for holistic competency with carefully designed curricula and activities.

Conclusions

In this chapter, I have described many experiential learning theories and frameworks including those that I developed. These theories and frameworks will help us frame our thought processes when we design activities and assessments. In the next chapter, I will dive deeper into the assessment in experiential learning including the assessment literacy both students and teachers should possess.

Questions to Ponder

The only opinion that matters in life is your own, do you agree???

Statements like the one above can be seen everywhere – with words like "the only opinion that matters is the one you have about yourself." It is also something we like to say to our young students and children to make them feel confident about themselves. However, is that true? In reality, how our peers, our friends, our bosses and society see us are very important; that is how it works in society. Thus, the last mirror in the Chain of Mirrors reflects the vital process of appraisal and feedback from the people around us in supporting personal development. The colour of the mirror is displayed in various shades of grey to show that things are not always black or white in appraisal and feedback. For example, one peer may have a high opinion of you as a leader, while another may find your leadership approach too aggressive. To be successful in any particular competencies, the key is to receive positive opinions from different people and not just one type of people. How can we help our learners to enhance that in experiential learning? How can we help ourselves to enhance that?

Personal Reflection

In this chapter, I presented different experiential learning theories and frameworks, including the Chain of Mirrors and how holistic competency should be developed and not learnt. While I was researching on the different theorists and frameworks, I reflected and pondered on a rather egoistic perspective. And thus, this reflection is an odd one: I wonder if some future scholars will write about my ideas of experiential learning and holistic competency "maybe" based on the Chain of Mirrors?

Note

1 Holistic competency is defined by the author as an umbrella term for generic skills (e.g. teamwork, self-management and creativity), attitudes (e.g. resilience and hard-working) and virtues (e.g. respect, honesty and dignity).

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3 Assessing Academic Knowledge and Experiential Learning

> Learning outcomes of experiential learning are not rigid, they are dynamic. Students may not know the exact learning outcomes until the end of their learning process and sometimes even beyond that.
>
> – Chan, CKY

Introduction: Experiential Learning and Its Learning Outcomes

Knowledge economy highlights the need to incorporate both holistic competencies[1] and academic knowledge in education and society. With academic knowledge, intended learning outcomes are written out at large and easily recognisable, but with experiential learning, the problem of "which outcomes to measure and how to measure them" (Male & Chapman, 2005) arises. Most countries have adopted an outcomes-based system across all levels of their education system, but in a system where only one set of outcomes (the academic knowledge outcomes) is known, and the outcomes from the competencies set are not clear, this makes competencies very difficult to assess, especially when educators are expected to provide constructive alignment and clear criteria and grade descriptors. This challenge in assessment can be a major barrier in experiential learning when one of the major benefits of experiential learning is the development of holistic competencies.

Unlike traditional approaches to learning, the learning attainments from experiential learning can vary from one student to another student. There is a range of factors that influence learning attainment as shown in the Holistic Competency Development Framework (HCDF) (Chan & Yeung, 2020) in Chapter 2, including rationales, prior experience, expectations, actual experience and learners' approach to development as well as the learning activities' intended outcomes. These factors are known as "confounding variables" (Vogt, 1993). In Ewert and Sibthorp's (2009) article on experiential education, they have broken down these confounding variables based on Vogt's definition (1993) into three main areas: *precursor*, *concomitant*, and *post-experience*. These variables include students' prior knowledge and experience, demography, pre-experience motivations and expectations, group characteristics, situational impacts, social desirability, post-experience euphoria, etc. The influence of confounding variables may affect the learning gains of experiential education and are varied and unpredictable, hence difficult to establish and measure (Qualters,

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2010). Thus, assessment designs should account for these variables to ensure validity, reliability and impact (Van Der Vleuten & Schuwirth, 2005). Table 3.1 shows Ewert and Sibthorp's ideas of confounding variables for experiential education against the varying factors from the HCDF in the three stages for holistic competencies, note the similarities.

Table 3.1 Ewert and Sibthorp's and Chan and Yeung's HCDF – the confounding variables and the varying factors

Experiential Education: Ewert and Sibthorp's Confounding Variables (2009)		
Precursor (Before the Experience)	*Concomitant (During the Experience)*	*Postexperience (After the Experience)*
Prior knowledge and experience	Course specifics	Social desirability (the tendency of the learner to respond to the learning that is deemed more acceptable or desirable despite their true feelings)
Demographics	Group characteristics (and interactions)	Post experience euphoria (a feeling of excitement, positive affect, sense of accomplishment after the experiential learning)
Pre-experience anxiety	Situational impacts (unanticipated events that occur during the experiential learning experience)	Post experience adjustment (the time for the learner to adjust back to normal life after the experiential learning experience)
Pre-experience motivations and expectations	Frontloading for evaluation (refers to instructors or other participants that may influence the experience)	Response shift bias (evaluation of the learner's perception changes over time)
Self-selection into a specific program/ course or experience		
Holistic Competencies: Chan and Yeung's HCDF (2020)		
Presage	*Process*	*Product*
Learner Character (e.g., personality, prior experience)	Student's Perception & Interpretation Based on the Learning Experience	Competency Development Outcomes
Rationales/Motives for Learning	Student's Approaches to Develop – Degree of Engagement	
Actual learning experience (e.g. learning activities and experience, environments, work and assessment, workload, quality of supervision and interaction with peers)		

Depending on the factors named above, the type of experiential learning that a student chooses to engage in also frames their experience differently. Apart from confounding variables, disciplinary differences and the types of experiential learning activity a student partakes in, the assessment organised by the coordinator or teacher may differ, too. A capstone project may combine a presentation, thesis report, the actual product and monthly supervisor commentary as assessment; a common internship may use a weekly log, a reflective report and an employer performance appraisal form; while a social entrepreneur project may require students to compete for funding with a business plan and client's performance report. All that would also depend on the intended learning outcomes and the purposes of the assessment for the particular activity; there is not a one-size-fits-all definition.

As this book focuses on assessment, we will start by providing the basis of assessment for traditional learning, and progress to discuss the assessment of experiential learning.

3.1 Assessment in Academic Knowledge

Assessment is an on-going evaluation process aimed at understanding and improving student learning by measuring learning outcomes in knowledge, skills, attitudes and beliefs. It has four main purposes, namely (a) judging achievement, (b) protecting and maintaining academic standards and quality assurance, (c) managing accountability for the public and for funding and (d) promoting student learning.

In a student-centred outcome-based approach to learning academic knowledge, there are three components that make up the curriculum design – the learning outcomes, the pedagogy and the assessment (see Figure 3.1). The learning outcomes are associated with the students' objectives at heart – what do we want our students to learn? The pedagogies are associated with the learning activities – what activities help students achieve those learning outcomes? And the assessment – how do we know that the students have learnt? From students' perspective, assessment defines the curriculum and influences students' approach to learning (Ramsden, 2003). Their perspectives towards assessment can determine how they wish to learn, whether it is deep or surface (Bloxham & Boyd, 2007; Elton & Laurillard, 1979; Medland, 2016; Prosser & Trigwell, 1999), making assessment design vital.

3.1.1 Diagnostic, Formative, Summative and Learning-Oriented Assessment

The purposes of assessment guide the decision on types of assessment. There are four main types of assessment, namely diagnostic, formative, summative and learning-oriented assessment. Conventionally, the first three types can be considered as an assessment *before*, *during* and *after* learning, while learning-oriented assessment may occur at any time.

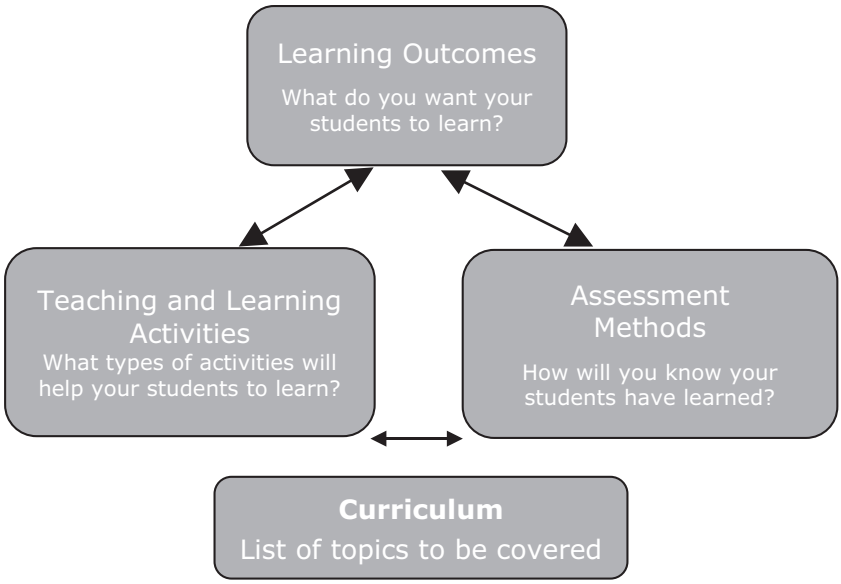

Figure 3.1 Outcomes-based approach to student learning (academic knowledge).

Diagnostic assessment assesses students' prior knowledge, skills, strengths, and weaknesses prior to their learning. Norm-referencing is often associated with this type of assessment as it compares the student's prior knowledge against the norm student group. It is also often employed for the allocation of students into elite class or groups. Diagnostic assessment is also used to identify difficulties that learners might have, in order to introduce appropriate learning interventions.

Students' Questions Associated with Diagnostic Assessment

- What level am I at, compared to my class?
- Will I be good enough to be in group A?
- What are my current strengths and weaknesses?

Teachers' Questions Associated with Diagnostic Assessment

- What knowledge do my students already have?
- Should I separate the best students and put them together into the same group or class?
- Should I introduce an introductory/advanced class for the weaker/stronger students?

Formative assessment, also known as *Assessment for Learning (AfL)* assesses students' performance during learning and often occurs regularly during the learning process in order to provide feedback for improvement. Criterion-reference is often associated with this type of assessment to measure students' performance

against goals, or specific standards. The term formative assessment was introduced by Michael Scriven in the 1960s' to make a distinction from summative assessment. Black and Wiliam (1998) explained the term formative assessment in this light, "[an] assessment becomes formative assessment when the evidence is actually used to adapt teaching to meet student needs" (p. 140). Wiggins (1998) rightly asserted that "the aim of [formative] assessment is primarily to educate and improve student performance, not merely to audit it" (p. 7).

Students' Questions Associated with Formative Assessment

- I am lost, what do I need to do to improve?
- How am I doing?
- I can do this, but how can I do better?

Teachers' Questions Associated with Formative Assessment

- I noticed half of my class is confused, I must not have explained the topics well enough, should I amend my teaching approach?
- What will I teach them next? How will I teach them next?

Summative assessment assesses students' achievement at the end of the learning process and is also known as *Assessment of Learning*. This type of assessment is often associated with grades. More recently, teachers are using summative assessment to provide interim grading and feedback. Teachers may opt to have summative assessments such as a term paper or a chapter test at half-term or after a unit of study is completed, rather than when the entire course is completed. In other words, summative assessment has been implemented for formative purposes. Under an outcomes-based approach, criterion-referencing is employed. One of the common features of summative assessment is that it is almost always associated with a grade to identify if the student has performed satisfactorily.

Students' Questions Associated with Summative Assessment

- Have I achieved the expected level?
- Would I get an 'A'? Would I pass?

Teachers' Questions Associated with Summative Assessment

- What levels of learning have the class achieved?
- Most of the class has achieved the standards, will this look good enough for the examination board and pass the quality assurance council?

Assessment as learning (Earl, 2003) is an assessment process in which students become more aware of how they learn and more responsible for their own learning. They also learn about their own learning and thinking processes and become metacognitive. Students monitor their own learning, self-question and reflect. Assessment as learning is a process that involves self and peer assessment,

along with formal and informal feedback in order for students to come up with solutions to problems and gain insights into their future career direction.

Learning-Oriented Assessment (Carless et al., 2006b) is when the assessment becomes part of the learning. Carless (2007) coined the term "learning-oriented assessment," and this term does not differentiate between summative or formative. It aims primarily at the purpose of assessment for promoting student learning. Carless asserts that learning-oriented assessment task should contain three elements; (a) the task should embrace learning, (b) it should involve students as assessors for both themselves and peers, (c) tasks should have feedback processes built in (preferably feedforward to allow the opportunity for re-action). Students monitor their own learning, ask questions and use a range of strategies to decide what they know, can do and progress, and how to use assessment information for new learning.

For teachers and practitioners, the two terms, *assessment as learning* and *learning-oriented assessment*, are moderately similar, as they primarily focus on student learning. For researchers, there may be a subtle distinction. In Torrance's (2007) article, he critiqued that "the practice of assessment has moved from assessment of learning, through assessment for learning, to assessment as learning, with assessment procedures and practices coming completely to dominate the learning experience and *criteria compliance* replacing *learning*" (p. 281).

To implement these processes of assessment successfully and effectively, a large part depends on the students, as students need to take responsibility for their own learning. Unlike diagnostic, formative and summative assessment, assessment as learning and learning-oriented assessment bring out the intrinsic motivation in students and is also process-driven where teacher takes up a guidance role. One example of such assessment is the thesis writing by PhD and Master's students, who self-lead, self-learn, self-reflect and often self-assess to become independent learners in order to create a path for their future learning.

Students' Questions Associated with Assessment as Learning and Learning-Oriented Assessment

- What do I know about this?
- What is the purpose of learning this?
- What learning approaches should I adopt to help me accomplish my learning goals?
- Do I understand it, and have I accomplished the goals I set?
- Do the assessment and feedback make sense, and how do I get better?

Teachers' Questions Associated with Assessment as Learning and Learning-Oriented Assessment

- What are my students' goals? What are they aiming to achieve?
- Why did they do it that way? Are there other approaches?
- The student's current issues are similar to the ones identified in the laboratory, can he/she adapt or modify them?

- Why don't they try that? Is that what they want?
- I am unfamiliar with the student's findings and challenges in their studies, how can I help them?

Table 3.2 gives a summary of the types of assessment. The information is collated from numerous sources (Dixson & Worrell, 2016; Hanna & Dettmer, 2004; Trumbull & Lash, 2013).

3.1.2 Balancing Formative and Summative Assessment

Most governments and organisations appreciate summative assessment over formative assessment as they provide easy and logical quantitative data such as that generated by standardised tests like the SATs, the Hong Kong Diploma of Secondary Education (HKDSE), the Chinese National College Entrance Examination (NCEE), is known colloquially as "Gaokao," for accountability, judgement and quality assurance. It is seen as objective, measurable and easy to benchmark. Educational researchers (Villarroel et al., 2018) are naturally critical of summative assessment, as traditional summative assessment approaches encourage rote learning and act as a filtering system for weaker students, bringing little to enhance student learning.

Educators would naturally believe students favour formative assessment because of its inherent feedback function, but it is often the prospect of grades that motivates the students due to the high-stake tradition of summative examinations (Kohn, 2011). Thus, it is essential for teachers to find the appropriate balance between formative and summative assessment.

There are no rules saying that a summative assessment approach cannot have an add-on feedback element or that a formative assessment cannot be associated with a grade or credit. At the University of British Columbia, Brett Gilley from the Department of Earth, Ocean and Atmospheric Sciences and his colleagues advocated for a two-stage exam (Gilley & Clarkston, 2014). In the first stage, students hand in an individual copy of the test, and then during the second stage, they confer with a small group of four to five students, and re-do the same exam as a team and discuss their answers, this allows them to generate their own feedback and involve in active learning. The result shows better subject retention and observed less exam stress on their students. The two-stage exam is an example of a summative exam with a formative focus.

There have been ongoing contestations on summative and formative assessment, but as teachers and researchers advance in educational research and practices, the assessment approaches have evolved to bridge the gap, as this can be seen from the list of assessment approaches in Table 3.2. The distinction between summative and formative assessment is superficial as both types of assessment can provide feedback opportunities. In fact, the two types "complement each other" and "on occasion, it may make sense to use a formative assessment summatively or a summative assessment formatively," depending on the outcomes and purposes of the assessment (Dixson & Worrell, 2016).

Table 3.2 A summary on the types of assessment - diagnostic, formative, summative and learning-oriented assessment

	Diagnostic	*Formative*	*Summative*	*Assessment as Learning & Learning-Oriented Assessment*
When to administer	Before learning	During learning	After learning	Anytime
Question to ask	Where the student is now (check progress)	How to get there (provide feedback)	Has the student achieved the outcomes (provide the level of achievements)	Has the student learn how to self-understand, self-motivate, self-advance
Purposes	• To introduce learning interventions • To classify students into the different levels	• To improve teaching and learning • To diagnose student difficulties	• To evaluate learning outcomes • To provide ranking, placement, promotion decisions	• To learn and become aware of how they learn • To be an independent learner • To learn how to lifelong learn
Formality	Formal/Informal	Formal/Informal	Usually formal	Formal/Informal
Level of stakes	No/Low stakes	Low stakes	High stakes	Low/High stakes
Process/ Product-oriented	More product-oriented	More process-oriented	More product-oriented	More process-oriented

Assessment approaches	• Pre-tests • Self-assessments • Discussion board responses • Interviews • Observation • Checklist	• In-class discussions • Clicker questions • Concept map • Classroom polls • Tag Cloud • Low-stakes group work • Weekly quizzes • Reflection journals • Diary • Logbook • One minute reflection • Homework assignments • Surveys • Student feedback • Student-led conferences • Blog entry • Role plays • Wiki entry • Draft assignment/project report • Pecha Kucha[1] • Exit card/ticket[2]	• Midterm exam • Final exam • End-of-unit or chapter tests • Final project or report • National exams • Portfolio • Performances • Student evaluation • Teacher evaluation • Presentation • Product demonstration • Standardised tests	• Projects • Research work • A combination of summative and formative assessment approaches

1 Pechu Kucha is a storytelling approach where a presenter presents 20 images and for each image, they have to present exactly 20 seconds each. The total presentation is always exactly 6 minutes and 40 seconds.

2 Exit cards/tickets serve as a content review at the end of a daily lesson and enhance students' metacognitive skills. It involves students to respond to question(s) on a piece of paper that they will pass to you before they leave the class like a bus/train ticket.

3.1.3 The Challenges in Academic Knowledge Assessment

There are some apparent challenges when assessing academic knowledge, and most of these challenges have been known for decades. In the section below, we expanded the seven main challenges in assessment identified in Carless, Joughin, and Liu (2006a)'s work. Based on these challenges, we have also added in the practical "irritations" experienced by teachers, administrators and students in recent years to paint a big picture highlighting current challenges in academic knowledge assessment. Many of these challenges continue to emerge because old habits die hard. Readers should note that most of these challenges also occur in experiential learning assessments.

i The multiple purposes of assessment
There are many underlying purposes of assessment. Fendrich (2007) wrote in the Chronicle of Higher Education in a piece titled, A Pedagogical Straitjacket that

> outcomes-assessment practices in higher education are grotesque, unintentional parodies of both social science and 'accountability.' No matter how much they purport to be about "standards" or student "needs", they are in fact scams run by bloodless bureaucrats who…do not understand the holistic nature of a good college education.

Carless et al. (2007) brought in the term "double duty" coined by Boud (2000) to explain this challenge – the focus on multiple purposes of assessment. The best assessment design clarifies purposes, although some assessment methods may serve several purposes.

ii The mixed-perception of assessment
Both teachers and students have their own perceptions of the purposes of assessment. According to Brennan (2015), "assessment is an emotionally-laden term… and often used to control teachers, schools and students". Teachers often see assessment as data for reporting and not for student improvement (Carless, 2010). While students see the number grade as the main reason for the assessment, an end to the learning process (Winstone & Boud, 2020; Winstoneet al., 2017).

iii Constructive misalignment
Many teachers are still struggling with how to design assessments that align well with learning activities and outcomes. Assessment drives student learning, but teachers in the past have often treated the design of assessment as an add-on component to the curriculum design. Given that the majority of the teachers are not experts in curriculum design, little thought go into assessment design. Teachers sometimes overlook the alignment between the assessment approaches and the learning outcomes. For example: using simple Multiple Choice Questions (MCQs) to assess students' understanding of a topic; or using essays to measure knowledge or understanding that can be assessed using less time-consuming assessment methods.

iv Overreliance on high stakes examinations

An examination-oriented system often leads to surface and rote learning (Villarroel et al., 2019). The over-reliance on high-stakes examinations or traditional summative assessment is a problem of how old habits die hard, and many stakeholders often prefer this "rule by numbers" (Kohoutek, 2014). O'Leary, a chair professor and the Director of the Centre for Assessment Research Policy and Practice at the Dublin City University said in the Irish Times (O'Rourke, 2018), "Parents will think very traditionally" and "they will see a test result as more important than teacher's judgement."

v Issues of grade distribution, inflation and standards

Historically, a norm-referencing standard (bell curve) has frequently been used, which often disincentivises learning. Adam Grant (2016), professor at the Wharton School of the University of Pennsylvania wrote in the New York Times,

> The more important argument against grade curves is that they create an atmosphere that's toxic by pitting students against one another. At best, it creates a hypercompetitive culture, and at worst, it sends students the message that the world is a zero-sum game: Your success means my failure.

Grant described student collaboration as "a pattern of cutthroat cooperation".

vi Providing effective feedback to students

Feedback that is timely and personal can amount to a big workload for teachers. Nine years have lapsed since Carless and colleagues (2006a) wrote about the seven challenges of assessment, and Carless (2015a) further wrote in Times Higher Education that "developing effective feedback in mass higher education is difficult: it requires time and careful thought, but classes are often large and teachers face multiple demands." The problem persists.

vii The logistics of group assessments

Group assessment has many benefits for student learning, however, if students are not clear about the objectives and expectations of group work or are questioning the validity and fairness of the assessment, it may cause confusion and competition within the group. The educational benefit of group work will then become less effective, possibly even becoming negative. One example would be the use of group assessment to assess students' knowledge when individual assessment can be more effective or efficient. Multiple teachers and teaching assistants may also be involved in the marking procedures in group assessment, meaning clear criteria and communication among the teaching team are absolutely vital. The logistics of group assessment is demanding.

viii The "unfamiliar" assessment approaches

Teachers and students alike can be sceptical of innovative or unfamiliar assessment approaches, including self and peer assessment. Yet, it is the combination of assessment approaches that can really help students to enhance their learning (Lau, 2016).

ix Workload pressure from modularisation
Having highly modular curricula increases students' assessment workload. As an article in the Times Higher Education (McKie, 2018) based on the research done by Tomas and Jessop (2019) mentioned, "students are 'struggling and juggling' with assessment loads, lighter assessment loads would make room for 'slow' and deep learning."

x Contract cheating, the latest issue of plagiarism
The latest issue of plagiarising is not student to student plagiarising or plagiarising from web resources or journal articles but from contract cheating, "concerns have been raised about the growing number of websites offering students bespoke academic essays in return for a fee" (Price, 2016).

3.1.4 Assessment Literacy

As this book focuses on assessment, it will be ignorant not to examine the term assessment literacy (AL). Assessment literacy was first formally raised by Stiggins (1991). With the advent of outcomes-based learning, which brought about the emphasis on student-centred learning, expectations for student learning have been made more explicit. The introduction of standards and criterion-referencing practices implies that teachers need to understand different dimensions of assessment from the perspectives of student learning. Public accountability and the drive for better educational practice have also emanated the emphasis of AL in higher education (Ecclestone, 2001).

However, despite almost three decades of development, AL is still "clustered with competing definitions and models, some of which overlap with related concepts whose distinctions have not been clearly articulated" (Cowie & Cooper, 2017; Mandinach & Jimerson, 2016, cited in Medland, 2019; Pastore & Andrade, 2019, p. 130). This book will use Paterno's (cited in Mertler, 2003) definition of assessment literacy as the foundation of the concept, as it provides a clear and simple interpretation.

> Assessment literacy is the possession of knowledge about the basic principles of sound assessment practice, including its terminology, the development and use of assessment methodologies and techniques, and familiarity with standards of quality in assessment.
>
> (Paterno, 2001, p. 2 as cited in Mertler, 2003)

Stakeholders (teachers, administrators, government officials, employers, students and parents) need to be assessment literate to use, judge and improve with the assessment.

3.1.4.1 Teacher Assessment Literacy

According to Stiggins (1995), a teacher is assessment literate if they know what they assess, why they assess, how to assess, what the possible problems with

assessment are, how to prevent these problems from occurring, and if they are familiar with the possible negative consequences of poor, inaccurate assessment. And Webb (2002) defined teacher assessment literacy as,

> the knowledge about how to assess what students know and can do, interpret the results of these assessments, and apply these results to improve student learning and program effectiveness.
>
> (Webb, 2002)

In recent years, more researchers have been working on comprehensive frameworks to conceptualise teacher assessment literacy to create an overall trajectory of professional development in this aspect (e.g., Pastore & Andrade, 2019; Xu & Brown, 2016).

Pastore and Andrade (2019) proposed an expanded model of AL that incorporates three overlapping dimensions (i.e. ***conceptual, praxeological, socio-emotional***). The conceptual dimension concentrates on the knowledge a teacher possesses in terms of the different assessment models and methods. Pastore and Andrade provide fundamental questions that lay the foundation of the conceptions of assessment (e.g., purpose, approaches, reporting) such as:

- What is assessment?
- Why assess? (e.g. summative, diagnostic, formative, interim, and benchmark);
- What to assess? (e.g. the content knowledge, skills, thinking, and dispositions);
- How to assess? (e.g. assessment methods, strategies, and instruments and how these are relating to validity and reliability).

The praxeological dimension refers to assessment in practice – their actions. This dimension involves how teachers conduct assessments alongside other teaching-learning practices to monitor, judge, and manage students' learning outcomes and processes. Examples of these actions include:

- Designing assessment approaches and ensuring they are constructively aligned with the learning outcomes and activities;
- Designing and applying assessment criteria;
- Providing evidence of student learning for student improvement and certification;
- Using evidence of student learning to inform curriculum changes and/or reforms;
- Providing constructive feedback;
- Reporting and communicating assessment results to other stakeholders (e.g. parents, other teachers, administrators).

The socio-emotional dimension concerns ethics, power and relationships. Teachers who are literate in this dimension would be able to attend to issues such as

ethical aspects in assessment, teacher-student power relationship, and emotional dynamics of students (e.g., anxiety, frustration). For example:

- Teamwork interactions relating to assessment impacts and student learning;
- Minimising unfair grading with clearer guidelines (including self and peer assessment);
- Better design of assessment to reduce unethical academic integrity;
- Handling students' reactions to negative feedback and poor assessment results well to improve academic resilience.

Xu and Brown (2016) reconceptualised assessment literacy after reviewing 100 papers published between 1985 and 2015 from both educational assessment and teacher education fields of research, and developed the triangular model titled the Teacher Assessment Literacy in Practice (TALiP) framework. The framework is based upon personal experiences with teaching and assessment, alongside previous models of assessment literacy that emphasised its social nature (Willis et al., 2013). The model uses a triangular shape to indicate the knowledge base at the bottom, serving as the basis – encompassing factors namely knowledge of grading, feedback, peer and self-assessment, ethics in assessment, disciplinary knowledge, methods and interpretation. And on the top of the model, there is a teacher as an assessor, positing the idea that needs to reflect to (re)construct their identity as an assessor. It emphasises the need for teachers to understand the varying purposes of assessment and possible assessment strategies that can be used to assess student understanding accordingly.

Teacher Assessment Literacy Awareness Exercise: Are You Assessment Literate?

Based on Pastore and Andrade (2019)'s three dimensions in teacher assessment literacy, I have developed the following questions to help teachers deepen their awareness, understanding and action in designing and implementing the assessment. These questions are by no means exhaustive, but it helps teachers to ponder over issues that may occur if they are not fully literate. There are three levels (No, Somehow and Yes) in the awareness exercise, by answering the questions, readers can evaluate how literate they are in each dimension (Table 3.3).

3.1.4.2 Student Assessment Literacy

One of the most recognised works on student assessment literacy is Smith et al.'s (2013) research which conceptualised the concept in three dimensions – students need to (1) understand the purpose of assessment and how it connects with their learning trajectory; (2) be aware of the processes of assessment and how they might affect students' capacity to submit the assessment; and (3) be able to judge their own work and how to improve. Building on these three dimensions, Smith et al. (2013) further developed and validated a student assessment literacy

Table 3.3 Teacher assessment literacy awareness exercise

Teacher Assessment Literacy Awareness Exercise				
		Level 1 No	*Level 2 Somehow*	*Level 3 Yes*
The conceptual dimension – The understanding	Do I know why I am assessing? Do I know what I am assessing? Do I know how I am assessing? Do I understand the criteria? Do I know what standards I am employing for the grading? Do I know how I should provide feedback to achieve the biggest impact on student learning? Do I know if the assessment is valid and reliable? Do I know if the assessment method complies with the institution/faculty/department policies?			
		Level 1 No	*Level 2 Somehow*	*Level 3 Yes*
The praxeological dimension – The action	Do I know where the best place to assess? Do I know when I should assess? Do I know when I should provide grading? Do I know when I should provide feedback to achieve the biggest impact on student learning? Do I know if the assessment methods address and align with all the intended learning outcomes? Do I know if the assessment methods align with the learning activities? Do I know if the assessment methods are actually practical and deliverable given the available contact time and resources (staffing, room availability, time)? Do I know if the assessment methods allow reflection and feedback? Do I know how I am going to report the assessment results?			

(*Continued*)

		Level 1 No	*Level 2 Somehow*	*Level 3 Yes*
The socio-emotional dimension – social and emotion	Do I know who is the most suitable person to grade?			
	Do I know who should provide the feedback to achieve the biggest impact on student learning?			
	Do I know the impact of peer reaction and remarks?			
	Do I know if the assessment workload is realistic for teachers and students?			
	Do I know how the assessment results should be reported and recognised?			
	Do I know if the assessment design is rational for students?			
	Do I understand the ethics and fairness of group work assessment?			

instrument to help them evaluate a brief intervention on student learning. The above three dimensions have influenced plentiful assessment research (e.g., Carless, 2015b; Charteris & Thomas, 2017; Deeley & Bovill, 2017).

Research framed exactly under student assessment literacy are scant, and related research are mostly investigating how to enhance student assessment literacy via intervention (e.g., Davari Torshizi & Bahraman, 2019; Deeley & Bovill, 2017; Smith et al., 2013). There are theoretical studies investigating the conceptualisation of student assessment literacy (Francis, 2008; O'Donovan et al., 2008), student perceptions of different types of assessment (Flores et al., 2020; Pereira et al., 2017; Struyven et al., 2005), and students' experience in assessment (O'Donovan, 2019; O'Donovan et al., 2001). A study on students' evaluative judgement, that is, the "capability to make decisions about the quality of work of self and others" (Tai et al., 2018, p. 467) has also been done.

Suggestions for Promoting Students' Assessment Literacy

Students can become more literate in assessment; the following are some good practices in promoting students' assessment literacy:

i Spend time to explain course outcomes, activities and assessment;
ii Share course, programme, department and faculty assessment policies including pass and failure criteria;
iii Employ various assessment approaches to tackle different outcomes, allow students to practice these approaches;
iv Involve students in the design of the assessment;

v Engage students in the discussion of assessment, including the criteria and exemplars;
vi Arrange pre-assessment activities for students to help them get familiar with the grade descriptors and assessment approaches;
vii Introduce self and peer assessment, allowing students to judge their own work;
viii Provide feedback on earlier drafts of the work submitted by students and help them focus on the critical comments;
ix Provide feedback on students' completed work especially suggestions regarding how to perform better in future tasks; and
x Include students in board or exam meetings, take their ideas into consideration.

As students become more aware of what and how they are learning, they become more motivated. Hence educators need to design assessment *for* learning, with the ultimate aim at designing assessments *as* learning, rather than merely designing assessment *of* learning.

3.2 Assessment in Experiential Learning

As mentioned at the beginning of this chapter, one of the major benefits and outcomes of experiential learning is the development of holistic competencies, yet, the major barrier is the assessment of these competencies. Without proper assessment, how would we know what competencies our students need to enhance? In fact, if it is not assessed, how can we convince the teachers and students that the development of holistic competencies is important, and that experiential learning is value-adding.

Assessment of holistic competencies is not a simple task. Universities and governments around the world pay special attention to global and regional rankings measurement, and given that competencies are heavily emphasized in university missions (see Section 1.1) and agendas in government policies, it is surprising that there is yet to be any worldwide assessment ranking system of competencies. There are numerous worldwide university ranking systems, among them, the most influential ones are those produced by the Times Higher Education (THE), the Quacquarelli Symonds (QS) and the Academic Ranking of World Universities (ARWU). The ranking systems include world university, regional, world reputation, young university, emerging economies, teaching and impact. For research rankings, the criteria used are mostly based on research publications, citations, academic performance and faculty expertise including a number of Nobel prize winners; and the criteria for teaching rankings, engagement, resources, outcomes and facilities are often used as the standards for evaluation. There are also different subject discipline rankings, but as of yet, there are no criteria for holistic competencies (or 21st century skills) in any of the university rankings. In 2015, QS launched the QS Graduate Employability Rankings, however, despite the title of the rankings, it does not take into account the employability

competencies. The criteria are mainly on alumni outcomes, employer-student connections, employer reputation, graduate employment rate and partnerships with employers.

Inevitably, there are criticisms on the effectiveness, usefulness and validity of these ranking systems (Bekhradnia, 2016; Marope et al., 2013; Marszal, 2012), but what I am trying to establish here is that given the importance of competencies, global assessment ranking of these competencies does not yet exist as assessment of such is daunting.

Boud (2007) proclaims that:

> Assessment frames what students do. It provides an indication of what the institution gives priority to in making judgements, it provides an agenda more persuasive than a syllabus or course outline and it therefore has a powerful backwash effect on all teaching and learning activities.

Without assessment, both students and teachers would not put the time, effort and resources in the development of holistic competencies even if they believe it is important. This is echoed by many scholars (Bloxham & Boyd, 2007; Elton & Laurillard, 1979; Medland, 2016; Prosser & Trigwell, 1999).

At the beginning of this chapter, an outcomes-based approach to student learning (Ramsden, 2003) was presented, with the three main components (i.e.) learning outcomes, teaching and learning activities and assessment shown in Figure 3.1. This approach has been widely adopted at all levels of education. However, with the importance of reflection and feedback, I feel that it is necessary for these two components to be incorporated as part of the outcome-based approach in order for different stakeholders to build them into the design of the curriculum. These two components are particularly vital in experiential learning development. More often than not, feedback is treated as a by-product of assessment and reflection is an unintentional part of the curriculum design. Another important aspect that I would like to draw attention to is that, unlike academic knowledge, intended outcomes of experiential learning are often unknown. Some of the specific outcomes may not be known until during or after the activity (Boud et al., 2020; Luk & Chan, 2021). Thus, I have updated the famous outcomes-based approach for experiential learning as shown in Figure 3.2. In Chapters 5 and 6, I will elaborate more on reflection and feedback in experiential learning.

3.2.1 The Challenges in Experiential Learning Assessment

So why is assessment in experiential learning so difficult? Apart from those challenges shown in Section 3.1.3 -– the challenges in Academic Knowledge Assessment, the challenges below have been identified specifically for experiential learning assessment.

i Unknown learning outcomes related to experiential learning, or being unaware of them

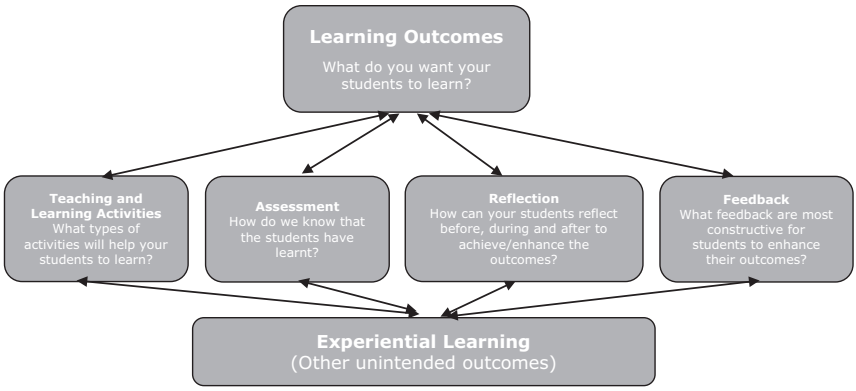

Figure 3.2 Outcomes-based approach to student learning with reflection and feedback for experiential learning.

In an article arising from my post-doctorate, Dr. Lillian Luk's PhD thesis (Luk & Chan, 2021), one of the objectives was to identify the learning outcomes of internships. Their findings suggested that while there are generic types of learning outcomes, there are also specific learning outcomes based on each individual student's experience and motivation. The uncertainty surrounding the intended learning outcomes makes it difficult to design an effectively aligned assessment. The outcome of experiential learning is often not the mastery of disciplinary knowledge, but the acquirement or improvement of certain competencies. Critical and careful assessment design is needed in ensuring the attainment of expected learning outcomes by students (Gosen & Washbush, 2004; Moon, 2004). As explained by Bennett et al. (2000), "it is usually not until they [generic skills] are included in students' learning objectives and formally assessed, that their importance for their future careers is fully accepted by students" (Bennett et al., 2000, as cited in Crebert et al., 2004, p. 148).

ii Difficulty to design authentic assessments to mimic the real-world
Students appreciate and become more motivated when assessments are perceived as authentic. However, designing an authentic assessment takes more time and resources. The perceived level of authenticity is also subjective, and it varies depending on the individual experience of the students. In a recent article, Sotiriadou et al. (2020) tested out a suite of scaffolded authentic assessments and oral exams, and the results showed that it improved the students' skills such as professional identity and awareness, and communications skills, as well as their employability prospects. When Anna McKie from the Times Higher Education (2019) interviewed a number of educational experts around the world, they unanimously suggested that "assessment needs to be much more closely resembled real-world tasks" to be effective.

iii Lack of clarity about the conceptualisation of competencies
There is no definition of holistic competencies nor a confined list of competencies that students are to develop (Chan et al., 2017). In a study by Gu (2016), it was found that despite the willingness of teachers in English as a Foreign Language education

> to assess intercultural communicative competence (ICC), the EFL teachers lack a clear conception of it. This leads to confusion about what should be assessed and how to assess it, and to deficiencies in their attempts to measure students' ICC in the classroom.

iv No baseline to measure from
For academic disciplinary knowledge, teachers are aware of students' prior experience and knowledge, as most students are more or less starting at the same level before entering university. But with holistic competencies, each student has different prior experience and thus, different starting levels of competencies. Therefore, it is difficult to measure students' improvement in competencies from the experiential learning activity.

v Hidden curriculum – embedded competencies
It is quite common to find different competencies embedded within the curriculum but not explicitly outlined. Assessors find it difficult to assess these '*hidden*' pieces of the curriculum.

vi Assessment misaligns with meaningful activities
Apart from authenticity, the assessment needs to provide meaning, as many of the experiential learning activities are meaningful on a personal and emotional level. Looking at the HCDF framework in Chapter 2, the rationales for engaging in the experiential learning activity are very important: teachers should be mindful of students' rationales for joining, was it because of fun, or is it career-driven, meaning-driven, because of family reasons or a need to obtain credits to complete part of the curriculum? The assessment design needs to embrace those and create meaning. Some universities now provide experiential learning credits for out-of-classroom learning experiences. However, the assessment of these experiences is often a reflective essay of 300–500 words, and often, no training is provided to either the students or the teacher/administrative staff who is responsible for "*collecting*" the essay. Once the reflection essay is collected, the students will automatically be given a pass grade. It serves merely as a bureaucratic piece of evidence.

vii Unfamiliar assessment approaches in experiential learning
Experiential learning is unconventional, meaning assessment approaches that have evidenced to thrive in one activity may not succeed in another. There is no one correct approach to assessing students in experiential learning. It may mean that "multiple assessment methods are appropriate", as shown in a study with medical students by Roberts et al. (2014). Experiential education can be seen as a radical change from conventional classroom teaching, therefore it is especially important to evaluate its effectiveness

through an assessment so that experiential learning, this unconventional approach to learning and development, is worthwhile (Voehl, 2018).

viii Different levels of Bloom's taxonomy
Most teachers are not assessment experts and have very little experience in experiential learning. Thus, it is not easy for them to design assessments that cover some or all of Bloom's taxonomy levels. Sometimes, the assessment may even discourage meaningful and active learning, especially when there are no clear criteria, course content, learning outcomes and assessment.

ix Lack of institution support and recognition
As mentioned previously, if institutions do not take the assessment of experiential learning seriously, it is difficult for teachers and students to put a lot of effort into it, especially when teachers have four pillars of duties (i.e. research, teaching, knowledge exchange and administration) to fulfil while students have a "packed" timetable. Research (Chan & Lee, 2021; Chan & Luk, 2022; Chan et al., 2017) was conducted in the engineering disciplines in Hong Kong universities to investigate students' and teachers' perceptions of holistic competency development. It was found that most students agree that holistic competencies are best developed in out-of-class activities or extra-curricular curriculum. However, from the interviews with the teachers and analysis of the course documents, it was found that a minimal amount of activities was organised for students to develop their competencies within the curriculum, thus, it was not surprising for students to have the perception that competencies are to be best developed in out-of-class activities.

x Not discipline-specific, thus difficult to assess
The experience developed from experiential learning is often not related to the discipline that the students are studying, making it more difficult for teachers to assess and relate to the course. Clayton et al. (2003) have found from a large dataset of post-secondary education settings that in the absence of formal guidelines about how to assess generic skills, [a number of] informants [assessors] […] base their judgements on their general understanding of assessment processes, trusting that their training in assessment enables them to generate a valid approach. However, one trainer commented that when assessing embedded competencies, it was harder to develop assessment tasks to ensure coverage, and that more guidance was needed.

xi Difficult to provide evidence of student learning
Quality assurance agencies and funding bodies prefer quantitative data, and are looking for value-for-money and value-add, but experiential learning is often costly in terms of students' and staff's time and perhaps even resources, thus, it is difficult to provide evidence of student development that justify these investments and spendings. If meaningful experiential education is to be achieved, it is essential for universities to capture student development from experiential learning experiences, document and explain the data, and finally improve experiential learning activities (Qualters, 2010).

xii Logistic issues with many assessors
As experiential learning involves different parties, the most effective assessment approach may involve many stakeholders. However, the logistics may be difficult (Chan, 2011).

xiii The who, when and how of feedback
The idea of who would be the most appropriate person to provide feedback in experiential learning education is debatable. Decisions on when and how to provide feedback efficiently are also influential. For example, who will be the best person to provide appropriate feedback to a student who engages in teamwork for a community service project? How to provide constructive feedback without discouraging the student in this meaningful project? And at the same time, when the feedback does not come across like a criticism, will it bring constructive, long-lasting effects?

xiv Validity and reliability
Experiential learning assessment approaches need to be creative, but they may therefore lack validity and reliability. According to Grimes and Gibbons (2016), "applicability, value and credibility" (p. 109) of assessment is of foremost importance.

xv Assessing the process
In experiential learning, assessment is often considered part of the learning process, so assessment tasks serve as a marking instrument as well as a way to enhance and shape learning experiences, especially in helping students to make sense of their experiences and connect with previous studies (Moon, 2004; O'Toole, 2007). This makes an assessment in experiential learning particularly essential and beneficial but at the same time, difficult to assess.

3.2.2 Assessment Literacy in Holistic Competencies

With competency development being a major outcome in experiential learning, the assessment of holistic competencies has been pushed to the front of the agenda in many universities worldwide to provide evidence of their development. To enhance the effectiveness of assessment, it is important that stakeholders such as teachers and students are assessment literate, i.e. obtain "the level of knowledge, skills, and understanding of assessment principles and practice" (Taylor, 2009, p. 24), in holistic competency development. Promoting students' assessment literacy is to help them comprehend the multiple aspects of assessment, for example, the purpose and role of assessment, meaning of the assessment criteria and standards, and techniques needed to complete the assessment. This will enable students to recognise and take responsibility for their role in assessment and eventually improve their performance.

In some way, we have only scratched the surface in assessment literacy research. Assessment literacy research could be found on teacher assessment literacy development, but there have been very few studies on students' AL. Research based on disciplinary knowledge, such as assessment literacy in language learning (Davidson & Coombe, 2018; Fulcher, 2012; Scarino, 2013; Vogt &

Tsagari, 2014) and in science (Abell & Siegel, 2011; Gottheiner & Siegel, 2012) have also been investigated. Although some conceptual papers took a holistic approach to theorise assessment literacy (i.e. conceptualising assessment literacy for student learning as a whole instead of for a particular discipline) (e.g., Pastore & Andrade, 2019; Xu & Brown, 2016), very few studies to date (Chan & Luk, 2021; Chan & Luo, 2021a, 2021b) has specifically looked at assessment literacy in holistic competencies either within teachers or students.

3.2.2.1 Student Assessment Literacy in Holistic Competencies

To address the research gap, together with my research team (Chan & Luo, 2021a, 2021b), we have explored a student assessment literacy framework in holistic competency. It represents one of the first attempts to conceptualise student assessment literacy in holistic competency development. The study first reviewed existing student assessment literacy frameworks, and then explores the extent to which these frameworks also apply to assessing holistic competencies based on 29 focus group interviews with 122 students from six universities in Hong Kong. Findings were subsequently used as a base for discussion towards a new framework of student assessment literacy in holistic competency development that constitutes four dimensions, i.e. Knowledge, Attitude, Action, and Critique.

Student assessment literacy in holistic competencies is defined as students' knowledge surrounding assessment in holistic competency development, their attitude to appreciate and engage in holistic competency development and assessment, their action towards assessment tasks and feedback to monitor or further their development, and their ability to critique the assessment and feedback provided to enhance their holistic competencies. Figure 3.3 visualises the new framework:

While acknowledging the value of existing student assessment literacy conceptualisations, Chan and Luo argued that complexities involved in assessing holistic competencies require a more nuanced framework. The nebulous nature of holistic competencies might have resulted in a lack of standardised guidelines on how to assess these competencies (National Centre for Vocational Education

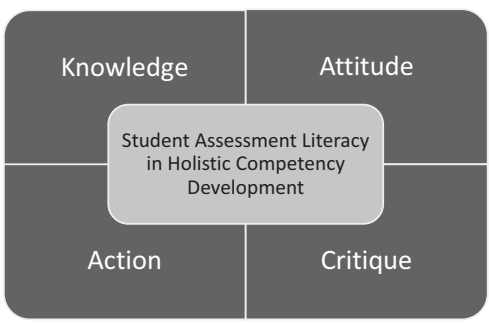

Figure 3.3 Student assessment literacy in holistic competency development framework (Chan & Luo, 2021b).

Source: Reproduced with permission from authors.

Research [NCVER], 2003). "There is considerable potential for invalid judgements to be made about the quality of learner performance" concerning holistic competencies (Clayton et al., 2003, p. 61). Especially for competencies that are more personal (e.g., respect, responsibility and honesty), negative assessment could be interpreted as a personal affront and lead to ethical issues.

Taking these features and the interview findings into consideration, the characteristics of assessment literate students in each of the proposed dimension are outlined as follow:

The Knowledge Dimension

In the knowledge dimension, assessment literate students

- understand the purposes of assessment for holistic competency development, and the potential side effects assessment may cause;
- understand the processes of holistic competency assessment are not always explicit and could be embedded within academic tasks;
- understand holistic competencies can be assessed via different approaches and activities, and the connection between assessment approaches, activities, and holistic competency development.

The Attitude Dimension

In the attitude dimension, assessment literate students

- appreciate holistic competency development in terms of its value and show a willingness to engage in its assessment;
- constructively manage the impact of holistic competency assessment on emotions and avoid defensiveness when receiving negative feedback;
- possess open-mindedness towards the engagement of holistic competency development, assessment and feedback.

The Action Dimension

In the action dimension, assessment literate students;

- develop strategies for different assessment tasks;
- reflect intentionally;
- judge and use assessment and feedback for further holistic competency development.

The Critique Dimension

In the critique dimension, assessment literate students

- recognise they have the right to challenge and critically examine holistic competency assessment, as well as the feedback provided;
- proactively and critically engage in dialogues with peers, supervisors and teachers to improve holistic competency assessment.

The framework is expected to bring a number of implications for holistic competency assessment-related policy, practice and research in higher education. For example, the framework can be used as an operationalised model guiding students to self-evaluate their engagement in holistic competency assessment and development. Enhanced student assessment literacy will contribute to the improvement on holistic competency assessment in practice, enabling more valid and reliable certification of these competencies. In the long term, this will also help higher education provide concrete evidence of students' holistic competency development for quality assurance units, employers, parents and students themselves. On the other hand, the framework further highlights students' critical engagement and understands learners as active agents who exercise discretion in holistic competency assessment. Students therefore are no longer perceived as merely "followers" of established assessment guidelines, but also as "developers" of these standards.

Broadly speaking, the assessment landscape in education has experienced dramatic changes in recent decades. The focus has transformed from viewing students at the passive end of assessment, all the way to valuing students' evaluative judgement, i.e. their "capability to make decisions about the quality of work of self and others" (Tai et al., 2018, p. 467). Developing students' and teachers' assessment literacy (see Chan & Luk, 2021 on teacher assessment literacy) in holistic competencies is an important move in this trend, which will contribute to cultivating a more well-rounded generation. We expect more research and practice to advance this important field in the future. Promoting students' assessment literacy is to help them comprehend multiple aspects of assessment, for example, the purpose and role of assessment, the meaning of the assessment criteria and standards and the techniques needed to complete the assessment. This will enable students to recognise and take responsibility for their role in the assessment and also improve their performance.

3.3 The Assessors

The purposes of the assessment should guide the selection of the type of assessment employed, and from the type of assessment (i.e. diagnostic, formative, summative, learning-oriented assessment or a combination of them), the assessment approaches (e.g. essay, report, poster, observation, reflective journal) are decided. These assessment approaches must also be appropriately aligned with the learning outcomes and competencies, and the learning activities.

However, who the assessors will be is often not deeply considered; traditionally, the choice has been limited. The tedious yet mandated work of grading is often left to the teachers and teaching assistants of the course, as it is difficult to request and rely on others to agree to perform this task. In the recent years, this has begun to change, as educational researchers and practitioners (e.g. Rolim & Isaias, 2018; Sadler & Good, 2006) investigate more diverse ways to assist in the reduction of workload and at the same time, take into account students' rationale for learning. University teachers also network with various stakeholders to provide diverse environments for student learning. The assessors now include

students, peers (junior and senior students), industrial supervisors and experts, non-profit organisation coordinators and even the public who are end-users as partners for assessing student learning. As an example, at the University of Hong Kong (HKU), Chow and Ng (2015) from the Law Faculty invited lay persons as simulated clients to assess students' communicative competencies. HKU Faculty of Law is the first law school in Asia to adopt this standardised client programme to assess law students' interviewing skills.

Experiential learning allows students to be responsible for their learning. Many practices have shown that teachers often design experiential learning activities to be student-centred, allowing students to manage the task from the beginning to the end, controlling the approach, the deliverables, the process and the product. However, when it comes to the assessment, it is back to the governing hands of the teachers, and often, it does not align with the activity, is not student-centred, adds no meaning to the learning experience, and lacks all the elements that are expected in the student experience of the experiential learning activity (Ajjawi et al., 2020). The assessment is often an after-thought or a quick fix for bureaucratic purposes to satisfy quality assurance and credit-bearing requirements. In what follows, I present students as partners in assessment from three aspects – (i.e.) the benefits, the challenges and some current practices with an aim to inform future research and practices on engaging students as partners in experiential learning assessment. This is then followed by literature on self, peer and group assessment which are more common assessment approaches that involve students.

3.4 Students as Partners in Assessment

Student partnership or student-staff partnership, which indicates a collaboration in which students and the teacher work together to further common education goals, is particularly complementary to experiential learning. On one hand, students as partners are experiential by nature. As pointed out by Healey et al. (2010, cited in Healey et al., 2014, p. 36), the central idea behind student engagement is "reflecting on the experience of learning by doing". By enabling "a more authentic engagement with the very nature of learning itself", student partnership is often "understood as an experiential process of reflection and transformation, in relation to oneself and with others" (Healey et al., 2014, p. 17). On the other hand, while experiential learning does not necessarily involve students as partners, it does help motivate and prepare students for full partnership by giving learners more independence and encouraging deep engagement (Graham et al., 2007; Healey et al., 2014; Trowler, 2010;). That said, although students as partners have enjoyed increasing popularity in higher education in recent years, not much has taken place in the experiential learning context. Especially in the field of assessment, teachers still tend to dominate and govern the entire process (Deeley & Bovill, 2017), which undermines the inherent goal of experiential learning to engage learners.

3.4.1 Benefits in Employing Students as Partners in Experiential Learning Assessment

Student partnership in assessment affords learners and teachers plentiful benefits. Especially in experiential learning where a range of novel assessment approaches are adopted, empowering students in the assessment enables them to gain deeper learning experience and acquire multiple competencies such as critical evaluation and negotiation (Deeley, 2014; Deeley & Brown, 2014), as well as their self-monitoring competencies in order to judge their progress and act on gaps in their learning (Carless, 2015b; Evans, 2016). These competencies are much sought after by employers and are essential for lifelong learning.

Although most extant students as partners studies, involving assessment have not been based on experiential learning, their findings could be of important referential value. One of the most prominent advantages is the enhanced level of student assessment literacy, such as a better understanding of the marking criteria, the assessment design, giving and receiving feedback and self-/peer-assessment. (Deeley & Bovill, 2017; Orsmond et al., 2002; Sambell & Graham, 2014). Meanwhile, there is ample evidence that student partnership in assessment also significantly increases students' motivation and agency in learning, helping them to take ownership of and better monitor their work (Abdelmalak, 2016; Boud & Molloy, 2013; Deeley, 2014; Deeley & Brown, 2014; Fluckiger et al., 2010). Evans (2016) highlights the importance of "how students come to co-own their programmes with lecturers and see themselves as active contributors to the assessment feedback process rather than seeing assessment as something that is done to them" (p. 2). Through students as partners, students are receiving opportunities to be actively engaged in the learning community (Deeley & Bovill, 2017; Sambell & Graham, 2010).

In addition, student partnership in assessment serves to democratise education by creating a co-dependent assessment system that balances the hierarchical teacher-student power relationship that often exists (Deeley & Bovill, 2017). By advocating a collaborative relationship between students and staff, research shows that they can all achieve better mutual understanding (Fluckiger et al., 2010; Murphy et al., 2017) that may lead to more equal dynamics. Finally, students with first-hand experiences in education can often offer their preferred approach and unique insights in improving assessment and feedback.

3.4.2 Challenges in Promoting Students as Partners in Experiential Learning Assessment

A lack of student partnership in assessment is not an issue exclusive to experiential learning, but a universal issue in all modes of teaching and learning. Taking a broader view, Nash and Winstone (2017) blamed the "consumerist" approach to higher education which positions students as passive consumers of service and detaches them from their personal responsibilities in learning. Under such a consumer model, teachers also tend to believe that teachers are the ones, if not

the only ones, to provide quality assessment in an "environment shaped by fees" (Murphy et al., 2017).

Another more entrenched obstacle to promoting students as partners is the long-established teacher-student power relationship in assessment as mentioned in the benefits section. Traditionally, teachers often exercise full decision-making power in the assessment process, whereas students are viewed as the "novice" who lack experience and expertise to challenge teachers' authority (Boud, 2007; Deeley & Brown, 2014; Sambell & Graham, 2010).This socially constructed teacher-student demarcation is normalised and further strengthened by role expectations in our daily practice (Deeley & Bovill, 2017), preventing meaningful partnership from taking place in assessment. Under such a power structure, students may find it difficult to come up with assessment designs that differ much from what they have long been accustomed to (Deeley & Brown, 2014). They could also lack confidence (Abdelmalak, 2016) or feel anxious (Deeley & Bovill, 2017) to co-design assessment tasks. For teachers, some are concerned that student partnership undermines their professional legitimacy as they relinquish power, while others entertain doubts as to students' expertise and maturity in handling the assessment in an appropriate manner (Deeley & Brown, 2014; Murphy et al., 2017).

Students and teachers often have different motivations and expectations for engaging in partnership, and the differences give rise to tensions around differentials in power, reward and recognition of participation, identity, and responsibility for partnership work. The partnership between students and teachers is rarely automatic and requires significant teamwork and consideration on both parts.

All these issues could potentially lead to resistance to partnership in assessment and render the students as partners' practices tokenistic (Cook-Sather, Bovill, & Felten, 2014).

3.4.3 Current Collaborative Assessment Practices in Students as Partners

Healey, Flint, and Harrington (2014) demonstrated four main areas in which students often engage as partners through: (a) Learning, teaching and assessment; (b) Subject-based research and inquiry; (c) Scholarship of teaching and learning; and (d) Curriculum design and pedagogic advice and consultancy. In general, there should not be any boundaries as to what students should get involved as co-partners, if the idea is to have a partnership. Partnership is defined as a "reciprocal process through which all participants have the opportunity to *contribute equally*, although not necessarily in the same ways, to curricular or pedagogical conceptualisation, decision-making, implementation, investigation, or analysis" (Cook-Sather et al., 2014, pp. 6–7)

Students commonly engage themselves as partners in four main areas of assessment – designing assessment, marking criteria, self and peer assessment. So far, extant research has mostly been conducted in Australia, Europe or North America, focusing on students' perceptions of their partnership experience in assessment (Giles et al., 2004). To name a few examples, Deeley (2014) introduced

a co-assessment approach for her service learning course where students were required to give oral presentations to demonstrate employability skills and attributes developed through service learning. In addition to the teacher's assessment, each student also self-assessed their oral presentation. Subsequently, the teacher had individual appointments with each student to discuss their presentation, the discrepancy in assessment, and to agree on a mark. In another of Deeley's students as partners study (Deeley & Bovill, 2017), though not based in an experiential learning context, students were further engaged in co-designing their essay titles and marking criteria, which they subsequently used to self and peer assessment in the public policy courses. Likewise, Abdelmalak's (2016) research also demonstrates how six mature students collaboratively designed course assignments and grading standards and decided how they would be assessed in an education course.

However, the above studies all set out to investigate students' perceptions, which resulted in a range of mixed outcomes as challenges in assessment. To enrich students as partners' practices, future research in assessment to better inform education practices, such as the agreement between marking from different sources (e.g., Orsmond et al., 2002) and evidence of students' learning improvement should be carried out.

3.4.4 How to Involve Students as Partners in Assessment?

There are many areas in which students can get involved in the assessment. Below are some suggestions divided into five different categories (Table 3.4). I have just submitted a systematic review paper on student partnership in higher education assessment, I expect that would be published by the end of 2022. You may find more information on how to involve your students in this upcoming paper.

To truly embrace students as partners in assessment, teachers need to treat the partnership equally, to overcome the relinquishing of power they so highly hold.

3.5 Self-Assessment

Self-assessment is an assessment method that allows students to assess their own performance, as it is self-reliant, it helps students to be autonomous learners. It can be extremely valuable in helping students develop self-reflection, criticality and judgment and ultimately, learn how to be responsible for their own learning. The drawback lies in the fact that students may not be familiar with this self-motivated assessment, and may lead to over- or under-evaluation of their performance given how self-assessment may be subjective. Self-assessment is particularly effective for experiential learning education because students can be more aware of their strengths and weaknesses and understand themselves. As student experience may vary daily in experiential learning, this type of self-assessment helps students rework reflection (i.e.) providing a "second reflection action" opportunity (Chan & Wong, 2021).[2] Self-assessments are more often used as part of a formative assessment process, rather than a summative one. In Adachi et al. (2018) study, academics shared their belief in self-assessment:

Table 3.4 Five categories involving students as partners in assessment

5 Categories Involving Students as Partners in Assessment	
Policy establishment	• Collect student input in institutional assessment protocols • Invite student members to develop assessment policy and regulations • Involve students in the establishment of assessment appeal guidelines • Involve students in plagiarism policy and regulations
Evaluation and quality assurance	• Invite students to sit on quality assurance panels in programmes, university and national levels • Involve students in the complete accreditation process with professional bodies • Co-design course/institutional evaluation surveys with students
Assessment and feedback design	• Partner with students to negotiate the assessment approaches and timeline • Co-develop assessment criteria and rubrics • Co-design the assessment by gathering students' inputs or involving them in the actual design • Design the feedback mechanism with students on questions such as who, how and when to provide the most constructive feedback • Explore possibilities on partnership in designing innovative assessment • Allow flexibility for students to generate their learning outcomes and aligned assessment in experiential learning (Luk & Chan, 2021)
Marking and providing feedback	• Give student opportunities to self and peer assess • Involve students in making decisions on group assessment and issues with free-riders • Allow students to critique the feedback provided • Set up student-led feedback mechanisms to help each other (e.g. Gilley & Clarkston, 2014)
Assessment literacy	• Host joint professional development on assessment literacy for both students and teachers • Discuss students' and teacher's rights and responsibilities • Organise regular meetings with students to discuss issues in assessment and feedback

"you know as lifelong learners the ability to be able to self-assess, to judge where you're at. And say, 'Look, I think I'm under here, or I think I'm performing well here and why'". I think that is a really key transferable skill that our students need to learn' and students become critical independent learners.

3.6 Peer-Assessment

Peer Assessment is an assessment that allows students to assess each other's performance. Students reflect on others' performance in both academic knowledge

and holistic competencies. It can be extremely valuable in helping students learn from each other through listening, analysing and problem solving. For example, in my own presentation assessment class, students often reflect the do's and don'ts from watching each other presenting. Students are then asked to provide one strength, one weakness and one area for improvement for the student presenter, and this gives students the opportunity to be exposed to different perspectives, critique and judge, and ultimately, learn how to be responsible for their own learning. Critique and judging are skills in themselves; students need to learn how to critique and not criticise, and provide fair and unbiased judgement. This is also a great way to provide and receive more feedback from others and reduce teachers' workload. Similar to self-assessment, there is the issue of unfamiliarity with such assessment; students may not be able to judge the levels of performance, and with peer assessment, sometimes students may feel like they are under peer pressure. Adachi, Tai, and Dawson (2018) has shown that with peer assessment, students develop the ability to learn collaboratively, as it involves judging others' performance, and they also understand the criteria standards better and develop feedback and other transferable skills.

3.7 Group Assessment

Group work is a form of cooperative learning. Teamwork, communication, and project management skills are known competencies that are activated while engaging in group work (Burke, 2011), and as industries often require teams to work together, group work helps to prepare students for their future careers. As members of a team, students feel a sense of responsibility, and that can ideally motivate their efforts and contributions to the project. They also learn different perspectives through collaborations with their peers. However, when assessing groups, clear criteria and guidelines on the process and product are vital to ensure valid and fair grading for both collective and individual contributions. It is relatively easy to grade the product of group work, but more difficult to grade the process. With reference to Chan (2010), examples of criteria which may be appropriate for assessing the process of group work include:

- Demonstrate leadership;
- Attitude of being cooperative;
- Application of a variety of methods to deal with different tasks and difficulties;
- Engagement and motivation with the assigned task;
- Ability to motivate other people;
- Willingness to listen and responsiveness to feedback and opinions.

In Chapters 4 and 8, cases on how teachers are assessing in experiential learning will be shown.

Conclusions

In this chapter, assessment in academic knowledge and experiential learning were examined in detail. Readers learnt about the challenges in both domains and how they apply these concepts in experiential learning. By understanding the challenges, teachers, designers, administrators, senior managers and others can put on their thinking hats to design effective assessments for experiential learning and avoid some of these known issues. Good assessment design can motivate students and stakeholders, particularly, teachers and students need to be assessment literate to become more motivated. The Teacher Assessment Literacy Awareness Exercise provides simple questions for teachers, teaching assistants and those who are going through the design process. It is not just a literacy exercise; it can also be used as an assessment design guideline for both academic knowledge and experiential learning.

Assessment literacy for students is equally important. Our 4-dimensional Student Assessment Literacy for Holistic Competencies framework contains an important message, that is, student needs to be able to critique, to develop, to judge and to self-assess the feedback, the assessment and the activity. This brings out the connected relationship between students as partners and experiential learning education.

In the next chapter, we will present common assessment approaches for the different types of experiential learning.

Questions to Ponder

- Are you assessment literate? Rate yourself using the Teacher Assessment Literacy Awareness Exercise based on a 3-Likert scale;
- How will you involve your students as partners in assessment? Use the five Categories Involving Students as Partners in Assessment as a checklist.

Personal Reflection

I like to borrow William Shakespeare's quote in Hamlet and slightly modified it to

"To **assess** or not to **assess**… that is the question!"

Assessment drives learning and can capture your students' attention, but for experiential learning, when the activity itself is so meaningful, do we want to ruin it by assessing it? How can we ensure that students continue to achieve impact, develop and not focus on grades or credits alone?

Notes

1 Holistic competency is defined by the author as an umbrella term for generic skills (e.g. teamwork, self-management, creativity), attitudes (e.g. resilience, hardworking) and virtues (e.g. respect, honesty, dignity).
2 Rework reflection is defined as the type of reflection approach which allows students the opportunity to perform 'at least' a 'second reflection action', allowing the students to rework on their reflection from their initial reflection. The rework reflection may be from their own reflection or from reflecting on peers' reflection. This can be a very powerful reflective approach if teachers provide a suitable environment. Students can become responsible for their own learning or in reflective terminologies, reflexivity in reflection. Cited directly from Chan and Wong (2021).

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4 Designing Experiential Learning Assessment

> Assessment in the future may not be the kind of assessment that you and I traditional grew up with. The word assessment may mean something completely different. Or new term may need to coin for the type of assessment deems suitable for experiential learning.
>
> – Chan, CKY

Introduction

This chapter begins by providing a set of (A–D) essential questions for teachers and educational developers to ponder when designing experiential learning assessments. It demonstrates via a genuine case study on how these questions can be used to assist teachers in designing the assessment properly. The chapter then examines diverse assessment approaches that are commonly used within the context of experiential learning, such as portfolios, reflective journals, concept maps, participation, marking sheets, and observation, and discusses different types of experiential learning activities such as community service learning, field trip, internship, student exchanges, project competition, etc.

4.1 Essential Questions for Effective Assessment Design in Experiential Learning

In Chapter 3, the foundation of various assessment terminologies, such as diagnostic, summative, formative and learning-oriented assessments was presented and a detailed account of the kind of challenges in academic knowledge and in experiential learning assessment was explored to prepare the readers on how to effectively design experiential learning assessment.

Effective assessment design needs to take into account many of the aforementioned challenges, such as the absence of clear learning outcomes and the confounding variables, in Chapter 3 (Ewert & Sibthorp, 2009). Qualters (2010) acknowledged that effective assessment approaches in experiential learning must be able to "separate perceived learning from genuine learning" and at the same time, accurately report the learning process and students' development. When

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designing assessments, the priority is to identify their purposes. Qualters (2010) posed four essential questions for teachers to seriously consider before they design assessments for experiential learning (adapted from Elman [1993]). These are (1) WHY are we doing the assessment? (2) WHAT are we assessing? (3) HOW do we want to assess in the broadest terms? (4) HOW will the results be used?

These questions are important, but I felt that Qualters' questions are too broad and do not provide insights into the design. Given experiential learning activity requires students to be self-responsible and take ownership of their learning experience, Qualters' questions are not able to accurately guide teachers in assessment design. Grounded on the elements from the HCDF (Chan & Yeung, 2020) and the mirrors from the Chain of Mirrors as discussed in Chapter 2, I recommend using the following questions to guide the assessment plan in a step-by-step approach. There are four main questions known as (A–D), then each main question is followed by a subset of questions to allow further in-depth contemplation for the assessment design. Table 4.1 shows Chan's (A–D) Essential Questions for Effective Assessment Design in Experiential Learning.

4.1.1 Sample Case Study – Assessment Design for Oversea Student Exchange Programme Using Chan's (A–D) Essential Questions for Effective Assessment Design in Experiential Learning

At a university in Ireland, engineering students in their third year can opt to spend a semester in an oversea university (for example, in Germany, France, the United States or Hong Kong) as an exchange student. Students undertake respective courses that are mapped to their current curriculum, and may also opt to take some electives that are of interest to them in the oversea university. The credits achieved from the courses are transferred back to their home university and form part of their Grade Point Average (GPA). The assessments used aligned with the learning outcomes of the courses and are usually conventional assessments within most engineering courses, targeting mainly academic knowledge in the engineering discipline.

In order to not risk their GPA, most students do not choose the student exchange opportunity (note that this aligns with the Holistic Competency Development Framework (HCDF), it shows that student can lack motives to join and experience the activity. For the student exchange, students *avoid* the experience, that is their approach to NOT develop). Furthermore, student exchange organizers and teachers tend to encourage only those students who can achieve high grades to participate. They also discourage students to take electives that are not relevant to the chosen field of engineering, such as common core or language courses, while they are overseas.

Looking at the assessment, are the assessments effectively designed for an oversea student exchange programme?

Applying Chan's (A–D), let's look at Question A, why are we assessing? We are assessing because the students need the credits to proceed to the next level and also, we need to provide evidence that student exchange is a value-added experience for our students.

Table 4.1 Chan's (A–D) essential questions for effective assessment design in experiential learning

A WHY am I assessing?

1. Is it for quality assurance, summative, formative, diagnostic, enhancing learning or a combination of these purposes?
2. Is it actually an acceptable reason to assess?

B WHAT learning outcomes should I be assessing?

1. Academic knowledge and/or holistic competencies?
2. Are these learning outcomes "hidden or known" within the activity?
3. Are these learning outcomes directly related to student's rationales for engaging in the experiential learning activity? [According to HCDF (chapter 2), if student's rationale is fulfilled, then the student will engage in the activity and the assessment.]
4. Do these learning outcomes involve student's inputs?
5. Do I need to assess **ALL** the learning outcomes?

C HOW should I assess these learning outcomes?

1. What assessment approaches should I employ?
   - i Why am I selecting this assessment approach?
   - ii Is this approach able to explicitly measure the learning outcomes?
   - iii Does this approach embrace student's rationales for engaging in the experiential learning activity? [According to HCDF, if student's rationale is fulfilled, then the student will engage in the activity and the assessment.]
   - iv Does this approach make sense for the students given the activity experienced?
   - v Does this approach allow for reflection?[a]
   - vi What does excellent and poor assessment look like in this approach?
   - vii Is it actually useful, feasible and meaningful for the students and teachers to be assessed using this assessment?
   - viii Who should be involved in the assessment?
   - ix When should the assessment take place?
2. How many assessment approaches do I need to measure each learning outcome? [Back to C.(i) if there are many more assessment approaches]

D Using these assessments, WHAT evidence and feedback will I provide to the different stakeholders?

1. For students, WHAT kind, by WHOM and WHEN should I provide the feedback?
2. For teachers, WHAT kind, by WHOM and WHEN should I provide the feedback?
3. For University, WHAT should I provide as the evidence for quality assurance?
4. For Funding bodies, WHAT should I provide as the evidence for quality assurance?

a A very important question in experiential learning.

Consider Question B, what learning outcomes should I be assessing? As mentioned, the actual learning outcomes are those related to academic knowledge, but are they the appropriate learning outcomes for an oversea student exchange programme? It seems that the programme has not considered other hidden

learning outcomes or students' actual rationales for their participation in an oversea student exchange programme. Put it simply, if you were an exchange student, why would you participate in a student exchange programme, what would you anticipate to learn, to do and to develop? According to Montrose (2015), "many study abroad programmes simply transfer academic credits from one traditional discipline-based educational institution to another without intentionally utilising the international experience itself as the basis for learning" (p. 7).

As mentioned, rationale strongly influences student's participation and approach to develop; it has been evidenced to be an important element in the HCDF and Chain of Mirrors. The expectations of an oversea student exchange are to experience life outside their home country and take the opportunities to make new friends, learn and immerse into a different culture. Yet, holistic competencies such as global citizenship, adaptability and confidence are not part of the learning outcomes, and without the learning outcomes, the relevant assessment also does not exist. This culminates to be one of the biggest issues with experiential learning assessment design. Despite those learning outcomes being the jewels of the oversea student exchange programme, they are hidden and not assessed. As many students end up being assessed only on their discipline knowledge in the exchange programme, they choose to concentrate on building up their academic knowledge to achieve the high grades required for their GPA out of time-management concerns. Possible reflection on the exchange experience and learning gains from residing in an oversea country are significantly neglected. Many students may not even make new friends. Without being assessed on it, they are less engaged in their experience, and their approach to developing those competencies is discounted.

Some may argue that students may find time to immerse more in the culture without being assessed on those intangible learning outcomes, but the opportunity to provide direct evidence to universities and funding bodies on students' value-added experience will be missed. And from the example above, some learners may neglect valuable experiences in student exchange, given only the assessment of academic knowledge forms part of the GPA. Thus, the key is to balance the answer to question (C) (i.e.) to check if the assessment useful, feasible and meaningful for students and teachers. Grimes and Gibbons (2016) stated that,

> if there are no definitive or absolutes on how we assess, we must seek the means by which to establish and ensure the applicability, value and credibility of the relevant process if we wish to justify and monitor what is taking place.
>
> (p. 109)

In this example, Questions C and D become meaningless for these students given that the steps defined by the first two questions were not designed appropriately. The genuine learning outcomes are misplaced, and the assessment does not align with the learning experience.

In Chapter 8, many excellent cases will be presented, I invite you to use the Chan's (A–D) questions and apply them to the cases in order for you to understand how assessment can be effectively designed.

4.2 Assessing Holistic Competencies in Experiential Learning Activities

As some holistic competencies are better developed inside the classroom and some outside, it would not be feasible to assess all types of competencies in one activity (Clanchy & Ballard, 1995; Crebert et al., 2004). Therefore, universities should provide diverse learning opportunities for students to develop different holistic competencies to become well-rounded individuals. To achieve this goal, it is important to expose our students to various learning experiences throughout their studies, such as in-class experiences where students develop competencies alongside disciplinary knowledge and out-of-class experiences where students enjoy a variety of other authentic and enriching learning opportunities. In the figure below (this figure first appears in Chapter 2, for ease of reading, the figure is presented here again), I present a classification of possible learning opportunities for students' holistic competencies development. As shown in the figure, competencies can be developed in many activities, in fact, students can develop competencies during non-academic related opportunities such as participation in scouts or sports, but these opportunities are often not assessed or recorded.

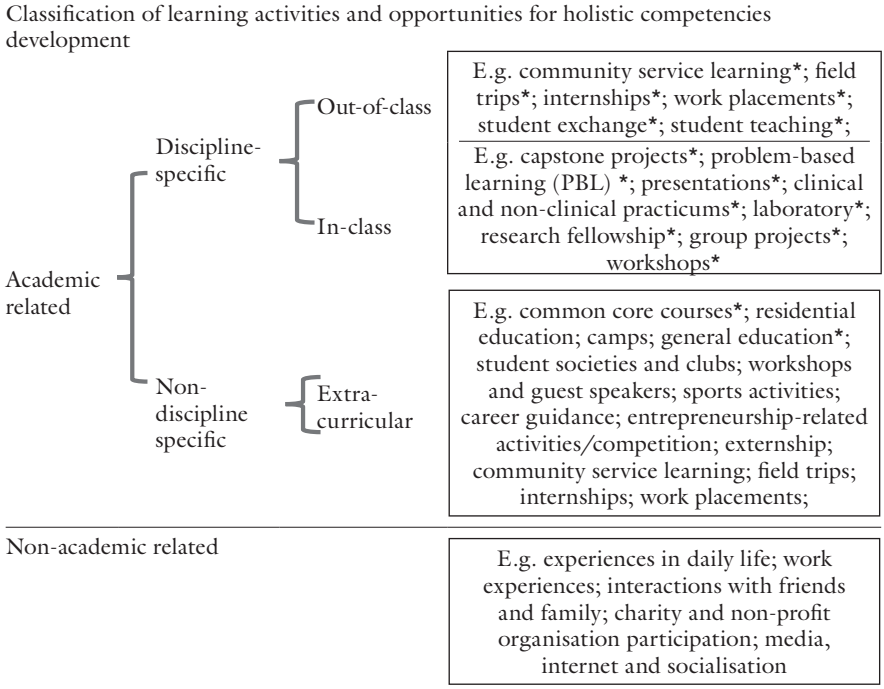

Figure 4.1 Classification of the types of learning activities (in-class, out-of-class and extra-curricular) for the development of holistic competency in university (Duplicate here for ease of reading).

4.3 Experiential Learning Activities and the Common Assessment Approaches

Deployment of assessment approaches depends on the purposes, intended learning outcomes, type of field-based experiential learning in which the students will participate, and many other factors. As shown above, there are many different types of activities, with even more emerging, that teachers are innovatively designing every day. There is no one-hat fits all in assessment, thus, in the section below, effective assessment approaches that have been frequently employed in common types of field-based experiential learning activities are presented. In Chapter 8, we will provide some best assessment practices used around the world that are tailor-made for specific experiential learning activities, these assessment practices may give us a glimpse on how teacher may design our own effective innovative assessment in experiential learning.

4.3.1 Common Assessment Approaches

In this section, some of the common assessment approaches in experiential learning are presented in detail. These common approaches can be used to assess both academic knowledge and holistic competencies. As this book focuses on experiential learning, the contexts of these common assessment approaches are intended for learning outcomes that arise from common experiential learning activities. I have employed a presentation format for these assessment approaches so that readers can easily read through the approach of their interest. Each approach begins with an introduction and the structure of the approach, then a list of advantages and disadvantages follow, and after, a list to show how the assessment can be designed effectively, finally, it ends with a sample rubric for readers to employ and adapt. Common assessment approaches presented include:

Blogs	Portfolios	Reflective Journal
Direct Observation	Posters	Short Answer Questions
Learning contracts	Presentation	Written Reports

In addition to the approaches discussed below, readers can also find sample rubrics at the end of the chapter for

Logbooks	Peer-assessment	Self-assessment	Video project assessment	Worksheets

Blogs

Blog is short for we**b log.** It is an asynchronous platform for posting messages and materials for discussions and sharing. Blogs add a participatory dimension to their assessment through facilitation of participatory culture. According to researchers (Barwell et al., 2011; Gardner & Ladyshewsky, 2008; Hung & Huang, 2016; Williams & Jacobs, 2004), in comparison to the conventional teacher-centered approach, blog facilitates a student-centered approach to learning and assessment; the learning is driven by students through their sharing, comments, reflections and feedback. The interactive nature of blogs 'brings … learners' thoughts and arguments into the open and allows for discussion and restructuring of knowledge to occur' (Gardner & Ladyshewsky, 2008, p. 242). Through inter-blogging discussion, collaborative production and peer review (Allen, 1999; Halic et al., 2010; O'Neill et al., 2011), students are given the opportunity to learn, assess, and receive an evaluation from their peers and improve their evaluative judgement. These foster students' development of holistic competencies like communication skills and self-reflection, while upholding the spirit of experiential learning at the same time (Fessakis et al., 2008; Gardner & Ladyshewsky, 2008). Together with technology, it can be a favourable approach for students in the digital age (Garcia et al., 2019).

Structure of Blogs

The structure of blogs is simple. Depending on the platform used, it commonly allows images, videos, podcasts and embedded links in the post and has a section where readers can leave comments at the end of the post. It may also allow private and public postings depending on the privacy settings. A blog can be an individual or group work, and each entry can have one author or many. Blog entries are typically displayed in reverse chronological order with the most recent post displayed as the highest post on the page.

	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
Y	Take time to provide feedback	
Y	Suitable for a large class	
Y	Can use technology	
	Passive approach	
Y	Active approach	
Y	Process Oriented Method	
	Product Oriented Method	
P = Possibly Y =Yes		

Advantages of Blog Assessment

1 New opportunities for learning about cooperation and idea exchange (especially when class time is limited).
2 Fostering learner autonomy.
3 Facilitating higher levels of learning and competencies such as critical thinking.
4 Providing opportunities for students to enhance IT and other digital literacy skills.
5 Students feel safer and participate in a more organic way.
6 Strengthening and expanding the learning community, reaching wider audiences.
7 Convenience and flexibility in terms of time and space.
8 Allows self and peer assessment.

Disadvantages of Blog Assessment

1 Partial and superficial participation: Participation level varies largely among participants and a few students may dominate the discussion. Students may not take it as seriously as face-to-face discussion. It requires a longer period of time to assess.
2 Unstructured feedback: Students may or may not get responses or feedback immediately because not all entries and responses happen at the same time.
3 Unfamiliar assessment and feedback approach: Blog assessment is still new to both students and teachers, so its marking criteria are not always clear. Similarly, promoting self and peer feedback may be foreign to many students (Caldwell & Heaton, 2016).
4 Distraction: Students are more likely to go off topics and get distracted. It is difficult to ensure learning outcomes are met.
5 Time-consuming: Student assessors and teachers need more time to review.

How to Design an Effective Blog Assessment?

1 It is important that instructions and expectations of blog assessment are clearly communicated to students in advance. Ensure students know what the objectives of the blog assessment are.
2 Provide assessors with examples of how to provide constructive feedback.
3 Provide students the time period, location, guidelines, requirements and assessment criteria. Students should also be aware of who is going to assess them – teacher, tutor, peers and/or self? And if peer- and/or self-assessment are employed, decide if the weightings would be the same as the teacher's assessment.
4 Prepare a structured marking sheet for all assessors, so all assessors are familiar with the assessment criteria. Do you grade every entry? Or do you grade selected posts? Do you provide marks for feedback and comments? Is it the frequency of posts that you mark or the quality of posts? For example,

Levin and Davis' (2007) assessment of a blog task for a marketing promotions course was based on the frequency of postings. Students needed to post at least nine times to obtain a maximum of 30 points.

5 It is fine if blog assessment is not associated with marks, teachers may prefer to use blog assessments as a formative assessment with no grading (Table 4.2 shows a sample marking rubric for assessing students' blogs during their exchange studies).

Blog – Marking Rubrics

Table 4.2 A sample rubric for assessing students' blogs during their exchange studies

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Ideas and contents (intercultural awareness)	- posts provide an interesting, critical and comprehensive record of the student's exchange life which shows a high level of self-reflection in intercultural communication.	- posts generally provide an interesting, critical and comprehensive record of the student's exchange life which shows some level of self-reflection in intercultural communication.	- posts record the student's exchange life and some are presented in an interesting and critical manner with minimal self-reflection in intercultural communication.	- posts appear irrelevant to the student's exchange life, or are presented poorly, showing little to no self-reflection from the student.
Frequency	- updates posts more frequently than required and keeps a regular posting record.	- updates posts as required.	- updates posts as required, but at times needs to be reminded.	- does not update posts as required; the posting frequency is unsatisfactory.
Visual enhancement	- uses high quality multimedia to promote the visual appeal and readability of the blog.	- uses mostly high-quality multimedia to promote the visual appeal and readability of the blog; sometimes the usage may not be appropriate.	- very little evidence of multimedia usage to promote the visual appeal and readability of the blog.	- does not use multimedia to promote the visual appeal and readability of the blog; readability of contents is weak.

Direct Observation

Direct Observation assessment is exactly as the name suggested – the assessors observe the students' performance and assess their level of ability based

on their performance. The Council on Social Work Education refers to this type of observation as "observations in real time" (Council on Social Work Education, 2015, as cited in Dill, 2018). Clinical-related disciplines often use a form of direct observation known as Objective Structured Clinical Examination (OSCE) to assess students' practical skills. Teachers may sometimes use direct observation to judge each student's input in group work activities to prevent free-riders. In experiential learning, direct observation can provide an accurate account of not just how the students perform, but observers can also evaluate many of the holistic competencies that students develop during the course of the experiential learning activity. Observation assessment is only effective when it follows a systematic plan to help both the assessor and the student focus on what need to be observed and recorded. An oral assessment is often used as a follow-up assessment to supplement observations of students' performance. According to Beddoe et al. (2011), observations are more than just 'watching', as those who are observing are also being observed, learners learn by observing the observers and that can lead to emerging competence. Observation can be subjective, and teachers and researchers (Gauthier, 2019; Maxwell, 2001) are sceptical about how deep direct observation may be possible, as they feel that this assessment approach may not easily assess higher-order learning outcomes (e.g. critical thinking), thus, it is often supplemented by other forms of assessment. However, for holistic competencies such as teamwork, sometimes, there is no effective alternative to direct observation.

Structure of Direct Observation Assessment

The structure of an observation assessment greatly depends on the discipline in which the assessment takes place, and it also depends on whether the assessor is observing the entire activity or only part of it. In general, the assessor will observe for five to ten minutes, make a note to help with the feedback and grading, and sometimes follow up with an interview or oral assessment.

Y	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
Y	Take time to provide feedback	
	Suitable for a large class	
	Can use technology	
	Passive	
Y	Active	
Y	Process Oriented Method	
Y	Product-Oriented Method	
P = Possibly Y =Yes		

Advantages of Direct Observation

1 Observation may sometimes be the only assessment method possible that accurately assess a learning outcome.
2 There can be no plagiarism or false reports.
3 It is a great way to assess practical skills and holistic competencies.

Disadvantages of Direct Observation

1 Some studies have shown that direct observation may not assess higher-order levels of learning outcomes (Beard et al., 2009), and teachers often felt that it is not adequate for a full assessment. Thus, other assessment approaches may be required. However, other researchers have found that it has been used to assess higher-order levels of learning outcomes such as critical thinking (Brunt, 2005; Paul, 2014).
2 Direct observation assessment requires a lot of time to assess and to prepare, thus, it is an expensive way of assessing.
3 The presence of the observer can change a student's performance as being watched can be intimidating for many students. Furthermore, the dynamics of the observation room may change as the observer/assessor enters. It is often debatable whether the observer/assessor should be visible or hidden (Kazdin, 1982; Labaree, 2002). So where, who and how the observation is being assessed are factors which may affect a good observation assessment.
4 There is no student anonymity in direct observation (Coffelt, 2017).
5 To ensure high efficiency and reliability, clear grading standards for all parties are essential. However, grading criteria for observation assessment can be difficult to design, develop and follow.
6 Immediate feedback is useful but is sometimes difficult due to time constraints.
7 Practical work is usually ephemeral and dissenting views may later be contested if notes or recordings are not documented clearly.
8 Direct observation can be subjective.

How to Design an Effective Direct Observation Assessment?

1 Ensure students know what the objectives of the observation assessment are.
2 Provide students the time period, location, guidelines, requirements and assessment criteria. Students should also be aware of who is going to assess them – teacher, tutor, peers and/or self? And if peer- or self-assessment are employed, decide if the weightings would be the same as the teacher's assessment.
3 Prepare a structured marking sheet for all assessors, so all assessors are familiar with the assessment criteria.
4 Feedback is very important for a good observation assessment (Table 4.3 shows a sample rubric for a direct observation assessment that can be used in a community service project partnered with a non-profit organisation. This is the rubrics used by the community service partner to assess the student's performance within a group).

Direct Observation – Marking Rubrics

Table 4.3 A sample rubric for a direct observation assessment that can be used in a community service project partnered with a non-profit organisation

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Knowledge transfer	- Makes explicit references to previous learning and applies in an innovative (new & creative) way that knowledge and those skills to demonstrate comprehension and performance in novel situations.	-Makes references to previous learning and shows evidence of applying that knowledge and those skills to demonstrate comprehension and performance in novel situations.	- Makes references to previous learning and attempts to apply that knowledge and those skills to demonstrate comprehension and performance in novel situations.	- Cannot make references to previous learning; does not apply knowledge and skills to demonstrate comprehension and performance in novel situations.
Teamwork	- Respectfully listens, interacts, discusses, and poses questions to all members and helps direct the group in reaching consensus. - Always shares useful ideas.	- Respectfully listens, interacts, discusses, and poses questions to others. - Usually provides useful ideas.	- Has some difficulty respectfully listening and discussing and tends to dominate discussions. - Sometimes provides useful ideas when prompted.	- Has great difficulty listening, argues with teammates, and is unwilling to consider other opinions. Impedes the group from reaching consensus. - Never contributes to the group.

Adaptability	- Always able to change their ideas or behaviour in order to deal with new situations. - Embraces mistakes as an essential part of learning, and actively learn from mistakes.	- Usually able to change their ideas or behaviour in order to deal with new situations, sometimes with the help of others. - Accepts the connection between mistakes and learning; learn from mistakes when guided.	- Able to change their ideas and behaviour in order to deal with new situations with others' help. - Has some difficulties in dealing with failures and mistakes.	- Unable to change their ideas and behaviour in order to deal with new situations. - Unable to deal with failures and mistakes.
Social competence	- Demonstrates strong connections with service agencies, service targets and other students; actively cultivates healthy relationships with many others and helps those in need.	- Demonstrates some connections with service agencies, service targets and other students; in general, cultivates healthy relationship with others and helps others.	- Attempts to demonstrate a connection with service agencies, service targets and other students; tries to cultivate healthy relationship with others and helps others when asked.	- makes no effort to connect with service agencies, service targets and other students; involves in unsatisfactory relationship with many others and unwilling to help.
Leadership	- Constantly leads and empowers group members towards consensual solutions which maximize members' commitment to and satisfaction with agreed upon responses.	- Able to lead and empower group members in consensual solutions resulting in group satisfaction with agreed responses.	- Requires some assistance in leading and empowering group members in consensual solutions resulting in group satisfaction.	- Unable to lead or empower group members.

Learning Contract

A learning contract, also known as negotiated learning agreement, is a formal written agreement used when planning for a learning project or activity. According to Knowles (1986) who pioneered the use of learning contracts as a mechanism for self-directed learning, learning contracts serve as "an alternate way of structuring a learning experience."

In some learning programmes, learning contracts are merely agreed on with no assessment carried out. This practice stems from the belief that the process of planning and conducting a contract itself is constructive without being assessed (Powers, as cited in Boak, 1998). However, the assessment of the contracted learning process is said to be essential in motivating student learning and evaluating the effectiveness of the contract (Boak, 1998). Commonly and most effectively, throughout the programme or activity, students would arrange meetings with advisors or teachers to review progress and share ideas (Knowles, 1986). Advisors are also the ones who would evaluate students' work as evidenced in the learning contracts and give the final grade (usually pass/fail, depending on the course nature and requirements).

In some courses, the learning contract is implemented like a traditional assignment which would be assessed and evaluated based on the specific criteria. Possible criteria include how well the learning objectives listed on the contract met course expectations; or how relevant the learning strategies are to the learning objectives. However, commonly, only the learning process and accomplishment-type learning objectives are evaluated (Knowles, 1986).

Negotiation and commitment by both the learner and the advisor are essential elements in contract learning (Anderson et al., 2013). Negotiated through discussions, both parties seek consensus on how particular activities should be conducted to achieve specific learning objectives, and the relevant roles and responsibilities they each have to fulfil (Anderson et al., 2013; Knowles, 1986). The acquirement of holistic competency can be listed as a type of learning objectives in learning contracts. Before drafting the learning contract, the advisor should assist the learner in locating and establishing their learning needs relevant to the course expectations and develop realistic learning objectives accordingly (Anderson et al., 2013). In some cases, the contract learning processes would also include tasks for learners to ponder their learning needs, or in other words, their weaknesses related to the programme objectives.

Ongoing consultation is likely necessary to review learning progress and motivate the learner (Knowles, 1986). Hence, we can see that although it might not be explicitly presented, the analysis of individual learning needs always takes place in contract learning, often during negotiations between advisors and learners.

To develop successful learning contracts, students reflect upon their learning and arrange discussions with teachers or advisors, while the latter offer ongoing support and advice, keep track with the direction and the relevance of

the project, balance students' learning needs and course requirements, as well as maintain the educational standard (Anderson et al., 2013). Throughout the negotiation process, teachers or advisors and students develop a collaborative relationship with open communication and mutual respect.

Structure of Learning Contract

The structure of a learning contract can vary depending on its purposes. However, according to Anderson et al. (2013), a learning contract usually consists of the following sections:

- The learning objectives of the learning project;
- The resources and strategies for achieving the learning objectives;
- The evidence produced for indicating the achievement of the learning objectives;
- The timeline and completion date;
- The assessment criteria applied for assessing the evidence.

Y	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
Y	Take time to provide feedback	
Y	Suitable for large class	
Y	Can use technology	
	Passive	
Y	Active	
Y	Process-Oriented Method	
	Product Oriented Method	
P = Possibly Y =Yes		

Apart from the five typical sections, it may also include the area of knowledge and the specific competency that the learning contract addresses. For some contracts, there could even be a separate section allowing advisors to write comments or students to record important notes during discussions.

Contract learning is a very flexible learning method. Course teachers can adapt learning contracts into arguably any discipline and any course. However, not all contracts contain all the above-mentioned elements, and not all contracts grant total freedom to students. In some contracts, learning objectives are prescribed by the instructor and learners can only choose their own learning strategies; some contracts would provide predetermined options for students to choose from (for example, a list of course objectives which students can amend, add to, or omit); other contracts require input from learners regarding the learning objectives (ranges from total freedom to minimal input; Knowles, 1986).

Advantages of Learning Contract

According to Anderson et al. (2013), learning contracts allow

1 Individual differences to be acknowledged. Learners are allowed to tailor-make learning activities that suit their specific needs and according to their own interests. Hence, students' engagement and motivation are usually enhanced when compared to traditional learning.
2 Students to have more autonomy in their learning. More autonomy, in turn, means more responsibility to bear. Students take a more active role in their learning, developing their self-directed learning potential.
3 Students to plan the development of their holistic competencies.
4 Students to reflect on their learning. Students gain a better understanding of the nature of learning in which they are engaged. It also allows students to identify their most preferred learning approach. Students are more independent in their learning and rely less on their teachers and advisors.
5 Students to be able to develop a more democratic relationship with their teachers/advisors, compared to the traditional teacher-student relationship. The parties become learning partners.

Disadvantages of Learning Contract

According to Anderson et al. (2013), disadvantages of learning contracts include

1 Not all learners are capable to plan and write learning contracts as these abilities (i.e., planning and writing) are not innate but learned (Brookfield, 1985).
2 New learners may feel stressed when initially engaging with learning contracts because of the unconventional flexibility. Further guidance is required when introducing learning contracts to new learners because the subsequent effectiveness will be affected.
3 Learners may be uncomfortable with learning contracts as they are often not the best judge of what is expected to learn and to what extent.
4 The drafting of a learning contract requires students to have a certain understanding of the subject (at least an overview of the topic) in advance, especially if this subject is new to the learner. Without sufficient background knowledge, the effectiveness of the learning contract is in doubt.
5 Learning contracts may not be appropriate for courses that are highly informational.
6 The negotiation process of learning contracts between advisors and students is very time-consuming, especially if this is done for the first time.
7 When assigning learners to advisors, there may be very little choice or design involved. If there are disagreements, especially during one-to-one negotiation and without further backing and support, there can be a concern

for learner vulnerability and power dynamics. In addition, if the subject expertise of the assigned advisor does not match learners' needs, the level of guidance possible will be limited.

8 Learning contract is still relatively new in higher education. Both teachers and students are potentially anxious and reluctant to adopt this new method, particularly if this is used as an assessment.

How to Design an Effective Learning Contract Assessment?

According to Anderson et al. (2013), to design an effective learning contract assessment

1 Students and teachers or advisors engage in discussions at the initial stage to identify a learning need with relevance to the course requirement, before proceeding to establish specific objectives. Teachers/Advisors assist students (the learners) to pinpoint what they want to learn, could learn and should learn (Cross, 1992), which also clarifies to students what is negotiable and what is not.
2 Teachers or advisors assist students to develop specific objectives by refining the learning need to be identified. Teachers or advisors should ensure that students have the capability to achieve the objectives developed under the given time and resources, while simultaneously, making sure the objectives reflect the perceived needs of students (the learners).
3 Teachers/Advisors should assist students in identifying the best resources available for achieving the objectives, and in deciding on the best strategies to obtain required information and materials.
4 Students and teachers/advisors need to discuss and reach a clear consensus on what is to be assessed, as well as what evidence, aligning with each specific learning objective, is to be provided as proof of achievement.
5 Students and teachers/advisors need to negotiate and determine the assessment criteria that are the most appropriate and well-aligned with various learning objectives, depending on their nature. An effective learning contract assessment requires both parties to reach a consensus on the appropriate quality standards of the completed project.
6 While students are allowed to negotiate with the teachers/advisors on the assessment criteria, well-defined minimum criteria should be provided to students for reference. Relevant conventions (e.g. word length, form, procedures for referencing, etc.), depending on the type of project, should be clarified to students.
7 Obtaining feedback from relevant experts is important in learning contracts. Teachers/Advisors should discuss with students how the feedback provided can be incorporated into the assessment.
8 Teachers/Advisors should also negotiate with students regarding the form of the assessment (the form of feedback to be provided, the need for an

evaluation report, if marks or grades are to be used to indicate achievement level, etc.) tailored to suit the best needs of students.

9 The effectiveness of the completed learning contract is determined by how well the assessment criteria are met. A completed learning contract is seldom developed from one single consultation with the teacher/advisor. Students need to carefully review the draft of the learning contract proposal. (Table 4.4 shows a sample marking rubric for assessing student's learning contract).

Application Example of Learning Contract – The HAVE U Can Programme in Hong Kong

In the summer of 2018, students from six universities in Hong Kong were invited to join a non-credit five-day residential programme known as the HAVE U Can programme (Chan, 2019), to enhance their holistic competency, particularly in creativity, critical thinking, appreciation, consideration, responsibility, leadership, teamwork, resilience and communication. About 200 first- and second-year undergraduates from various disciplines enrolled in the programme. Students were given the opportunity to stay in residential colleges at the University of Hong Kong and were put into small groups of five or six. Each group was mentored by two trained senior student mentors. A mentoring kit was provided to each pair of the student mentors with ice-breaking questions and games as well as FAQs, programme information, and other safety guidelines. The participating students must first attend an individual face-to-face interview. At the interview, the students were given information about the programme, and were asked about their rationale for joining the programme. All students were interviewed by the teaching assistants who were fresh graduates, and the interviews were conducted in a casual and relaxed manner.

The programme is a non-credit bearing programme that occurred in the summer, it was important to ensure that the students selected would be committed to the programme. By interviewing the students, it would allow us to select those students who were genuinely motivated and introduced elements of the programme that would engage students to develop their holistic competency. This was the idea behind the Rationale/Motives mirror in the Chain of Mirrors model presented in Chapter 2. The information of the programme also provided the foundation for the Expectation mirror.

On the first day of the programme, students met with their groups and their senior student mentors. Students had to fill in a learning contract and a validated self-awareness survey on their holistic competency (Chapter 9 shows a sample of a learning contract; For the validated survey, check out [Chan & Luk, 2020]). This helped students understand themselves better and commit to their team and the programme. These activities are grounded by the Expectations and Self-Awareness mirrors in the Chain of Mirrors model.

For more information on learning contracts, please read Anderson et al. (2013). *Learning contracts. A practical guide.* Routledge.

Marking Rubrics – Learning Contract

Table 4.4 A sample rubric for assessing students' learning contracts

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Learning goals	- Clear and relevant goals of learning, with in-depth justifications; - Learning goals demonstrates coherence with one another.	- Goals are in general clear and relevant, with adequate justifications; - Learning goals are in general coherent with one another, with slight room for improvement.	- Demonstrates attempts to lay out relevant learning goals in a well-explained and clear manner, with much room for improvement; - Coherence and linkage between learning goals are inadequate, with much room for improvement.	- Learning goals are not clearly stated nor relevant, and well-supported justifications are lacking; - Coherence between learning goals is lacking which undermined the whole plan of learning.
Strategies to achieve learning goals	- Strategies are well-explained and supported with relevant theories; - Coherence with learning goals is clearly observed.	- Strategies are in general explained clearly, with the support of certain relevant theories; - Coherence with learning goals is observed, with slight room for improvement.	- Demonstrates attempts to design and explain strategies in a clear manner, with much room for improvement and need for more theoretical support; - Coherence with learning goals is inadequate.	- Strategies are not stated and explained clearly, nor well-supported by theories; - Lacks coherence with learning goals.

(*Continued*)

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Timeline for the learning process	- Well-planned, with specific and pragmatic stages of the learning process laid out; - Comprehensive and well-supported justifications on the design that help deepen readers' understanding of the timeline.	- Clear planning, with different stages designed pragmatically throughout the learning process; - Justifications of the design are in general clear, with slight room for complementing with more in-depth and well-supported explanations.	- Demonstrates attempts to design the timeline in specific and pragmatic manner, with much room for improvement to make it clearer and more structured; - Justifications of the design are acceptable, with much room for more in-depth and well-supported explanations.	- Lacks specifics on the timeline, and more pragmatic considerations on the design are needed; - Justifications of the design are lacking which undermined the validity and legitimacy of the timeline.
Assessment of learning goals achieved	- Clear and relevant assessment, supported and explained well with relevant theories.	- Clear and relevant assessment in general; with certain supporting theories used for explanations.	- Demonstrates attempts to design assessment and explain in details, but more theoretical support and relevance with learning goals are needed.	- Strategies are not stated and explained clearly, nor supported with theories; - Inadequate relevance with the learning goals.
Language and organisation	- Well-organized, with clear headings outlining different sections of content; - Language use is professional, with no observable mistakes.	- Clear organisations and sections are generally well-divided, with slight room of improvement; - Language use is generally professional, with minor mistakes observed.	- Demonstrates attempts to organise the content with different sections, with much room for improvement; - Language use is acceptable, with a number of obvious mistakes observed.	- Structure of the learning contract is chaotic. More well-organised sections are needed for clearer presentation; - Language use is below professional standard, with high frequency of mistakes observed.

Portfolio

A portfolio is a collection of a student's work which provides evidence showing how the student can meet the specified learning outcomes. A typical portfolio consists of work selected by the student, reasons for selecting these works and self-reflection on the learning process. A portfolio reflects students' developmental process; thus, the student or teacher does not only assess the product, but also the learning process in which the student engages during the given period. Portfolio is an assessment method that monitors the growth and development of student learning.

Structure of Portfolio Assessment

Unlike most assessments, portfolio assessment can contain many different forms of assessments, as it is a collection of a student's work. A portfolio assessment is sometimes followed by an oral assessment or presentation.

There are three types of assessment portfolios

- Documentation Portfolio is used to highlight the development and improvement of student learning during a given period of time. It often contains a range of artefacts from brainstormed lists to rough drafts to finished products;
- Process Portfolio is similar to a documentation portfolio, in which it contains all the evidences required to prove the learning outcomes in the given time, in addition, it integrates reflection and higher-order cognitive activities. It emphasizes metacognitive functioning and encourages students to become active participants in understanding their own learning. Process portfolio often contains documentation of reflection such as learning logs, journals and diaries;
- Product Portfolio is a portfolio demonstrating a student's best work. This type of portfolio is typically used for the interview. It is more of a summative assessment and typically does not include students' reflections on the learning process.

	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
Y	Take time to provide feedback	
Y	Suitable for a large class	
Y	Can use technology	
	Passive	
Y	Active	
Y	Process-Oriented Method	
Y	Product-Oriented Method	
P = Possibly Y =Yes		

Advantages of Portfolio

1 Portfolio is an assessment method that gives students the opportunity to be responsible for their own learning. Students often develop proud ownership of their work.

2 Self-reflection in each step allows students to improve as they see themselves progressing over time at the different stages.
3 Portfolio is an authentic assessment method, it involves meaningful work and often has personal relevance.
4 It promotes diversity of assessment methods.
5 It motivates through the visibility of the final portfolio.
6 It promotes creativity, individuality and uniqueness in the assessment of learning.
7 It assesses all levels of Bloom's taxonomy.
8 It shifts teachers' focus from comparative ranking to improving understanding via feedback.
9 Learning should not be all about the end result, portfolio is one of those assessment methods which allows students to demonstrate more than the end result – a process-oriented method.
10 High validity.

Disadvantages of Portfolio

1 Portfolio is a very time-consuming assessment method in terms of planning, preparing, correcting and providing feedback.
2 Clear instructions and guidelines must be given to students, as students often take portfolios solely as a collection of their work with no justification of reasoning and reflective statements. A sample or defined portfolio size should also be given.
3 Plagiarism can occur.
4 It is a subjective assessment method and teachers sometimes find it difficult to assess, as it is difficult to ensure reliability.
5 Students may overspend their time on the presentation of the portfolio, and not on the actual content. Tutors and peer assessors may also place too much focus on the aesthetic aspects of the portfolio and overlook the meaningful ideas behind the topic.
6 As portfolio is a process-oriented assessment approach, for maximum benefits, it should span across a number of semesters. However, it is unusual for students to have the same teacher over a number of semesters, and without that continuity, it is difficult for teachers to assess.

How to Design a Good Portfolio Assessment

1 Ensure the students know what the objectives of the portfolio assessment are.
2 An exemplar and defined portfolio size should be provided.
3 Provide students the time period, location, guidelines, requirements and assessment criteria. Students should also be aware of who is going to assess them – teacher, tutor, peers and/or self? And if peer- and/or self-assessment are employed, decide if the weightings would be the same as the teacher's assessment.
4 Prepare a structured marking sheet for all assessors, so all assessors are familiar with the assessment criteria.
5 Feedback design should be included in the assessment design (Table 4.5 shows a sample marking rubric to assess students' portfolio for field trip study.).

Portfolio – Marking Rubrics

Table 4.5 Marking rubric to assess students' portfolios for field trip study

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Selection of artefacts	- a wide variety of artefacts are included in the portfolio; - the artefacts are closely related to the field trip experience and the course outcomes.	- plenty of artefacts are included in the portfolio though some may be redundant; - the artefacts are mostly related to the field trip experience and the course outcomes.	- some artefacts are included in the portfolio; the variety of artefacts could be significantly enhanced; - some artefacts are related to the field trip experience and the course outcomes, others are tangential.	- insufficient artefacts are included; - artefacts are not related to the fieldtrip experience or course outcomes.
Demonstration and transfer of knowledge	- demonstrates the student's comprehensive and sophisticated understanding of knowledge and skills; shows strong evidence of knowledge transfer in this field trip.	- demonstrates the student's understanding of knowledge and skills; with some evidence of knowledge transfer in this field trip.	- demonstrates the student's limited understanding of knowledge and skills; the ability of knowledge transfer in this field trip is questionable.	- shows poor understanding of knowledge and skills; with no evidence of knowledge transfer in this field trip.

(*Continued*)

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Reflection on learning	- demonstrates in-depth reflection which goes beyond simple description of events; includes the students' critical appraisal of self, others, and course-related concepts in relation to this field trip.	- provides evidence of reflection; includes the students' appraisal of self, others, and/or course related concepts in relation to this field trip – though sometimes the appraisal is unclear and lacks criticality.	- shows some level of depth but most appears descriptive; limited appraisal of self, others, and/or course-related concepts in relation to this field trip.	- is a mere description of events and appears superficial.
Organisation and language	- the portfolio is very well organised and clear; various parts are labelled and connected to a general catalogue/navigation; - language use is professional, free from errors.	- the portfolio is in general organised and clear; various parts are labelled and connected to a general catalogue/navigation but are not always clear. Sometimes it is not easy to locate an item; - language use is appropriate with minor errors.	- the portfolio is readable but somewhat confusing due to lack of or unclear labels or catalogue; most of the time it takes time to locate an item; - language needs improvement as there are apparent errors.	- the portfolio is unorganised and confusing; difficult to locate artefacts; - language use is highly problematic with errors.

Poster

Poster assessment is one of the many ways of presenting the content and findings on a topic to an audience or a group of audiences through condensed information, often including pictures and graphs. It is often used to assess student learning in group research projects. Peer, self and tutor assessments can be used as part of the grading process.

Structure of Posters

Poster assessment usually involves students researching a topic and presenting their findings on a poster. Although question and answer sessions are uncommon, students are sometimes requested to stand by their posters to explain their findings. Poster assessments are expected to be brief and attractive. Online platforms (such as Miro, InVision, Concept board) allow posters to be presented digitally so they can be assessed and commented by many assessors and peers at different times.

A good poster is usually expected to have the following two characteristics:

- Good contents;
- Good and clear visuals.

	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
	Take time to provide feedback	
Y	Suitable for a large class	
Y	Can use technology	
	Passive	
Y	Active	
	Process-Oriented Method	
Y	Product-Oriented Method	
P = Possibly Y =Yes		

Advantages of Posters

1 Poster assessment encourages creativity.
2 Poster assessment is short and succinct. This would require the students to think distinctively and select the important elements that need to be on display. The ability to summarise is important.
3 Poster assessment can be assessed by peers at different times even without the presence of the creator.

Disadvantages of Posters

1 It is important for the assessors to state the assessment criteria explicitly; the students need to know if the content of the material is part of the criteria and/or the method of presenting the poster is part of the criteria. If students are to be assessed on different aspects (such as creativity skills or presentation skills on the posters) other than the content, they should be given the opportunity to learn and practice those aspects before being assessed.
2 Students may overspend their time on the visual effects, and not on the actual content. Tutors and peer assessors may also focus on the aesthetic aspects of the poster and overlook the meaningful ideas behind the topic.

How to Design a Good Poster Assessment?

1 Ensure the students know what the primary objective of the poster assessment is.
2 Let the students know if they are required to be around for poster explanation.
3 Students should have training on how to summarise and select the important parts to display in a poster.
4 Provide students the time period, location, guidelines, requirements and assessment criteria. Students should also be aware of who is going to assess them – teacher, tutor, peers and/or self? And if peer- and/or self-assessment are employed, decide if the weightings would be the same as the teacher's assessment.
5 Be specific with the assessment criteria, and prepare a structured marking sheet for all assessors so that all assessors are familiar with the assessment criteria.
6 Peer feedback is an effective way for students to receive prompt feedback in poster assessment (Table 4.6 shows a sample rubric assessing students' posters and is suitable for a student-faculty research partnership project (e.g. undergraduateresearch projects)).

Poster – Marking Rubrics

Table 4.6 This sample rubric assesses students' posters and is suitable for a student-faculty research partnership project (e.g. undergraduate research projects)

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Content	- captures important information about the research and is easy for the audience to understand; - demonstrates excellent understanding of the knowledge and the research project.	- captures important information about the research but needs further explanation or revision to engage the audience; - demonstrates understanding of the knowledge and the research project.	- captures some information about the research but is too general or incomplete; the audience may have difficulty understanding the research; - understanding of the knowledge and the research project appears to be limited.	- information presented is irrelevant to the research project, making it very difficult for the audience to understand; - understanding of the knowledge and the research project is insufficient.
Research quality	- the research presented is original, impactful and makes important contribution to the community.	- the research presented is original and makes some contribution to the community.	- the research presented is sound but may lack originality or significance.	- the research presented is flawed and does not contribute to the research community.
Visual appeal	- overall design is attractive, pleasing and creative; - excellent use of space, figures and colour to enhance appeal.	- most parts of the design is attractive, pleasing and creative; - adequate use of space, figures and colour to enhance appeal.	- the design is appropriate but could be more attractive and creative; - the use of space, figures and colour are sometimes problematic and has limited effect to enhance appeal.	- the design does not involve much effort and appears sloppy and unedited; - does not attempt to use space, figures and colour to enhance appeal, or the use is highly inappropriate.
Organisation and language	- information is very well organised and clear with headings and sub-headings; - language use is professional, free from errors.	- information is organised with headings and sub-headings; - language use is appropriate with minor errors.	- information is somewhat organised, but the headings and sub-headings are either missing or unclear; - language needs improvement as there are apparent errors.	- information appears scattered and unorganised; - language use is highly problematic with errors.

Presentation

Presentation is the process of showing and explaining the content of a topic to an audience or a group of audiences orally. It is often used to assess student learning in individual or group projects. In recent times, presentation is no longer just about oral presentation but also the visuals. Paper, white board or PowerPoint presentations are sample tools to aid the visual part of the presentation. Peer, community partners, industrial and academic supervisors can all be assessors, this would allow the collection of feedback from different stakeholders if the topic or presentation style generates subjective opinions or different views.

Students may be assessed in terms of content relation, knowledge grasp, presentation style, enthusiasm, and audience engagement. It is important that teachers provide clear criteria on what will be assessed for the presentation, so students can spend time focusing on the expected outcomes.

Structure of Presentation Assessment

Presentation assessment usually consists of a topic on which the student research, discusses and presents. Question and answer sessions usually follows the presentation. This measures the ability of students to respond critically, think under pressure and manage discussions. Sometimes it is in this part of the presentation that a student shows his or her in-depth knowledge of the topic and presentation skills. A good presentation is usually expected to consist of

- An introduction, rationale and aims
- Literature on which the study is based upon
- Major points and ideas explained and summarized
- Results/Related points/Issues/or others depending on the topic
- Conclusion – future work
- The presentation should be carried out within the time limit

	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
Y	Take time to provide feedback	
	Suitable for a large class	
Y	Can use technology	
	Passive	
Y	Active	
Y	Process-Oriented Method	
Y	Product-Oriented Method	
P = Possibly Y =Yes @		

Advantages of Presentation Assessment

1 Humans tend to remember actions and behaviours easier than words through reading, writing and listening. Observing other peers presenting will help students reflect on oneself and avoid repeating others' mistakes.

2 Presentation is an effective method for improving students' public speaking skills which can be very useful for their careers.
3 Presentation is often part of the overall assessment for a project. It allows students to provide a detailed summary of the project to the assessors, allowing the assessors to ask questions and probe more deeply into students' report.
4 Presentation provides an effective way to assess competencies such as presentation, communication, information literacy, organisation, creativity and critical thinking competencies.

Disadvantages of Presentation Assessment

1 Presentation does not take a long time to mark but it does take a relative amount of time for the students to present during contact hours, usually making it not the best method for a large class.
2 It is important for the assessors to state the assessment criteria explicitly. The students need to know if the content of the material is part of the criteria and/or the method of presenting is part of the criteria. If students are to be assessed on different aspects other than the content, they should be given the opportunity to learn about and practice those aspects before being assessed.
3 If the skills needed in a live presentation are not part of the intended learning outcomes, the presentation may not be a suitable assessment method.
4 Students may overspend their time on flashy animation, software and other high-tech sound effects, and not on the actual knowledge contents. Tutors and peer assessors may place too much focus on the aesthetic aspects of students' presentations and overlook the meaningful ideas behind the topic.
5 Presentations may not be very inclusive. Students with special learning needs or physically impairment may struggle.

How to Design an Effective Presentation Assessment?

1 Ensure the students know what the primary objective of the presentation assessment is.
2 Tell them how long the presentation will be, the strictness of the timekeeping and whether there is time for Q&A.
3 Let students know the assessment criteria and marking scheme, the students should also be aware of who is going to assess them, for example, tutor, peers and/or self? And if peers or themselves are going to assess, would the weightings be the same as the tutor's assessment?
4 Prepare a structured marking sheet for all assessors, so all assessors are familiar with the assessment criteria.
5 Feedback is very important for an effective presentation assessment to support student's development and is best to be provided immediately after the presentation (Table 4.7 shows a sample rubric for a presentation assessment used in a capstone project. This is the rubrics used by the peers to assess the student's performance.).

Poster – Marking Rubrics

Table 4.7 A sample rubric for a presentation assessment used in a capstone project

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Knowledge demonstration	- Shows a thorough knowledge of the topic. Effectively uses assessor questions to further demonstrate understanding of the topic. The presenter establishes his credibility through good reasoning and supporting; - Central message is compelling (precisely stated and strongly supported.) Message is appropriate for purpose, context, and audience.	- Shows a working knowledge of the topic. Able to satisfactorily answer assessor questions and provided additional information upon request. The presenter is generally seen credible; - Central message is generally clear. Message is generally appropriate for purpose, context, and audience;	- Shows basic knowledge of the topic. Able to address assessor questions by repeating parts of the presentation. The presenter's credibility is questionable; - Central message is understandable. Message sometimes does not align with purpose, and does not show consistent appropriateness for context and/or audience.	- Shows little or no knowledge of the topic. Unable to answer assessor questions or comment further on any part of the presentation. The presenter's credibility is very weak; - Central message is weak or unfocused. Message is not appropriate for purpose, context, and audience.
Delivery	- Speaks in good volume, inflection and pace that effectively maintain audience interest; - Delivery is very natural and motivating; seldom looks at the notes; - Language/expression is very clear and proficient throughout the presentation.	- In general speaks in appropriate volume, inflection and pace to maintain audience interest; - Delivery is generally natural; sometimes refers to the notes; - Language/expression is in general clear and proficient.	- Volume and pace need to be adjusted in several scenarios; more inflection needed; - Delivery is understandable but at times appears rehearsed; constantly refers to the notes; - Language/expression is understandable but lacks clarity or proficiency.	- Consistently speaks too loud or too low; pace is too fast or too low; no inflection shown in presentation which disengages audience. - Delivery appears rehearsed and unnatural; keeps reading from notes; - Language/expression can hardly be understood.

Nonverbal communication	- Appears very comfortable and confident throughout the presentation; - Consistently engages with the audience and maintains good eye contact; - Effectively uses body language.	- Appears fairly confident though sometimes there are small signs of speaking anxiety; - Generally engages with the audience and makes good eye contact at certain points; - body language is in general appropriate.	- There are clear signs of speaking anxiety but the speaker manages to control them; - Attempts to engage with the audience and makes eye contact; - Rarely uses body language; some body language may not appear appropriate.	- Appears very uncomfortable, unconfident and insecure, to the extent that the anxiety impedes the presentation; - Faces away from the audience and refuses to make eye contact; - does not use body language or body language appears very inappropriate.
Organisation	- Presentation is structured in logical order with effective and natural transitions between main ideas, which makes the content more cohesive.	- Most parts of the presentation is structured in logical order with adequate transitions between main ideas. The content is in general cohesive.	- There are some efforts done in structuring the presentation logically and making necessary transitions, though the effect is not entirely satisfactory. The content is complete but not very cohesive.	- The presentation is not logical, and lacks transition between main ideas. The content is incomplete and unorganised.

(*Continued*)

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Critical thinking	- Information is taken from sources with sophisticated interpretation; - Viewpoints of others are questioned reasonably and thoroughly; - The speaker is capable of forming his/her own viewpoints based on solid analysis and reflection.	- Information is taken from sources with interpretation; - Viewpoints of others are questioned though sometimes not in a reasonable or thorough way; - The speaker is able to form his/her own viewpoints, though sometimes needs guidance.	- Some information is taken from sources with interpretation; - Viewpoints of others are taken with little questioning; - The speaker has difficulty in forming his/her own viewpoints and always needs extra guidance.	- Information is taken directly from sources; - Viewpoints of others are taken as facts without any questioning; - The speaker is not able to form his/her own viewpoints.
Creativity	- The idea presented is novel, interesting, and unique, which shows ample originality from the presenter; - Creatively uses a variety of interesting tools/aids (visual or non-visual) in the presentation production.	- The idea presented is in general fresh and interesting, showing some level of originality from the presenter; - Uses some creative and interesting tools/aids in production.	- The idea presented is complete, and some points are novel; - Attempts to use some creative tools/aids in production, though the effect is not entirely satisfactory.	- The idea presented is stale and repetitive, which does not add to the current knowledge of this subject/ experience; - The production appears routine and sloppy

Reflective Journal

A reflective journal is a means of recording ideas, personal thoughts and experiences, as well as reflections and insights a student gained during the process of learning in a course. Reflective journal requires the students to think more deeply, to challenge their old ideas with new incoming information, to synthesize the course materials they have learnt into their personal thoughts and philosophy, and also to integrate it into their daily experiences and future actions. The benefits of the reflective learning process usually accumulate over a period of time, during which the students usually show a series of developmental changes, personal growth and changes in perspectives.

Structure of Reflective Journal

Basically, there are two standard forms of reflective journals:

- Structured journals: students are given a specific question, target, or set of guidelines to base their writings on.
- Unstructured journals/free-form journals: students are required to record thoughts and feeling with minimal direction.

However, both structured journals and unstructured journals should contain some of the following aspects:

- To discuss or argue a journal paper/report/an issue from a private standpoint or from various perspectives.
- To synthesize or analyse some materials or resources for building up an argument.
- To examine a particular perspective or issue with prior or new knowledge.
- To generate questions and think deeply after examining relevant resources
- To describe personal experiences and integrate them into the issues in concern.
- To express freely for or against specific questions given by teachers/peers/supervisors.
- To develop the ability and critical attitude to integrate learning into real-world experiences.

Although reflective journals are often presented in a written format, they do not necessarily have to be in written format. Some reflective journals can be audio and video recorded or presented online (Chan & Wong, 2021, more in Chapter 5). The presentation format of reflective journals is flexible. Reflective journal is suggested to be applicable to a broad range of disciplines.

	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
Y	Take time to provide feedback	
Y	Suitable for a large class	
Y	Can use technology	
	Passive learning	
Y	Active learning	
Y	Process-Oriented Method	
Y	Product-Oriented Method	
P = Possibly Y =Yes		

Advantages of Reflective Journal

1 Active learning – The process of reflection encourages students to take the initiative to be active, self-driven; allows the individual learner to explore concepts and ideas in relation to their thoughts and feelings from different perspectives. Students can become independent thinkers through practice and enable themselves to solve various problems on their own.
2 Understanding the progress of students – Reflective journals provide good opportunities for teachers to gain a better understanding of how their students think and feel about the course, and the learning progress of their students throughout the course, which will eventually help them enhance their students' learning.
3 Improving writing skills – Writing reflective journals can involve students in a new form of writing which they may not have had a chance to experience in the past. This exposure can bring out improvement in students' writing skills.
4 Freely expressing personal views and criticising of one-self – Reflective journal assignments provide the platform for students to freely express what they think and feel about the course and their learning process, and also promote their expression of ideas, personal experiences and opinions. This is an ideal place for students who are generally not willing to speak up in the class and tutorials to express themselves.
5 Enhance critical thinking and creativity – The process of self-reflection enhances the development of critical thinking skills among students when they relate their knowledge to real-world issues. It can help students develop their creativity and a questioning attitude towards different issues and problems.

Disadvantages of Reflective Journal

1 Difficult for objective marking – Due to the subjective nature of reflective assignments, it is rather difficult for assessors to be objective and have consistent grading. Different assessors may have quite a large discrepancy in their judgment of the same reflective piece.

2 Time consuming for grading – The context of reflective writing can often be very diverse, and involves a wide range of concepts, issues, and perspectives. As a result, it often takes considerable amount of time for assessors to read and grade students' works.
3 Confidentiality – As students have to disclose their personal and private views and information in their reflection, some of them may be unwilling to honestly disclose their perspectives. They may be concerned that what they write will significantly affect the grade they receive.
4 Clear guidelines needed – Many students may not be familiar with the reflective writing genre and may feel very lost when working on it for the first time. Teachers have to give clear guidelines to students about what should be included in the reflective journals, what can be learnt from writing it, as well as how they will be graded.

How to Design a Good Reflective Journal Assessment?

1 Consider the types of reflective journals that fit your course (if students are inexperienced with reflective journals, the structured form with specific questions and guidelines available should be more "student-friendly").
2 Make sure clear expectations and assessment criteria are given to the students. (e.g. What can students put in their journals? What is the definition of "reflection"? What is the approximate length for each journal entry?).
3 Try to make students understand the purpose and benefits of reflective journals at the very beginning.
4 Make sure that teachers have explained and discussed the policies concerning privacy and confidentiality of information with students.
5 Decide the regularity of journal entry (e.g. weekly, monthly).
6 Provide timely feedback to students (Table 4.8 shows a sample marking rubric to assess students' reflective journals on their service learning experience.).

Reflective Journal – Marking Rubrics

Table 4.8 A sample marking rubric to assess students' reflective journals on their service learning experience

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Knowledge application	- the reflection shows a very clear understanding and sophisticated application of course-related concepts/ knowledge in the service learning.	- in general, shows a sufficient understanding of course-related concepts/knowledge in service learning; the application of course-related knowledge in service learning is mostly appropriate.	- shows some level of understanding and application of course-related concepts/knowledge in the service learning; sometimes the understanding or application of knowledge appears to be inaccurate.	- cannot make connections between course-related concepts/ knowledge with service learning or demonstrates a poor understanding of course-related knowledge.
Making connections	- the reflection articulates multiple meaningful connections between this service learning experience and previous learning, life experience and/or future goals.	- articulates some connections between this service learning experience and previous learning, life experiences and/ or future goals; some of these connections are meaningful.	-attempts to make connections between this service learning experience and previous learning, life experiences and/or future goals, but the connections are vague.	- does not attempt to make connections between this service learning experience and previous learning, life experiences and/or future goals.

Analysis	- the reflection is in-depth, goes beyond simple description of events and includes the students' critical appraisal of self, others, service learning and course-related concepts.	- the reflection is in general thorough and not merely descriptive; includes the student's appraisal of self, others, service learning and/or course related concepts – though sometimes the appraisal is unclear and lacks criticality.	- the reflection shows some level of depth but most appears descriptive; limited appraisal of self, others, service learning and/or course-related concepts.	- is a mere description of events and appears superficial.
Civic engagement	- demonstrates a strong sense of responsibility to the community and expresses clear initiative to serve others and solve issues; shows ample awareness in the complexity of issues and their personal role within.	- demonstrates a sense of responsibility to the community and expresses some initiative to serve others and solve issues.	- demonstrates a limited sense of responsibility to the community and limited initiative to serve others and solve issues.	- does not demonstrate any sense of responsibility to the community or initiative to serve others and solve issues.
Clarity	- written in a very clear, expressive and well-organised manner. Language use is mature.	- written in a clear and well-organised manner though with some minor confusions. Language use is appropriate.	- writing is understandable with several confusions. Language use is mostly appropriate but with several apparent mistakes.	- writing lacks clarity and organisation and is difficult to understand. Language use is limited and/or filled with mistakes.

Short Answer Questions

Short-answer questions are open-ended questions that require students to respond with an answer. They are commonly used in examinations or quizzes to assess the basic knowledge and understanding (low cognitive levels) of a topic, prefacing more in-depth assessment questions. It can be used in a field-trip for students to answer quick questions.

Structure of Short Answer Questions

Short-answer questions do not have a generic structure. Questions may require students to respond by completing the sentence, supplying the missing word, writing short descriptive or qualitative answers, explain diagrams etc. The answer is usually short, from one word to a few lines. Students may often answer in bullet form.

	Take time to set	Characteristics
	Take time to answer	
	Take time to correct	
	Take time to provide feedback	
Y	Suitable for large class	
Y	Can use technology	
Y	Passive	
	Active	
	Process Oriented Method	
Y	Product Oriented Method	
P = Possibly Y =Yes		

Example:

- MHz measures the _____ of the computer.
- List the different types of plastic surgery procedures.
- Choose the kind of flowers that you can find in the national park from the list below.

Advantages of Short Answer Questions

1 Short-answer questions are relatively fast to mark and can be marked by different assessors.
2 Short-answer questions are also relatively easy to set compared to other assessment methods.
3 Short-answer questions can be used as part of a formative and summative assessment, as the structure of short answer questions are very similar to examination questions, students are more familiar with the format and feel less anxious.
4 Unlike MCQs, students must supply an answer and no options are provided for guessing.

Disadvantages of Short Answer Questions

1 Short-answer questions are only suitable for questions that can be answered with short responses. It is crucial for the assessor to be very clear about the type of answers expected when setting the questions, because short-answer questions are often open-ended questions, so students are free to answer any way they choose. Short-answer questions can lead to difficulties in grading if the question is not worded carefully.
2 Short-answer questions are typically used for assessing knowledge only, students may often memorize answers for these questions by rote learning. If assessors wish to use short-answer questions to assess deeper learning, careful attention (and frequent practice) on appropriate question design is required.
3 Accuracy of assessment may be influenced by handwriting/spelling skills.
4 There can be time management issues when answering short-answer questions.

How to Design a Good Short Answer Question?

1 Design short answer items that can assess the learning objectives appropriately.
2 Express the questions with clear wordings and language that are appropriate to the student population.
3 Ensure there is at least one correct answer for each question.
4 Ensure that the item clearly specifies how the question should be answered (e.g. Student should answer it briefly and concisely using a single word or short phrase? Are students given a specific number of blanks to answer the question?)
5 Consider whether the positioning of the item promote efficient scoring.
6 Write the instructions clearly so as to specify the desired response.
7 Set the questions explicitly and precisely.
8 Direct questions are better than those which require completing the sentences.
9 For numerical answers, let the students know if they will receive marks for showing partial work (process-based) or only the results (product-based), also indicate the importance of the units.
10 Let the students know what your marking style is like. For example, is bullet point format acceptable? Or do students have to respond in full sentence format?
11 Prepare a structured marking sheet; allocate marks or partial marks for acceptable answer(s).
12 Be prepared to accept other equally acceptable answers, some of which you may not have predicted (Table 4.9 shows a marking rubric to assess students' short answer questions related to their capstone project. Short answer questions tend to be short, and have more precise answers, thus, it is possible for each question to list out all the possible answers/point).

Short Answer Questions – Marking Rubrics

Table 4.9 A rubric to assess students' short answer questions related to their capstone project

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Completeness	- the responses are complete and all parts/ questions are addressed to the fullest extent.	- the responses are complete; however not every part/ question is addressed to the fullest extent.	- the responses are mostly complete; only some parts/ questions are fully addressed.	- the responses are not complete; many parts/ questions are not fully addressed or even addressed.
Master of knowledge	- the answers are accurate, detailed, and show the students' advanced understandings of the academic knowledge.	- the answers are mostly accurate, detailed and show the students' adequate understandings of the academic knowledge; - the answers support the student's satisfactory learning outcomes.	- the answers should be more accurate and detailed; answers show the students' limited understandings of the academic knowledge; - the answers to some extent support the student's learning outcomes.	- the answers are not accurate or detailed, which show a lack of understanding of the academic knowledge; - the answers reveal the student's unsatisfactory learning outcomes.
Knowledge transfer	- demonstrates effective application of academic knowledge to the project.	- demonstrates some level of application of academic knowledge to the project.	- demonstrates insufficient application of academic knowledge to the project.	- there is a lack of application of academic knowledge to the project.
Writing mechanics	- language use is mature, free from errors.	- language use is appropriate with minor errors.	- improvement is needed as there are apparent errors.	- language use is problematic with errors.

Written report

Reports are documents that present detailed interpretation and content, and critical analysis of the results of an experiment, investigation and project on a particular topic. A report usually contains different sections, such as introduction, methods, results, discussion and conclusion. There may be a specific

writing style and format for the report that vary depending on the discipline and activity. There are various types of reports across different subjects, such as analytical reports or business proposal in the business field, and practical laboratory reports in some science subjects. Report writing is an important skill for students, as it is often used in all work fields.

Structure of Written Report

	Take time to set	Characteristics
Y	Take time to answer	
Y	Take time to correct	
Y	Take time to provide feedback	
Y	Suitable for large class	
Y	Can use technology	
Y	Passive	
	Active	
Y	Process Oriented Method	
Y	Product Oriented Method	
P = Possibly Y =Yes		

In general, a report is made up of different sections with specific information.

- Cover page: Provide basic information such as course details, title of the report and personal information.
- Abstract: A brief summary (sometimes known as executive summary) of the report which is approximately 100–150 words. It includes the aim of the report, a brief research methodology used, summary of key findings, a short discussion, and conclusion.
- Introduction: Contains the objective, rationale and background information of the research/experiment/project. It may cover some aspects such as the relevant theoretical perspectives, a brief review on previous and existing knowledge, limitations of previous work, hypotheses and expected outcomes.
- Method: Outlines the approaches and procedures that were used to carry out the research/experiment/project. This section also lists the specific materials and equipment used for the experiment/research. In some scientific reports, instructions of the experiments and some labelled diagrams are included to give more information of the practical work.
- Results: Describes the findings and observations. Data can be presented in tables, graphs and even through calculation. In some scientific reports, the results section also shows if the hypothesis of a theory is supported or not. This section is a summary of the key findings. However, it would not cover any explanation of the findings and observations.
- Discussion: Provides the interpretations and evaluations of the findings and observations; analyses the findings in relation to the theoretical background

and objective of the study; comments on any unexpected outcomes; acknowledges any problems and limitations with possible reasons; gives suggestions for future studies.

- Conclusion: It can be either a separate section or integrated with the discussion (always at the end of the discussion). It is usually made up of a few sentences summarising the key findings relating to the aim of the research/ project.
- Appendix: Provides extra supporting information in relation to the report, such as diagrams, charts, sample questionnaire, calculations, and raw data (e.g. raw SPSS data).
- References: A list of all the sources referred to in the report. It is presented in alphabetical order with full bibliographical details of the sources used in the report.

Advantages of Report Writing

1 Learn techniques in data collection, analysis and reporting.
2 Develop judgments about experiment procedures, results and limitations.
3 Enhance writing skills in presenting practical work.
4 Assess different levels of cognitive knowledge.

Disadvantages of Report Writing

1 Time-consuming assessment approach for both students and teachers.

How to Design a Good Report Writing Assessment?

1 If you require students to follow a specific report format, it must be clearly specified. Different disciplines may have their own style of format.
2 Remind students to be aware of the use of technical terms and symbols. People from other disciplines may not be familiar with those terms. Therefore, students are required to provide definitions of the technical terms and symbols.
3 If English grammar and language are part of the marking criteria, this must be clearly specified.
4 Provide some guidelines on reporting numbers, units of measurement and scientific diagrams for students.
5 Provide a report checklist for students. There are different sections in a report format, and each section has its specific content in it. A checklist would help students include all the essential content in each section.
6 Make sure students understand the assessment criteria. Students have to be aware what aspects are going to be assessed, such as the writing style, analysis, diagrams and referencing.
7 Timely feedback is important for improvements. Feedback mechanisms such as mid-term report or pre-writing meetings will help to guide students before the final writing report is due (Table 4.10 shows a sample rubric to assess students' written reports on their problem-based learning in a group project.).

Written Report – Marking Rubrics

Table 4.10 A sample rubric to assess students' written reports on their problem-based learning in a group project.

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Problem solving	- clearly defines the problem and articulates the problem goals; - the problem solution is based on sufficient evidence, clear and appropriate; - demonstrates an in-depth and sophisticated understanding of issues involved in problem solving.	- the problem and problem goals are in general well-defined; - the problem solution is supported by evidence and in general feasible; - demonstrates an understanding of issues involved in problem solving.	- the problem and problem goals need modification but are in general defined; - the problem solution is not entirely relevant to the problem or amply supported by evidence; - demonstrates a limited understanding of issues involved in problem solving.	- the problem and problem goals are unclear; - the problem solution does not address the problem and is not based on evidence; - does not demonstrate any understanding of issues involved in problem solving, or the understanding is biased.
Knowledge learning and application	- effectively and appropriately applies course-related knowledge/skills in problem solving; - demonstrates strong multiple learning outcomes including but not limited to course knowledge enhancement and generic skills development.	- applies course-related knowledge/skills in problem solving; - demonstrates learning outcomes such as course knowledge enhancement and/or generic skills development.	- applies limited course-related knowledge/skills in problem solving; some may not be entirely accurate; - demonstrates some learning outcomes such as course knowledge enhancement and/or generic skills development but needs clearer articulation.	- does not apply course-related knowledge/skills in problem solving; - learning outcomes achieved are not clear or very limited.

(*Continued*)

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Teamwork	- the report presents clear roles for each member according to their strengths and documents the collaborative working procedure clearly; - the workload is distributed equally.	- the report presents clear roles for each member and documents the collaborative working procedure; - the workload is generally distributed equally though some members may contribute more.	- the report presents the roles of some members and documents part of the working procedure which is not necessarily collaborative; - the workload could be distributed more equally.	- the report does not reveal the roles of each member or document their working procedure; or members' work reported is not collaborative and shows conflicts; - the workload is not distributed equally.
Organisation and language	- very clear, logical and well-structured; easy for readers to follow; - figures and tables (or other visual aids) are used in a professional manner and effectively support the content; - language use is mature, free from errors.	- generally clear, logical and well-structured, though some points may need further explanation; - most figures and tables (or other visual aids) are appropriately used; - language use is appropriate with minor errors.	- generally understandable but needs much further work on the report's logic and structure; - figure and tables (or other visual aids) are used but some may appear redundant or unclear; - language use needs some improvement as there are apparent errors.	- difficult to understand due to a lack of clarity, logic and organisation in the report; - figures and tables (or other visual aids) do not serve to support the content; - language use is problematic with errors.

4.3.2 Experiential Learning Activities

In this section, common experiential learning activities conducted in universities around the world (i.e.) Capstone project, community service, field trips, internship, student exchange programmes, entrepreneurship education programmes, student organisations and residential education are presented together with the common assessment approaches employed as short cases.

Capstone Project

In Reinventing Undergraduate Education (Boyer Commission, 1998), capstone experience is defined as an authentic project or activity organized based on all the knowledge and competencies that a student has gained and developed during the course of his/her studies. The purpose of a capstone project is to apply what has been learned in the programme, culminating the experience, the knowledge and the competencies gained into one evidencable assessment. At the University of Hong Kong (Chan et al, 2017), capstone experience may be in the form of a research project, research paper, thesis, portfolio or internship. Capstone experience broadens student's perspective and allows students to take responsibility and ownership for their learning. Students can explore knowledge beyond their studies and learn to work individually or collaboratively with or without faculty supervision. These experiences are great assessment grounds in providing the faculty or department information on the strengths and weaknesses of their curricula because students' performance is being observed and assessed holistically, and it provides a true method of direct evidence of student learning. Capstone experience can be a data-rich vehicle for programme assessment, to evaluate how well students have achieved the programme outcomes. According to Hartmann (1992), students' research paper is "an unwieldy basis for external assessment, they provide the most direct and most unfiltered picture of students' capabilities" (p. 128).

Frameworks for a Capstone Experience (from Rowles et al., 2004)

Capstone experiences can be organized with respect to these four frameworks that target the capstone programme's needs. Although, one framework is generally adopted, other frameworks may also be incorporated or acknowledged where appropriate.

1 **Mountaintop**: Interdisciplinary or multidisciplinary capstone experience, in which students from two or more disciplines work collaboratively on the same project. Such capstone projects mirror the real-world setting, whereby students are required to work with people from diverse background.
2 **Magnet:** Discipline-specific capstone experience which requires students to draw upon concepts learnt from various courses in the discipline. Such capstone projects act as a "magnet" that pulls together knowledge in a summative manner, requiring students to produce a final product to demonstrate their learning.

3 **Mandate:** Students enrol in capstone courses that are organized to meet the standards and requirements set out by external industry or professional bodies (e.g. ASCE, AACSB, ABET).
4 **Mirror:** Capstone courses which requires students to reflect on their experiences and metacognitive skills in relation to programme objectives and goals. Through reflective writing, students may describe what they have learnt and how their assignments and experiences have helped them achieve each of the expected learning outcomes.

List of competencies that can be developed

Aside from discipline-specific knowledge and skills, well-designed capstone projects can promote development of the following competencies and attitudes:

1 Interpersonal
2 Communication
3 Teamwork
4 Problem solving
5 Self-understanding
6 Critical thinking
7 Information literacy

This is by no means an exhaustive list of competencies.

Common Assessment Methods for Capstone Project

Report

A report is a systematic and well-organized document that defines and analyses certain topic or problem related to the project. Depending on the type of project, students may be asked to prepare a report (e.g. a laboratory report for a science project, a technical report for a design project). For some courses, students may be required to submit an interim progress report before the final report as a form of formative assessment.

Case Example: Marketing Research course at the University of Hong Kong (The University of Hong Kong HKU Business School, 2021)

In an undergraduate Marketing Research course (MKTG3502) offered by the Faculty of Business & Economics at the University of Hong Kong, students form groups to conduct a marketing research project that weights 40% of the final. In the form of a marketing research report, students are required to demonstrate their ability to identify a marketing related topic/question, design research, perform research with a software taught

in class, and present findings with a marketing plan. Students are assessed with a rubric based on the quality of the executive summary, appropriateness of data analysis procedures, quality of the recommendations, and the effectiveness of both presentation and writing. The rubrics is provided to the students for clear guidelines

Oral Presentation

During an oral presentation, students demonstrate not only their understanding and knowledge of their project outcomes, but also their ability to effectively communicate their ideas to a group of audience. It is also common for students' presentation to be followed by a discussion session where their supervisor and/or peers ask questions on the presented materials.

Case Example: Introduction to Embedded Systems course at the Hong Kong University of Science and Technology (Hong Kong University of Science and Technology, 2021)

The "Introduction to Embedded Systems" course (ELEC3300) offered by the Department of Electronic & Computer Engineering at the Hong Kong University of Science and Technology is an elective, which gives students the flexibility to work in pairs on a project of their choice. Based on a rubric, students' oral presentation on their final project demonstration is assessed on clarity, creativity, originality and level of understanding.

Portfolio

A portfolio is a documentation of a student's learning achievements. A portfolio for project work may include students' major pieces of work, feedback from their supervisor, and their own reflective analysis. A complete and well-organized portfolio can show a student's development and learning progress throughout the project.

Case Example: E-portfolio for Final Year Project at the Hong Kong Polytechnic University (Chan & Yan, 2013)

The Hong Kong Polytechnic University adopted e-portfolio as a formative assessment method for the final year project of engineering students. A rubric is developed to assess students on their choice of artefacts, reflection/critique, use of multimedia and a variety of resources, overall layout and quality of writing.

Peer Assessment

Peer assessment allows students to assess each other's performance in the project. It can be extremely valuable in helping students to learn from each other, and to become responsible for their own learning.

Case Example: Final Year Plant Design Project at Imperial College London (Imperial College London, 2016)

The Final Year Plant Design Project offered by the Department of Chemical Engineering at Imperial College London requires students to work in teams of approximately ten students to design a process plant. Students are expected to submit periodic peer assessment online, so that they can reflect on their individual contributions and teamwork skills, gain a better understanding of how their team works, and actively consider whether anything can be done to improve team effectiveness.

Project Audits and Reviews

Project audits refer to the evaluation of team progress. As a standard practice in various industries, it is designed to offer formative feedback for teams to reach project goals under qualified and systematic project governance in order to enhance project works. Project audits include three stages (Audit 1: Concept of Operations; Audit 2: Mid-term Project Audit and Audit 3: Final Project Audit). It begins by setting up the project agenda and scope (Audit 1). In the second stage (Audit 2), the process is guided and evaluated according to the project scope. Finally, the audit process is finalised, and is prepared to move to another stage of the project (Audit 3).

Professional Reflection

Professional reflection refers to the activity adding to one's progressing professional engineering development. It is designed to allow people to reflect on their learning experience and regard this as a launching point for the new stage of their career. To present professional reflection, we can adopt one of the following six options, including (1) Application Package; (2) Professional Reflection/Portfolio; (3) Technical Leadership Program; (4) Engineering Logbook; (5) Continuing Professional Development and (6) Professional Accreditation.

Case Example: Capstone Systems Engineering Project at Australian National University (Australian National University, 2021)

The Capstone Project offered by ENGN4221 Systems Engineering Project at Australian National University requires students to complete relevant

assessment activities that help practice evaluating the process of projects. The assessment activities include three project audits and reviews (conducted in Week 3, 6 and 10) that weight 75% of the Capstone Project and a professional reflection that weights 25% of the project. Activities done in each audit week are the same. On Monday of each audit week, each project team is required to submit a "Landing Page" and the project review on Wattle. The deadline of submission is on Friday of the same week. During the tutorials in the audit week, students present their project team progress in open-format. On the Wednesday after each audit week (Week 4, 7 and 11), the feedback on the project review will be available via Wattle. During the tutorials in these weeks, a progress indicator is given for each audit progress and the project teams plan their actions according to the feedback received. For the final audit grade, students are assessed based on the project audit grade, team member contribution weighting and project review weighting.

Apart from project audits and reviews, students are also required to prepare for the professional reflection. In the tutorials of Week 7, apart from planning further actions based on feedback received from the mid-term project audit, students need to finalise the option of the professional reflection from the six introduced. After students showcase their projects through presenting their showcase posters and submit the final team and project reviews, they need to submit the professional reflection on Monday in Week 13. For the professional reflection, students are assessed according to the following three criteria:

- Professional approach and attitude
- Evidence of learning
- Maturity of reflection

Community Service

> Service-learning holds up a MIRROR for us to see ourselves, a MICROSCOPE for us to examine our society, and BINOCULARS for us to see what lies ahead. – Mark Cooper

Through engaging students in improving and solving social problems, community service promotes both intellectual and civic engagements by relating academic learning to real-world problems and needs. Community service projects can vary in terms of destination (i.e. overseas or local), nature of work and credit allocation. They can be initiated by external organisations, higher education institutions or the students themselves.

Some people may argue that assessing service learning may diminish the meaning of participation (Chan, 2012a; Chan & Yeung, 2021); however, assessing students is important in order for them to be aware of and reflect on their

learning experience, and the trick is to assess the meaningful parts of the experience for enhancing student learning using appropriate assessment approaches, and not just assess for the purpose of quality assurance. Assessment also provides "evidence for faculties to support their belief that service-learning has a rightful place in the program" (Strouse, 2003, p. 78). This is important particularly as there have been many well-cited research literatures indicating that experiential community service-learning projects allow different holistic competencies to develop (Astin & Sax, 1998; Chan, 2012b; Kuh, 1995).

List of competencies that can be developed

Through engagement in community service, students will be able to develop the following holistic competencies:

1 Interpersonal
2 Communication
3 Teamwork
4 Problem solving
5 Self-understanding and resilience
6 Leadership
7 Empathy and respect (Weah et al., 2000)
8 Adaptability
9 Cultural Sensitivity and Global Citizenship (Weah et al., 2000)

This is by no means an exhaustive list of competencies.

Common Assessment Methods for Community Service

Reflective Journal

Reflective journal helps students make sense of their community service experience by providing them the opportunity to critically evaluate and recap their understanding from what they have seen and done. Reflective journal tends to be more effective when students are given prompts to guide them towards evaluation and reflection instead of giving mere description. It can be a daily/weekly record of student's reflection.

Case Example: Community Service-Learning Projects at the University of South Australia (University of South Australia, 2016)

The Community Service-Learning Project (EDUC4186) is an elective for all students at the University of South Australia, in which students work in multi-disciplinary teams to help community organisations solve

real problems based on their needs. Students are required to submit a 1,000-word reflective journal as part of their assessment on their use of knowledge and application of skills taught in their degree, as well as the relevance of the community service experience to their future career.

Direct Observation

Direct observation is conducted by teachers and/or supervisors on students' performance during the community service project; it is based on observers' judgments of students' ability in relation to the intended learning outcomes.

Case Example: Sichuan Reconstruction Community Service Project organized by the Faculty of Engineering at the University of Hong Kong (Chan, 2015)

In addition to other assessments, such as presentation, daily reflective journal and summative report, the daily performance of students participating in the Sichuan Reconstruction Community Service Project organized by the Faculty of Engineering at the University of Hong Kong was assessed by both professional assessors in Sichuan and team supervisors. Team supervisors recorded their observation of students' daily performance (e.g. students' initiative to learn and contributions to the project), while professional assessors in Sichuan recorded their observation of students' team building activities (e.g. assessment of how well students participated in and cooperated with group members during the service project) (Chan, 2012b). There were a number of critiques of using direct observation as an assessment, including the logistics of collecting the observation records from team supervisors and professional assessors, and the personal relationships between the assessors and the students who may became closed as they were both engaged in the community service activities. In Chapter 9, we will demonstrate using technology to facilitate many logistics challenges and in Chapter 7, ethics in assessment will be discussed.

Oral Presentation

Community service-learning experience is usually authentic and meaningful. Presentation allows teachers to not only evaluate students' applied knowledge and competencies via the community service-learning experience but also their enthusiasm towards the experience. This form of sharing with teachers and peers

may help fellow students relive and reflect on their own experiences. Students may be assessed in terms of content relation, knowledge grasp, presentation style, enthusiasm, and audience engagement. It is important that teachers provide clear criteria on what are to be assessed for oral presentation so students spend the time focusing on the expected outcomes.

Case Example: Engineering Projects in Community Service (EPICS) Program (Purdue University, 2020)

Real Design, real people and real impact are the slogans of Engineering Projects in Community Service (EPICS) Program at Purdue University. EPICS was founded in 1995, it features a unique programme where undergraduates work in teams to design and build engineering-related systems to solve real problems for the local community or education organisations. EPICS fulfils the mutual needs of students to have authentic learning experience and of the local community to access the expertise that would normally be costly.

EPICS targets a range of learning outcomes as reflected in its rich assessment methods for students' projects and students themselves. Among all these outcomes, communication skills are attached with great importance and oral presentation has been adopted as a major means to evaluate and promote students' communication. For example, in the "Design Review Presentation", students are expected to present their project designs to external design reviewers (e.g., EPICS advisors; industry experts), explaining clearly and concisely how the project was designed, how it could be implemented in the future, and the potential risks involved. Oral presentation mimics the real design reviews every engineer practice regularly in the industry, and thus, apart from enhancing students' communication skills, it provides very valuable opportunities for students to demonstrate their projects, to understand real engineering practices, and to establish connections with stakeholders. Similarly, oral presentation has also been used as a method to assess students' communication with their project partners. Alongside some casual meetings and feedback, oral presentation effectively reflects students' oral competency to negotiate the needs from their partners in a formal way. A rubric on communication skills, alongside the other learning outcomes (e.g., teamwork, critical thinking), has also been developed to guide students in their oral presentations.

For these reasons, oral presentation not only serves as a powerful tool to assess students' holistic competencies – including but not limited to communication skills, application of knowledge and networking skills, but also to drive student learning under a more communicative context which is highly valued in today' world.

Essay

An essay can be used to help students increase their awareness of social issues, by integrating academic enquiry with practical experience gained through the community service experience. For example, students may be asked to identify a problem or an issue related to their community service experience, to critically analyse it by applying relevant theories that they have learnt from their disciplinary studies, and to reflect on how their contributions impact on society as a whole through their experience.

Case Example: Social Innovation and Global Citizenship Program at the University of Hong Kong (The University of Hong Kong Faculty of Social Sciences, 2021)

Students who participate in the Social Innovation and Global Citizenship Internship at the University of Hong Kong are required to write an integrated essay that covers: (1) background information on the community organisation, (2) identification of service gap and making recommendations/suggestions to the organisation, (3) description and evaluation of the service tasks in the service project, and (4) directions/recommendations for future service projects for sustainable development. This type of essay requires students to plan and research on the area to which the service will be provided. The students would also require to think beyond what is needed as they will need to consider the clients, the environments and the community in which the service will be served.

Blog

A blog is a form of online journal where one can publish a series of entries with photos and videos (Farmer et al., 2008) on their community service experience, anytime and anywhere. Students often encounter different scenarios during their community service experience. They can use the blog to capture these moments, and provide a personal account of it. It helps them to reflect and learn from it.

Case Example: Transformative Business Immersion in Developing Economics course at the University of Hong Kong (The University of Hong Kong Business School, 2021)

The Transformative Business Immersion in Developing Economics course, offered by the Business School at the University of Hong Kong, brings

students on a three-week field trip to the rural Philippines where they work with small local businesses. Through interviews with the owners and employees of the local businesses, students need to identify potential areas of improvement and to offer suggestions to help the businesses accomplish their financial goals. During their time abroad, students write a blog post once a week to share their homestay experiences, their relationship and project progress with the small businesses, and a personal reflection. Upon the completion of the trip, students are also required to produce a video showcasing their experiences during their trip.

Field Trips

Educational fieldtrips are used to augment classroom learning by taking students outside of the classroom to participate in exploratory activities at a featured location. There are many potential destinations, such as institutions like museums, community centres, non-governmental organisations (NGOs) and workplaces, or places like historical, geological or biologically diverse sites. As a type of experiential learning, fieldtrips can be engaging and enjoyable while also exposing students to specific aspects of the real world and allowing them to gain unique first-hand experiences. Fieldtrips can vary in length, from a few hours to a day, sometimes it may require overnight stays, or even weeks if the destination is in a different country.

According to DeWitt and Storksdieck (2008), learning outcomes of fieldtrips are influenced by a number of factors, including the structure of the trip, the quality of the preparation and follow-up activities, the novelty of the destination, the interests of students, the social contexts involved, and the experiences of students during the trip. Learning can be cognitive (e.g. facts and concepts) and affective (e.g. sparking interest or changing attitudes towards a certain topic).

List of competencies that can be developed

Aside from discipline-specific knowledge and skills, well-designed fieldtrips can promote development of the following competencies and attitudes.

1 Self-understanding
2 Teamwork
3 Observational competencies
4 Critical thinking and the ability to synthesize information
5 Curiosity and awareness

This is by no means an exhaustive list of competencies.

Common Assessment Methods for Field Trips

Quiz

Quizzes can objectively assess knowledge relevant to or gained from fieldtrips. A quiz often includes questions with definite answers (e.g. multiple-choice questions) or short answer questions (e.g. fill-in-the-blanks, short descriptive answers). The questions are often directly relevant to what students are observing and experiencing and students often need to fill in the answers during the fieldtrip. Thus, it usually takes a short amount of time to complete and mark.

Case Example: BIOL3628 Marine Ornithology at Dalhousie University (Dalhousie University, 2015)

The Marine Ornithology course, offered by the Biology Department of Dalhousie University, includes a one-day fieldtrip to seabird breeding colonies in the Maritimes. Students are given a field quiz during the trip on seabird identification.

Worksheet

Similar to quizzes, worksheets assess knowledge related to fieldtrips and often include short answer questions. Students may be given the whole day to complete the questions, often finding the answers as they proceed with the different areas or segments of the trip. Students may sometimes have the option to discuss and compare their answers with their peers.

Case Example: Understanding Climate Change at the University of Hong Kong (Faculty of Science, 2016)

In the Understanding Climate Change common core course offered by the Faculty of Science at the University of Hong Kong, students participate in a half-day fieldtrip to Lai Chi Chong, a local site of geological significance. The aim of the fieldtrip is to have students see how geological records are used to discover environments and climates from the past. During the trip, students are given a worksheet to complete by the end of the day, including questions related to specific parts of the site and their significance.

(Porter et al., 2012)

Field Notebook

Students may be required to take observation notes during a fieldtrip, which can then be collected for marking and assessment. The notes may be qualitative and/or quantitative. A student may jot down notes, take photos and record videos of their experiences and thoughts during the trip. Field notebook assesses student's process, at the same time checking their understanding. The field notebook is often used together in a bigger report.

Case Example: Montreal – Its Urban, Cultural & Social Practices at the Western University of Ontario (The University of Western Ontario, 2015)

In the course 'Field Methods and Practices: Montreal – Its Urban, Cultural & Social Practices', offered by the University of Western Ontario, students travel to Montreal to explore the city's geography and develop their research and observational skills. During the six-day trip, students are required to record their observations and experiences in a notebook, additional assignments are also included, which they hand in at the end of the trip for assessment.

Written Report

The contents of a report may include descriptions, interpretations, and analyses of a topic or investigation from the fieldtrip. Reports usually include an introduction, procedures, results, discussion and conclusion. While they can also vary in length, reports assess different levels of cognitive knowledge and critical thinking, such as requiring students to evaluate what they have observed during the trip and prompting them to apply theories that they have learned in class to their experiences. The written report works in complement with the field notebook assessment, where the field notebook allows assessing of process while the written report assesses results.

Case Example: Building Maintenance at the Universiti Tun Hussein Onn Malaysia (UTHM) (Interviewed with the teacher)

In the Building Maintenance course at UTHM, students participate in a one-day field trip and visit a commercial or government building with a variety of mechanical, electrical and intelligence systems. Working in groups, they are assigned specific sections of the building on which they would write their technical report. The report includes a literature review, critical evaluations of the problem, and discussions on their suggestions for improvement projects.

Oral Presentation

Oral presentation is a way for students to show and explain the contents of their fieldtrip and its specific topics to a group of audience. These presentations may include visuals and PowerPoint slides as aids, and there is often a questions-and-answers session after the presentation.

Case Example: EBIO327 Biological Diversity Lab at Rice University (Rice University, 2015)

The lecture/ laboratory course, Biological Diversity Lab, is offered at Rice University and involves a weekend-long fieldtrip to the Big Thicket National Preserve. Students work in groups and conduct their self-designed surveys for sampling taxonomic groups in the preserve. They are then required to submit a final report and give an oral presentation to the class, describing the results of their survey.

Poster Presentation

A poster presentation requires students to produce concise written content and clear visuals (e.g. photographs taken during the fieldtrip) on a poster for display. The assessment should also consider the layout of the poster, present the information in a logical manner, all while making it creative and eye-catching. Students may sometimes give a supplementary oral explanation of their poster.

Case Example: GLY330 Geomorphology at Northern Kentucky University (Northern Kentucky University, n.d.)

The Geomorphology course at the Northern Kentucky University includes several weekend field trips when students travel to Carter Caves, the Red River Gorge and up to three additional locations, to collect and analyse data on the landforms and their processes of formation. Students are required to take notes and photographs at every trip and complete a group research project that includes the analysis of collected data, results and conclusions. Each project is shared to the class in a poster presentation.

Reflective Journals

When writing reflective journals, students record their thoughts and ideas on their experience and what they have gained or learned from the trip. Writing reflections allows them to express their feelings regarding their experiences while exercising their self-awareness and critical thinking.

Case Example: FScN2001 Healthy Foods, Healthy Lives – A Food System Approach to Cooking at the University of Minnesota (University of Minnesota, 2016)

In the 'Healthy Foods, Healthy Lives – A Food System Approach to Cooking', offered at the University of Minnesota, students participate in two fieldtrips to learn about food production and food culture. They are required to write a personal reflection for each of the trips, and submit it via a blogsite.

Internship

Internship provides students with the opportunity to gain valuable work experience in the field they have chosen and to enhance their prospects for employment before graduation. Although many universities organize internship for their students as part of their undergraduate programme, students may also participate in an internship on a voluntary basis during their semester vacation to gain work experience. Depending on the decision of the individual faculty or department in the university, an internship could be credit bearing or non-credit bearing.

The nature or type of work allocated and the availability of supervision at the workplace are some of the factors influencing students' learning through internship experience (Luk & Chan, 2020; Martin, 1997). As the experience of each student intern may vary significantly from each other, the learning outcomes of an internship may be quite different (Crebert et al., 2004; Hu et al., 2009). In the study conducted by the author's postdoctoral researcher, Lillian (Luk & Chan, 2021) on internship, she addressed the research question – what are students' perceived learning outcomes from their internship experience?

In her study, she revealed four categories of learning outcomes (as below), which form a provisional framework illustrating diversity in students' perceived learning outcomes of internship.

a Knowledge
b Academic-related generic competencies
c Non-technical generic competencies
d Technical competencies

She found that some learning outcomes (i.e. *general learning outcomes*) such as disciplinary knowledge and problem-solving skills, are more likely to be developed than others (i.e. *specific learning outcomes*) such as research skills and professional judgement. The specific learning outcomes are unique to each individual student, and these outcomes may not be consistent for each student even if the students were in an identical role and company. While the idea of constructive alignment (Biggs, 1996) in course design suggests that learning outcomes

should be specified at the beginning of the course design, specific learning outcomes may be unknown in internship and (maybe) other experiential learning courses due to the nature of the activities.

List of competencies that can be developed

Through engaging in an internship, students will be able to develop the following competencies in a real-world workplace environment:

1 Interpersonal
2 Communication
3 Writing
4 Problem solving
5 Self-management
6 Adaptability
7 Time management
8 Work attitude and ethics

This is by no means an exhaustive list of competencies.

Common Assessment Methods for Internship

Survey

A survey consists of rating scales and open-ended questions, which enables the evaluation of students' performance in an internship in both the students' and the employer's perspectives. It can be considered as a fairly objective assessment method.

Case Example: Social Innovation and Global Citizenship Programme at the University of Hong Kong (The University of Hong Kong Faculty of Social Sciences, 2021)

The Social Innovation and Global Citizenship Programme, offered by the Faculty of Social Sciences at the University of Hong Kong incorporates a performance appraisal form to assess the student intern's performance. The performance appraisal form includes rating scales for the employer to rate the student intern's level of adaptability, communication skills, work attitude, independence, motivation and self-management skills.

Reflective Journal

Reflective journal is a written series of students' ideas, personal thoughts, experiences, reflections, and insights gained during and after their internship. It provides a record of students' internship activities.

Case Example: One-year Undergraduate Internship at Aston Business School (Aston University, n.d.)

Business undergraduates in Aston Business School who participate in a one-year internship are required to keep a reflective journal on their progress, using PebblePad (http://www.pebblepad.co.uk). They are expected to submit monthly entries, which cover (1) their roles and responsibilities, (2) learning outcomes, (3) reflection on any problems faced and actions taken to resolve the problem, and (4) an outline of objectives for the next month.

Report

A report is a systematic and well-organized document that provides a descriptive account of an internship experience. It usually contains different sections, such as company background, job achievements, and learning outcomes.

Case Example: Industrial Attachment Programme at the National University of Singapore (National University of Singapore, n.d.)

The Industrial Attachment Programme offered by the Faculty of Engineering at the National University of Singapore is a 12-credit course designed to expose students to day-to-day work environment of a professional engineer, so as to instil the students the right kind of work attitudes and professionalism through interactions and networking with practitioners. Student interns are required to submit an internship report on the internship progress every six weeks during the period of attachment, resulting in a total of five reports. In the reports, students are expected to provide a detailed description on the type of work performed, relationship with their supervisors and colleagues, and their perceived learning outcomes.

Portfolio

A portfolio is a documentation of a student's past achievements. In the context of an internship, the portfolio often includes students' major pieces of work, feedbacks from their supervisor/industrial tutor, and their own reflective analysis. A complete and well-organized portfolio can show a student's development and learning progress in the internship.

Case Example: The MyPortfolio system used by the University of Auckland's Teacher Education Program (San Jose, 2017)

The MyPortfolio system, hosted by Mahara, was adopted by the University of Auckland's Teacher Education Programme to support student teachers' learning during their practicum. Student teachers specialising in early childhood education are encouraged to document different aspects of their practicum experience (e.g. a journal entry on a parent/mentor meeting session, photos of the classroom learning environment, a video recording of children learning in class) in the e-portfolio. They are expected to critically review their practice based on the documentations and try to come up with ideas to enrich the overall teaching and learning experience.

Oral Presentation

An oral presentation is rarely a standalone assessment and it is often used to accompany other assessments such as a report, a portfolio, etc. During an oral presentation, students demonstrate not only their understanding and knowledge of their internship/placement outcomes, but also their ability to effectively communicate their ideas to a group of audience. It is also common that the student's presentation is followed by a discussion section, where the academic and/or work supervisor may ask questions and the student needs to give sensible response and defend any presented materials.

Case Example: The Real-World Internships and Projects at Queensland University of Technology (QUT, n.d)

The Real-World Internships and Projects (AMB310) course is an elective for business students in their final year of study at Queensland University of Technology. Students enrolled in the course are required to complete a minimum of 120 hours of work placement during a 13-week semester. The poster presentation, as an assessment task, was introduced in year 2009, to replace a written report and individual class presentation. Based on the goals and activities set in their internship plan, students are expected to give an oral presentation to provide a review of the internship, a reflection on their learning experiences and development of capabilities. The posters are assessed based on the following criteria:

- Poster presentation (visual appeal, clear layout, professional presentation, meeting size guidelines)
- Poster content (identifying student and organisation, using reflective writing frameworks to structure content)
- Audience engagement (presentation, discussion, behaviours)

Logbook

Logbook contains a record or proof of a student's learning accomplishments, learning experience, and learning outcomes. Students can include their logbooks in their CV for future job-seeking purposes.

Case Example: Industrial Attachment Program at the National University of Singapore

The Faculty of Engineering at the National University of Singapore requires engineering students to complete a student log sheet during their Industrial Attachment Program. This log sheet is updated weekly and has to be attached to the student's final report at the end of the internship. Basically, the log sheet records the number of weeks, work(s) performed by the student, and the supervisor's/ industrial's signature and comments for verification.

Learning Contract

Learning contract is drawn between students and their supervisor/industrial tutor to develop learning plans. Learning objectives, strategies, and expected learning outcomes are negotiated, with the student's competencies and the supervisor's/ industrial tutor's expectations taken into account.

Case Example: Credit-bearing Internships at the University of Kentucky (the University of Kentucky n.d.)

The University of Kentucky requires students to submit a learning contract in order to receive credits for their participation in the internship programmes offered by different academic departments. To complete the learning contract, students need to identify an academic advisor in their academic department, with whom they discuss learning objectives and assignments. Students are also required to state specific time and dates on which they plan to have periodical meetings with the academic advisor to provide updates on the internship progress.

Exchange Programme

Student exchange programme provides the opportunity for students to spend at least a semester in an overseas university, allowing them to enrol in academic courses offered by the host university and to gain an understanding of the

language and culture of the host country (Sowa, 2002). The way students are assessed during an exchange programme is often dependent on the course(s) selected. Most of the time, students are involved in in-course assessments, rather than an assessment of their learning from the exchange experience as a whole. In Luo & Chan (2022)'s systematic review paper, many qualitative methods to assess intercultural competency are revealed.

List of competencies that can be developed

Through engagement in an exchange programme, students will be able to develop the following competencies:

1 Interpersonal Communication
2 Self-management
3 Adaptability
4 Intercultural competencies
5 Language

This is by no means an exhaustive list of competencies.

Common Assessment Methods for Exchange Programme

E-portfolio

An e-portfolio is an electronic documentation of students' work to showcase their learning. In the context of an overseas exchange programme, an e-portfolio may include a reflection on their participation in different cultural activities in the host country, an identification of real-life problems/ issues in the host country and suggestions on how to deal with them, etc. A complete and well-organized portfolio can show a student's development and learning progress during the exchange programme.

Case Example: Exchange Experience Assessment offered by the Department of Information Systems at City University of Hong Kong (City University of Hong Kong, 2016)

The Exchange Experience Assessment (IS4935) offered by the Department of Information Systems at City University of Hong Kong gives students the opportunity to spend two semesters in an overseas university. Students are required to prepare an e-portfolio which includes a two-minute video demonstrating their understanding of cultural differences and their overall evaluation of the exchange experience. Students are also encouraged to visit their peer's e-portfolio page to give comments.

Entrepreneurship Education

Universities are increasingly interested in entrepreneurship education programmes due to the demand and interest in new job opportunities and development of a knowledge-based economy. Entrepreneurship education, in the form of programmes, events or services regarding entrepreneurship, encourages students to pursue entrepreneurship-related knowledge and abilities, and also to create start-ups. However, the learning outcomes of entrepreneurship education programmes are unclear, causing challenges in pedagogical design. Ms. Hannah Wong, my postgraduate student, has conducted a systematic review on entrepreneurship education and developed a framework for learning outcomes of entrepreneurship education within higher education (Wong & Chan, 2021). While students are believed to gain a range of achievements such as knowledge, mindsets and careers in self-employment, development of competencies is a vital component within entrepreneurship education programmes.

List of competencies that can be developed

Through enrolling in an entrepreneurship education programme, students will be able to develop the following competencies:

1 Creativity
2 Interpersonal competencies
3 Problem solving
4 Financial management competencies
5 Teamwork
6 Opportunity identification skills
7 Negotiation capacity
8 Marketing skills

This is by no means an exhaustive list of competencies.

Common Assessment Methods for Entrepreneurship Education

Authentic Assessment and Creative Assessment

Authentic assessment and creative assessment are two assessment methods adopted in the setting of entrepreneurship education. Authentic assessment includes assessments on authentic practices, which in entrepreneurship education is often related to practical and experiential assessments in an actual workplace. Creative assessment includes assessments that are creative and innovative, as entrepreneurship education seeks to align student learning with its innovative, flexible and creative nature.

Case Example: Entrepreneurship education within higher education settings, from Wong and Chan (under review)

Universities often adopt authentic assessment in entrepreneurship education programmes, in which students are demonstrating what they have learnt in a mock or authentic workplace environment. This may include a range of assessments, for example assessing students' business ideas, business plans, proposals, reports and presentations, where assessments may be conducted in front of peers, teaching staff or entrepreneurial professionals. These assessments may be interrelated, where reports or presentations could be founded upon business ideas and plans, and it is believed that students are gaining authentic understandings and skills for future careers.

Entrepreneurship education programmes are also looking to creative assessments, in which assessments could be gamified or incorporating new approaches such as visual logbooks or performances. Often designed in a mix of formative and summative form, creative assessment is believed to allow students to gain and track development of skills and competencies through the process of assessment, particularly developing innovation and creativity skills, while enjoying and engaging in the assessment methods.

Student Organisations

Student Organisations include every student groups, clubs, societies, unions and associations that are led by students. In each tertiary institution, students can link up with like-minded people to initiate an organisation and pursue their interest. The university usually provides a certain amount of financial support to each legitimated student organisation for its development. There are a variety of student organisations, with some examples below:

1. Student administrative bodies: Student Union, Union Council.
2. Religious-based organisations: Christian Association, Buddhist Studies Society.
3. Academic-based organisations: Engineering Society, Law Association.
4. Interest-driven organisations (sport/culture): Music Club, Dance Club.
5. Community-based organisations: Social Service Group and the Greenwoods.

Student Organisations hold co-curricular or extra-curricular activities that enrich and enhance students' campus life. Both the executive organising committees of each student organisation and their members can gain various learning experiences from organising or joining the activities.

One of my doctorate students, Ms. Katherine KW Lee, has focused her research on exploring the key experiences that can enhance – or even diminish – the sense of leadership self-efficacy among university students. Self-efficacy, which is comparable to self-confidence (McCormick, 2001) and is defined as an individual's own assessment of their ability to perform and succeed at a task.

The students in Katherine's study identified various experiential opportunities throughout both their secondary and tertiary education that they considered to be important to enhancing leadership development, including internships and work placements, community service activities, and extra-curricular research or competition projects. One particular experience that was notable among students in Hong Kong was joining an executive committee in university, such as for a student-led club or faculty society. Students talked about how this stood out to them as not only a unique experience, but also one that was intense and hands-on as they would be responsible for organising events and functioning with virtually no faculty or teacher supervision. The high demands of a typical executive committee also meant that members had to rely on one another to solve problems and quickly learn for themselves how to negotiate with corporate sponsors and communicate with industry representatives. Overall, this type of experience provided students with a multitude of valuable opportunities, including an environment in which they can observe and learn from their fellow members, authentic and meaningful ways to learn and develop their leadership skills as well as other competencies, exposure to different situations and people outside of a typical university classroom, and the simple yet important opportunity to put their skills into practice, allowing them to build up experience and confidence as they reflect on both their strengths and areas for improvement.

List of competencies that can be developed

Within the student organisations, apart from learning a new field or hobby, student clubs, societies and organisations enable students to plan, coordinate, market for, get sponsorship and evaluate activities and projects, which develop many competencies.

As executive committees of the student organisation, students will be able to develop the following competencies:

1 Leadership
2 Creativity
3 Organising
4 Financial management
5 Social and communication
6 Teamwork
7 Critical thinking
8 Cooperation
9 Problem solving

As member/participants of the student organisation, students will be able to develop the following competencies:

1 Social and communication skills
2 Personal growth

This is by no means an exclusive list of competencies.

Common Assessment Methods for Student Organisations

Oral Presentation

An oral presentation involves introducing and explaining certain details of the student organisation's activities to a group of audience. Often, the content and presentation skills are assessed.

Case Example: Campaigning for the Candidacy of Executive Committee Elections at the University of Hong Kong

At the University of Hong Kong, every proposed cabinet who would like to become the executive committee of a student organisation needs to go through a campaign. During the campaign, the proposed cabinet needs to present two main details to the previous executive committees: (1) define and clarify the roles and duties of each proposed committee member; (2) introduce the proposed year plan, which includes the aims and objectives, content, potential target group and contingency plan for each proposed activity.

Members of the past executive committees then take turn in asking questions to challenge the proposed cabinet, by pushing the proposed cabinet to demonstrate their leadership skills and team working skills. They also assess and comment on the proposed year plan regarding its feasibility. The aim of the whole campaign is to assess, prepare and equip the proposed cabinet to become the incoming executive.

Residential Education

Residential education programmes involve co-curricular and curricular activities for students to enhance their learning experiences and achieve their learning outcomes in their university living environment. Universities believe that students are able to develop various academic, social, values-related, and attitudinal outcomes via residential education programmes. These areas encompass the learning outcomes required for students to be highly successful and global citizens. There are formal programmes like high table dinners, community development and regular floor meetings, as well as informal activities like different cultural events, competitions and sports teams. The types of residential activities can be very diverse across halls/ colleges.

List of competencies that can be developed

Participating in formal programme can help develop the following competencies:

1 Respect
2 Critical thinking

Participating in informal programme (cultural and sports teams) can help develop the following competencies:

1 Social and Communication competencies
2 Leadership and cooperation competencies
3 Health and wellness literacy (safety, exercise)

Additional competencies are developed as students leave home and live by themselves.

1 Self-management competencies (self-discipline)
2 Problem solving
3 Financial Management competencies
4 Adaptability

This is by no means an exhaustive list of competencies.

Common Assessment Methods for Residential Education

Peer- and Self-assessment

Peer- and self-assessment are two formative assessment methods that are widely used in the setting of residential education. Peer-assessment allows students to provide and get feedback from others; while self-assessment allows students to reflect on their own performance and to see if they meet their standards or expectations.

Case Example: Residential Education at the University of Hong Kong

At the University of Hong Kong, each floor and every cultural teams and sport teams of all residential halls have a Mid-year evaluation (MYE) at the end of the first semester and an End-year evaluation (EYE) at the end of the second semester. Both MYE and EYE are face-to-face evaluation including self- and peer-assessment. In a floor/team evaluation meeting, members take turns commenting on themselves and others. The

evaluation is conducted in two parts: individual evaluation (assessing one's holistic competency development) and post evaluation (assessing one's performance based on their roles – e.g. floor-chairperson, team captain, and team member). It is believed that by doing MYE and EYE, students can understand themselves more, learn from each other, and eventually improve themselves.

Conclusions

Assessing experiential learning activities may need to involve more than one assessment approaches. In the above examples, various innovative assessment pedagogies were employed. It is encouraged to look through the entirety of these examples via the references provided. In Chapter 8, some best practice cases have been selected to provide a detailed account of the assessment used (Tables 4.11–4.15).

Questions to Ponder

- Is it actually ethical to assess students' experiential learning experience? Or their reflection?
- How can we measure students' value added?
- How can we assess students' reflection?
- How can we provide constructive and appropriate feedback?
- What do we know about students' prior experience?
- How do we know what have students learnt from their prior experience?
- How do we know if students have improved in their holistic competencies?

Personal Reflection

One of the rationales for me to write this book is because I have come across a number of service-learning centres which employ reflective writings to assess the service-learning activities. Students are usually required to submit a 500 words reflective essay as the assessment. In general, such assessment aligns well with their learning, particularly if students were giving some guidelines and practices. However, issues arise in terms of who will assess the reflective essays, and will the students be given feedback? Often, the answers are "No" and "No". The assessment is purely a bureaucratic piece of evidence. And the worst part is that students also realise that, they condemn the assessment and query the cause, the assessment process and the service-learning experience suddenly become meaningless. This is sad.

Appendix for Chapter 4

Marking Rubrics – Log Books

Table 4.11 A marking rubric to assess students' log books of their laboratory work

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Content	- entries in the log book are clear and detailed; - important information such as dates, activity, experiment procedures are well-documented; - easy to read and any relevant personnel could understand and continue to use it.	- most entries in the log book are clear, some may benefit from more details; - important information such as dates, activity, experiment procedures is documented; - generally easy to read only with several minor confusions; relevant personnel may find it to some extent useful.	- most entries in the log book should be clearer and more detailed but entries are in general understandable; - some important information such as dates, activity, experiment procedures are missed; - basically, understandable but with some major confusions; relevant personnel may find some parts of it to some extent useful.	- most entries in the log book are difficult to understand, or too general/incomplete. - important information such as dates, activity, experiment procedures are missed; - little to no referential value to others.
Organisation and language	- very well organised; different parts are labelled and connected to a general catalogue/navigation; - language use is professional, free from errors.	- in general, organised; different parts are labelled and connected to a general catalogue/navigation but are not always clear; not always easy to locate an item; - language use is appropriate but with minor errors.	- could be better organised due to a lack of or unclear labels or catalogue; - language needs improvement as there are apparent errors.	- very unorganised and confusing; difficult to locate items; - language use is highly problematic with errors.
Regularity	- frequent and regular entries which demonstrate a consistent work record.	- in general, the entries are regular, there are missing entries on certain dates.	- the entries appear to be random.	- there are inadequate entries in the log book which cannot demonstrate the students' work record.

Marking Rubrics – Peer Assessment (more information can be found https://www.have.hku.hk/teamwork)

Table 4.12 A marking rubric for students to peer assess their team members' contribution to a group work project

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Leadership	- consistently plays a leading role in this group to achieve excellent collaborative outcomes of this project; - encourages and effectively supports other members' work.	- able to play a leading role in this group, whereas some decisions may not maximise collaborative outcomes of this project; - encourages and supports other members' work when needed.	- does not play a leading role in this group but sometimes offers good advice that helps achieve collaborative outcomes of this project; - encourages and supports other members' work when required.	- plays a minimal role in the group; not able to lead, encourage or support others.
Responsibility	- always punctual for group meetings and finishes work duties on time or ahead of time with high quality - always stays focused on the task	- mostly punctual for group meetings and finisesh work duties on time; - in general stays focused on the task.	- sometimes late for group meetings and needs to be reminded to finish work duties; - has difficulty to stay focused on the task.	- always late or absent for group meetings; constantly needs to be reminded to finish work; refuses to finish work or always finishes work after the deadline; - cannot stay focused on the task.

(*Continued*)

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Collaboration	- consistently listens, interacts and discusses with team members with respect; maintains a close relationship with other team members; - provides constructive feedback and is open to other members' feedback.	- most of the time listens, interacts and discusses with team members with respect; - provides feedback to others and is mostly open to other members' feedback.	- sometimes listens, interacts and discusses with team members; sometimes may lack respect to others; - seldom provides feedback; generally open to other members' feedback but tends to refuse negative ones.	- rarely listens, interacts and discusses with team members; is disrespectful to other members; maintains a tangential relationship with other team members; - does not provide feedback or provides biased feedback that does not contribute to the project; refuses to receive or act on other members' feedback.
Contribution	- contributes significantly to the group project; consistently raises important and valuable points that lead to excellent project outcomes.	- makes some important contribution to the group project; actively raises points to improve the project though sometimes the suggestions are not feasible or useful.	- attempts to contribute to the group project; sometimes raises points to improve the project.	- does not make contribution to the group project or the contribution is minimal; - never raises points to improve the project or sometimes even obstructs the work procedure.

Marking Rubrics – Self-Assessment

Table 4.13 A marking rubric for students to self-assess their engagement in residential education

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Participation	- actively and frequently participate in a variety of residential activities.	- participate in a few residential activities that I am interested in.	- only participate in residential activities when I am required to do so or when I can get incentives.	- never participate in residential activities as they are not relevant to me.
Contribution	- always take initiative to organise events to enrich peers' residential life; - consider it my responsibility to make our residential hall a better community.	- from time to time help organise events to enrich peers' residential life; - I think it is part of my responsibility to make our residential hall a better community.	- seldom help organise events to enrich peers' residential life unless I am required to do so; - It is not my responsibility to make our residential hall a better community but I am willing to contribute when I am asked to.	- never organise or help organise events to enrich peers' residential life; - It is not my responsibility to make our residential hall a better community and there is no reason to contribute even when I am asked to.
Relationship	- actively socialise with other students in the residential hall regardless of their backgrounds or cultures; - have a close friendship with plenty of hall members from different cultures and backgrounds.	- I socialise with other students in the residential hall, and am learning to communicate with people outside my cultural group; - I have a good friendship with some hall members and try to befriend others.	- do not usually take initiative to socialise with other students in the hall but am willing to communicate with them if they approach me first; - tend to make friends with certain groups of students.	- do not socialise with other students in the hall and show no interest to communicate with others even if they approach me first; - have few friends in the hall.

(*Continued*)

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Respect and consideration	- respect other hall members' living styles, cultures and interest; - very considerate of other hall members' needs and feelings and make sure my behaviour does not harm others; - always act in calm and rational ways to solve conflicts, and help others to mediate conflicts. I strive to build a positive and welcoming residential atmosphere.	- most of the time I am respectful to other hall members' living styles, cultures and interest; - most of the time I am considerate of other hall members' needs and feelings and am learning to make sure my behaviour does not harm others; - try to avoid arguments and conflicts with hall members and help others mediate conflicts when needed. I agree that a positive and welcoming residential atmosphere is important.	- make reasonable efforts to respect other hall members' living styles, cultures and interest; - try to be considerate of other hall members' needs and feelings although sometimes my behaviours could have hurt others; - usually need help from others to solve my conflicts with other hall members and rarely help others mediate conflicts. I am not particularly enthusiastic about the residential atmosphere.	- often quite disrespectful to other hall members' living styles, cultures and interest; - pay little to no attention to other hall members' needs and feelings; my behaviours always cause unpleasant feelings of others; - tend to involve in conflicts quite frequently with other hall members and do not compromise even with others' mediation. I do not care about the residential atmosphere I am living in.

Marking Rubrics – Video Project Assessment

Table 4.14 A marking rubric to assess students' video projects (in groups) made for an entrepreneurship competition

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Video quality	- the video is complete, well edited and has smooth transition from scene to scene.	- the video is complete, edited and has transition from scene to scene; some scenes appear somewhat choppy.	- the video is complete but lacks good editing and transition from scene to scene.	- the video is incomplete and fragmented.
Video enhancements	- makes good use of high-quality figures, audio, subtitles and/or other enhancements.	- makes use of figures, audio, subtitles and/or other enhancements.	- the use of figures, audio, subtitles and/or other enhancements achieves very limited effects.	- shows no attempt to use figures, audio, subtitles and/or other enhancements; or the use is highly problematic.
Entrepreneurial awareness	- demonstrates sophisticated entrepreneurial thinking skills, and utilises the skills well to present business ideas; - the presented entrepreneurial project is focused, clear, and feasible, which could generate both good economic benefits and social effects.	- demonstrates entrepreneurial thinking skills, and utilises the skills to present business ideas; - the presented entrepreneurial project is in general focused, clear, and feasible. With further improvement, the project could generate both good economic benefits and social effects.	- demonstrates limited entrepreneurial thinking skills, and the business idea is not well supported by entrepreneurial concepts/ approaches; - the presented project needs to be more focused and clearer. Some parts need to be modified for it to be feasible. Economic and social benefits of the project is questionable.	- does not demonstrate any entrepreneurial thinking in the project; - the presented project is not focused, clear, nor feasible. The project does not generate economic or social impacts.
Group work	- demonstrates effective teamwork where every member assumes equal work responsibility based on their strengths; the project could not have been possible without teamwork.	- demonstrates collaborative work among students where members assume equal work responsibility.	- the project is a result of collaborative teamwork but some members contribute much more than others.	- the project is not a result of collaborative teamwork and relies heavily on one or two members.

Marking Rubrics – Worksheets

Table 4.15 A marking rubric for students to assess students' worksheets during their internship

Marking Rubrics Grading Descriptors	*Excellent*	*Proficient*	*Average*	*Poor*
Completeness	- the worksheet is complete and all parts/ questions are addressed to the fullest extent.	- the worksheet is complete however not every part/ question are addressed to the fullest extent.	- the worksheet is mostly complete; only some parts/ questions are fully addressed.	- the worksheet is not complete; many parts/ questions are not fully addressed or even addressed.
Knowledge application and transfer	- shows advanced understandings of both academic and industrial knowledge; demonstrates effective application of academic knowledge to the work context.	- shows comprehension of both academic and industrial knowledge; demonstrates application of academic knowledge to the work context.	- shows limited understandings of both academic and industrial knowledge; little evidence of applying academic knowledge to the work context.	- shows no understanding of both academic and industrial knowledge; no attempt or poor attempt to apply academic knowledge to the work context.
Quality	- the worksheet entries show in-depth reflection of the internship experience and are highly oriented to the student's future career goals; - entries are very clear, logical and accurate.	- the worksheet entries show reflection of the internship experience and are oriented to the student's future career goals; - entries are mostly clear, logical and accurate.	- the worksheet entries show limited reflection of the internship experience and are marginally oriented to the student's future career goals; - entries could be clearer, more logical and accurate.	- the worksheet entries show no reflection of the internship experience and are not oriented to the student's future career goals; - entries lack clarity, logic and accuracy.
Writing mechanics	- language use is mature, free from errors.	- language use is appropriate with minor errors.	- improvement as there are apparent errors.	- language use is problematic with errors.

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5 Reflection as Assessment in Experiential Learning

> Reflection is how you see yourself before, now and after; how you see yourself from different perspectives; how you see yourself after certain situations or experiences; how you see yourself, your actions and your behaviours after you observe others.
>
> – Chan, CKY

Introduction

This chapter is solely dedicated to reflection. As illustrated in Chapter 1, it is a must-have feature in experiential learning. While reflection is often used as an assessment in experiential learning, it is complex (Rodgers, 2002) and is very difficult for learners and teachers to employ and assess, thus, it merits a chapter by itself.

5.1 Reflection is …

Reflection is an integral part of experiential learning. Dewey (1933) fittingly stated, "we do not learn from experience… we learn from reflecting on experience." Experience alone does not necessarily lead to learning; active and conscious reflection on experiences, emotions, actions and responses is essential to make meaning out of them (Loughran, 2002; Tomlinson, 1999). But what exactly is reflection? If you ask a layman, the answer may well be – it is an image that you see in a mirror. This in its most simplistic way is exactly what reflection is; reflection is how you see yourself, but it does not end there.

For the majority of circumstances in life, reflection comes instantaneously (i.e. doesn't require us to reflect critically or intentionally). For example, a student, Sean, enrols in a carpentry apprentice programme, and accidentally he holds the sharp end of a saw and cuts himself. His brain will automatically make a connection that holding the sharp end of a saw can hurt him. However, there are also a large number of circumstances in life which requires deeper reflection as they are not always obvious. Let's use the same carpentry apprentice example and link it to academic learning. Apart from practical carpentry works, carpentry courses often include carpentry mathematics such as geometry, building layouts, foundation work, roofing, stair construction, understanding carpentry

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tools, siding and mouldings. Sean, the carpentry apprentice has to put into practice what he learns in his academic class, and that requires reflection. The apprentice will learn and experience, but he will not improve his skills without proper reflection. For example, Sean is asked to make a creative wooden piece for his project, a piece that he has to visualise on his own. As he has never seen such a piece created previously, he may not be able to decide which type of tools to use: would a handsaw be more suitable, or perhaps a circular saw? Sean needs to reflect on previous classes, bringing classroom knowledge together with the practical skills that he has gained. He needs to ask himself questions, *how can I cut that piece with a handsaw, would that make smooth edges? Can I combine it with other tools? Previously, the teacher showed us how to cut corners using a circular saw, could I do the same for mine?* Without reflection, he will be an absentee in developing new skills and will carry on doing things the way he has always been doing. Opportunities to develop creativity and critical thinking will be lost as he lacks the self-questioning attitudes needed to solve ill-defined issues and interpret meanings and feelings for himself. That said, most learners (people) think unconsciously, it is unusual that a learner does not perform some kind of reflection while experiencing an event, and the crucial differences lie in how *systematic, rigorous, structured and constructive* are one's way of thinking. And this is the type of reflection assessment that teachers should design within their experiential learning activities to train learners in their intentional reflection.

According to Van Beveren et al. (2018), "the concept of reflection has been extensively researched and theorized" (p. 1) over the previous decades. As Kember et al. (2008) pointed out, the concept of reflection is "widely and diversely used" (p. 369); written in different times and under different circumstances, many definitions and concepts of reflection have developed. This results in the differences in explanations and definitions of reflection, with various new terms branching from the idea of reflection. Below are some reflection concepts studied by educational researchers. Dewey defined reflection as:

> An active persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends.
>
> (Dewey, 1933)

According to Boyd and Fales (1983), reflective learning occurs when an individual's internal exploration of an issue or experience helps them to create or clarify its meaning.

In 2002, Rodgers re-examined Dewey's philosophy behind reflection and established four expanded concepts behind Dewey's concept of reflection. She believes

> Reflection is a meaning-making process that moves a learner from one experience into the next, with deeper understanding of its relationships with, and connections to, other experiences and ideas …

> Reflection is a systematic, rigorous and disciplined way of thinking
> Reflection needs to happen in community, in interaction with others
> Reflection requires attitudes that value the personal and intellectual growth of oneself and others.
>
> (Rodgers, 2002)

In a study by Boud and colleagues,

> Reflection is an important human activity in which people recapture their experience, think about it, mull it over and evaluate it. It is this working with experience that is important in learning.
>
> (Boud et al., 1985)

Schön defines

> Reflective practice as the practice by which professionals become aware of their implicit knowledge base and learn from their experience.
>
> (Schön, 1983)

There are many definitions of reflection, and through many researchers and studies, we formulate our reflection idea from numerous definitions as

> Reflection can be generally seen as a process of thinking, evaluating, and making sense of existing experiences as well as planning for future experiences, and is an integral component of both self-knowledge and self-regulation allowing individual to evaluate and gain insights into themselves, as well as to monitor and change courses of action taken in order to improve performance personally and professionally.
>
> (Chan & Lee, 2021)

In summary,

> Reflection is how you see yourself before, now and after; how you see yourself from different perspectives; how you see yourself after certain situations or experiences; how you see yourself, your actions and your behaviours after you observe others.

5.2 Reflection for Higher-Order Thinking Processes

Reflection can be complex and challenging, but at the same time, it can be highly effective in developing metacognition for higher-order thinking processes (Efklides, 2008; Magno, 2010). In Bloom's taxonomy, reflection and reflective practices are considered major approaches to delivering evaluation and critique at the highest educational level of the taxonomy (Bloom, 1956). While in Biggs'

Structure of Observed Learning Outcomes (SOLO) taxonomy, John Biggs has indicated that reflection maps into deep learning within the SOLO levels; without reflection in the teaching and learning activities, surface learning arises (Biggs & Collis, 1982). Mezirow (1990) and Moon (1999) found that critical reflection and critical review could lead to transformative learning. Transformative learning is a process in which learners acquire new information and at the same time, evaluate their past ideas and knowledge, and critique what they knew or understood previously by combining the new perspectives to derive their own new insights and information. Reflection can lead to self-development and self-awareness, researchers (Harvey et al., 2010; Smith et al., 2007) suggested that holistic competencies can be developed through reflective practice. Thus, it can be seen that reflection is crucial for experiential learning and holistic competency development.

5.3 The Benefits of Reflection

Apart from enhancing higher-order thinking competencies, reflection has many benefits for teachers and students. Similar to Chapter 1, for simplicity, a comprehensive list of benefits of reflection for teachers and students is presented below.

Benefits for Teachers

- *Understanding the progress of students* – Reflective journals provide good opportunities for teachers to gain a better understanding of how their students think and feel, as well as the learning progress their students go through during the course or activity, which will enhance the students' learning process.
- *Opening constructive dialogues* – Reflective journals, if supported by teachers' feedback effectively, help open dialogues between the student and the teacher to build on past learning experiences and co-construct knowledge.

Benefits for Students

- *Active learning* – The process of reflection encourages the students to take the initiative to be active and self-driven; allows individual learner to explore concepts and ideas in relation to their thoughts and feelings from different perspectives.
- *Responsible for their own learning* – Students can become independent thinkers through reflective practice and feel empowered to solve various problems on their own.
- *Identity construction* – Reflective journals allow students to establish narratives of themselves, especially when the students are able to maintain a trusting relationship with their teachers. When students are encouraged to express themselves, individual identities are given a chance to be nurtured.
- *Improve writing skills* – Writing reflective journals can involve students in a new form of writing that may be new to them. This exposure can lead to improvement in students' writing skills.

- *Opportunity to express and understand self* – Reflective assignments provide the platform for students to express what they think and feel about the course and their learning process, and also promote their expression of ideas, personal experiences and opinions. This is an ideal place for students who are generally not willing to speak up in class and tutorials to express themselves. Reflection also enables and assists students to observe their own practices, recognise their strengths and weaknesses, and form a better self-understanding.
- *Enhancing critical thinking and lifelong learning* – The process of self-reflection enhances the development of critical thinking skills among students when they relate their knowledge to real-world issues. It can help students develop a questioning attitude towards different issues and problems and learn to update their learning and knowledge.
- *Keeping track of personal growth* – Reflective journals, if logged, provide written proof of a student's progression in thinking. By reviewing these journals written over time, students can learn from their growth path and strategically plan for their future learning.

5.4 The Challenges of Reflection

Reflection as an assessment is exceptionally challenging because it requires the assessors to understand more than the knowledge, skills and the activity involved; often, the assessors need to be aware of learner's past, present and future directions. In 2021, Katherine (my postgraduate student) and I (Chan & Lee, 2021) conducted a comprehensive systematic literature review to discuss the challenges of reflections through a multilevel perspective. These challenges are classified into four levels as shown in Figure 5.1, which interrelate and influence each other in reciprocal relationships. The four levels, from micro to macro influences, are (1) student learning level; (2) teacher pedagogical level; (3) institutional level and (4) sociocultural level.

In reciprocal relationships, the influences of macro variables (institutional and sociocultural) emerge as cultural norms and expectations to create a specific social and cultural context that highly influences reflective practice (Boud & Walker, 1998), hence determining the appropriate types of reflection for fostering students' reflective ability and for institutions to incorporate into curricula, in order to engage learners in reflection. Simultaneously, micro variables (student learning and teacher pedagogical) also influence higher-level challenges (Erez & Gati, 2004). Since education culture is constituted by teachers' and students' mindsets and practices, changes need to start on an individual level.

5.4.1 Student Learning Level

The framework of student learning level is classified into four categories: (1) Student motivation, (2) Understanding of and ability to engage in reflection, (3) Ethical concerns and emotional impact, and (4) Student-teacher relationship.

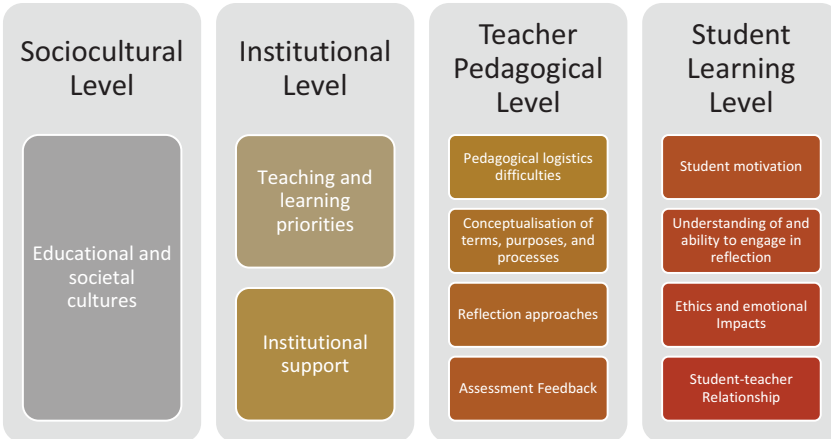

Figure 5.1 Multilevel challenges in critical reflection (Chan & Lee, 2021).
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Student Learning Level: Student Motivation

To encourage students to engage in reflection, students need to first feel motivated. However, we (Chan & Lee, 2021) found that the time and workload required for students to develop reflective skills and complete reflective tasks hindered students' motivation (Chong, 2009; Korucu Kis & Kartal, 2019). In addition, since reflection is a complex thinking process, pressure increases when there are time constraints (Jindal-Snape & Holmes, 2009; Mortari, 2012). Furthermore, some students did not find the mode of reflection helpful (Ahmed, 2020; Power, 2012). Neglecting students' needs and preferences discourages them to engage in reflection.

Student Learning Level: Understanding of and Ability to Engage in Reflection

It is necessary for students to understand what reflection is for and how it is relevant to their learning because these affect the quality of student reflection. However, from our literature review, Chan and Lee (2021) discovered that some students were unable to identify the purpose of reflection. Some also lack the necessary knowledge (i.e. reflective theories, subject knowledge, etc.) and relevant skills (i.e. critical thinking skills, writing skills, etc.) for engaging in reflection (Ahmed, 2020; Kis & Kartal, 2019; Thomson et al., 2019). Some failed to identify alternative forms of reflection and recognise their values (Jack & Illingworth, 2019). Apart from these challenges, sometimes language barrier also obstructs students from engaging in reflection. Unlike other kinds of academic writing that are relatively objective, sophisticated rhetoric and linguistic skills are

required for reflections (Ono & Ichii, 2019; Rai, 2006). Students' unfamiliarity with the appropriate writing style therefore become a challenge.

Student Learning Level: Ethical Concerns and Emotional Impact

It was also found that students might feel stressed, fearful and uncomfortable while engaging in deep-level reflections (Ghaye, 2007; Mortari, 2012). Some students regarded reflection as private and personal, and hence feel reluctant and anxious, or even threatened, to share reflections publicly (Jindal-Snape & Holmes, 2009; Ross, 2011). According to Boud (2001, p. 15),

> the exploration of the self that reflection involves requires a relatively protected environment in which one is not continually preoccupied by defending oneself from the scrutiny of others… For example, revealing negative feelings about the difficulties of classroom practice could have a substantial influence on how a student teacher is perceived by supervisors and may lead to failure to graduate. Whether this is the reality of the situation, simply imagining such an occurrence may be a barrier to recording such feelings.

This also further leads to the concerns of ethics, objectivity in grading, and the transparency of assessment criteria and process in evaluating personal and subjective reflection. Furthermore, students felt unsupported without teacher assistance and clear guidelines on reflective task requirements, and this leads to anxiety (O'Connell & Dyment, 2005; Sutton et al., 2007). All these discourage students from engaging in reflection.

Student Learning Level: Student-Teacher Relationship

To encourage students to engage in reflection, students need to feel comfortable to share their thoughts and feelings. However, we (Chan & Lee, 2021) found that because of teachers' roles as educator and assessor simultaneously, students may not feel comfortable to share deeply (Jindal-Snape & Holmes, 2009), especially when sensitive topics were reflected upon. Without sufficient trust between students and teachers, students may feel doubtful and anxious about how teachers assess their reflections (Stewart & Richardson, 2000; Wong-Wylie, 2007). Therefore, student-teacher relationship characterised by a lack of trust can obstruct students from engaging in deep-level reflections.

5.4.2 Teacher Pedagogical Level

At the teacher pedagogical level, four categories of challenges emerged (Chan & Lee, 2021): (1) Difficulties with pedagogical logistics, (2) Conceptualisation of terms, purposes and processes, (3) Reflection approaches, and (4) Assessment and feedback.

Teacher Pedagogical Level: Difficulties with Pedagogical Logistics

Similar to the challenges faced by students, our literature review paper (Chan & Lee, 2021) shows that lack of time was also a challenge for teachers, especially when designing reflection for large classes and under a tight teaching schedule. Students need to be engaged in deep learning for effective reflection. Therefore, teachers could have difficulties in designing a well-structured lesson with reflection (i.e. Kuswandono, 2014; Lo, 2010) when there is a lack of time. Accordingly, time and space resources were also required to support a well-structured lesson, but it was found to be difficult for teachers to have access to such resource for a large group setting. Teachers also need to possess sensitivity and pedagogical competence to facilitate collective reflection safely (Clarke, 2011).

Teacher Pedagogical Level: Conceptualisation of Terms, Purposes and Processes

Reflection can be valuable to students if there is meaningful guidance from teachers. However, it was found that teachers often lack the necessary knowledge to facilitate reflection effectively, and this can prevent students from engaging in reflection (Butani et al., 2017; Thomson et al., 2019). In addition, different expectations on and understanding of reflection by teachers could also bring challenges because the absence of agreement poses difficulties for students to understand how they were expected to engage in reflection and how they would be assessed (Butani et al., 2017; Lau, 2016).

Teacher Pedagogical Level: Reflection Approaches

As discussed earlier, the choice of mode can influence the quality of reflection and the motivation of students. Thus, the lack of reflection literacy of teachers poses as a barrier for recognising the appropriate modes and approaches suitable for facilitating and assessing reflection according to student background and expectation (Esposito & Freda, 2016; Power, 2012).

Teacher Pedagogical Level: Assessment and Feedback

Apart from challenges in designing reflections, teachers also encounter challenges when assessing reflection. Subjectivity is a challenge for teachers while setting grading standards for reflections (Bourner, 2003; Smith, 2011). The absence of a clear assessment rubric leads to teachers' reliance on their own personal judgment and subjective evaluation to grade reflections (Cheng & Chan, 2019; Jindal-Snape & Holmes, 2009), from which bias may arise.

5.4.3 Institutional Level

At institutional level, the challenges are classified into two categories: (1) Teaching and learning priorities and (2) Institutional support.

Institutional Level: Teaching and Learning Priorities

Teachers tend to pay less effort in introducing reflective practice because the introduction of such an innovative pedagogical approach is not a priority; thus, the effort to integrate such an approach into teaching is often left unrecognised.

Institutional Level: Institutional Support

Without appropriate institutional support on curriculum structure, teacher training, assessment policy and criteria, etc. (Chan et al., 2020; Davis, 2003), it is difficult for students and teachers to engage in effective reflection as part of their curricula.

5.4.4 Sociocultural Level

Sociocultural factors "including norms that govern social interactions, relationships between students and teachers, and acceptable ways of expressing oneself" (Chan & Lee, 2021, pp. 11–12) are challenges for reflection. Traditional educational system emphasises on passive learning, rationality and academic outcomes, and exam-oriented culture is often more valued (Korucu Kis & Kartal, 2019; Lo, 2010; Lutz et al., 2017). The power distance between teachers and students in traditional educational systems also influences the willingness of both parties to engage in critical reflective discussion (Richardson, 2004). All these societal and cultural influences can discourage students and teachers to engage in reflection.

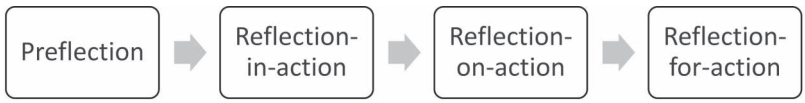
5.5 Moments of Reflection

As complex as reflection already is, the moment (i.e. when) in which the learner reflects is also of significant importance. It may help to achieve deeper reflection during the process. Before reflection, there is *Preflection* (Jones & Bjelland, 2004), a type of reflection to get students thinking about what to expect in their reflection, preparing them to reflect; simply put it is the process of thinking about their learning experience before it begins. Schön (1983, 1987) advocated two types of reflection, or more accurately, moments of reflection – *reflection-in-action* and *reflection-on-action*.

> Preflection is a precursor of reflection, it is when one consciously thinks about the expectations associated with the reflection. (BEFORE)
>
> Reflection-in-action occurs at the same time as when the activity (event) is happening, the reflection happens simultaneously with the actions, the learner thinks and reacts on the spot. (DURING)
>
> Reflection-on-action occurs after the action, reflecting on something that has been done in the activity (event), considering what could have been done differently, as well as looking at the positives from that interaction. (AFTER)
>
> Reflection-for-action occurs when one thinks about future actions with the intention to make improvements. (DURING OR AFTER)

In education assessment, it is often reflection-on-action we are asking the students to undertake, however, in experiential learning, both types of reflection may happen. Another moment of reflection which was developed from Schön's work is *reflection-for-action*, this moment occurs when one thinks about future actions with the intention to make improvements (Farrell, 2013).

Assuming there is a timeline for which reflection should occur, these moments of reflection should occur in sequence,



but of course, it is not that simple, reflection does not really happen linearly. Our minds often jump from one thought to another, thus, the four moments of reflection may occur at any time in the duration of the course. Depending on the aim of the reflection, teachers should design the reflection exercise at the appropriate moment.

5.6 Reflection Approaches

Unlike traditional teaching approaches, reflection is a key component in active learning as students actively engage in the process of thinking about what they have learnt or experienced. Reflection can be a learning tool and at the same time, it can be an assessment (Chan & Luo, 2020). Both modes can achieve some or all the benefits discussed in Section 5.3, particularly if it is well designed together with effective facilitation of student reflection.

Mezirow (1991) highlighted how reflection can mean many things, including awareness of perception, thought, feeling, intention and action, taking something into consideration or simply visualising other options. As such, different reflective approaches may allow learners to produce whole or partial aggregation of these effects, resulting in the development of different learning outcomes including various competencies. This echoes the conclusion of our literature review paper (Chan & Lee, 2021), which highlighted that students' ability to "express their thoughts and emotions through different means" (p. 14) is an important part of being reflection literate.

Moon (2004) has long ago suggested that reflection can be represented in written, visual, oral or performance forms. Amongst these different forms, written reflection has been the most commonly employed approach to nurture students' reflective literacy (e.g. Wald & Reis, 2010). Some of the common written approaches are online journaling (e.g. Xie et al., 2008), diaries (Bruno & Dell'Aversana, 2017), and learning portfolios (e.g. Klenowski et al., 2006; Lo, 2010; Scott & Fortune, 2009), reflective journaling (Barney & Mackinlay, 2010), reflection essays (McGuire et al., 2009), and reflective analyses (e.g.

Table 5.1 Reflective practices under the four-broad type of reflective approaches

Written Reflection	*Video Reflection*	*Audio Reflection*	*Face-to-Face Reflection*
Reflective essays	Video blogs	Podcast	Reflective discussion
Diary (Daily/ Weekly)	Video diary	Audio diary	Interviews
Online reflective journaling	Self-recorded video reflection	Self-recorded audio reflection	Group discussion (with mentor/supervisor/ peer/teacher)
Learning portfolio			
Reflective analyses			

Fakazli & Gönen, 2017). With the advent of technology, teachers and researchers have been introducing diverse and innovative approaches to reflection, such as video-based reflections (such as vlogs; Rich & Hannafin, 2009), audio-based reflection (Myers et al., 2017) and podcasts (Bolliger & Armier, 2013). Other reflective approaches include working together with peers on group-based or collaborative discussions as well as discussions or interview sessions with supervisors (e.g. Burchell & Dyson, 2005; Epler et al., 2013; Martin & Double, 1998; McKenna et al., 2009; Olson et al., 2016). This shows the diversity in which reflection can be applied in education and how reflection can be an individual or group effort. There has also been an increasing interest in multimodality in reflection using various representational modes such as images and spoken words to encourage reflective practice that can accommodate different learning styles and preferences (Barton & Ryan, 2014; Koole et al., 2011; Yuan & Mak, 2018; Table 5.1).

In our recently published paper in the Active Learning in Higher Education journal (Chan & Wong, 2021), we examined student perspectives on the four types of different reflective approaches (i.e. written, audio, video and face-to-face). We found these different approaches have their own characteristics – namely *Interactive, Individual and Rework Reflection*, and with appropriate personal and environmental factors designed into the experiential learning programme, holistic competency can be developed. Figure 5.2 shows the interactive, individual and rework reflection framework, and more information can be found in Chan & Wong's 2021 paper.

Although written reflection is the most common type of reflection practised as an *individual reflection*, students predominantly preferred *interactive reflection when* given a choice. Face-to-face reflection should be increasingly implemented to encourage learning as Rodgers (2002) has long stated that "reflection needs to happen in community, in interaction with others." However, to implement effective interactive reflection, it is vital to build trust and good relationships among the learners and the respective stakeholders whether it is the mentor, supervisor, peer or teacher.

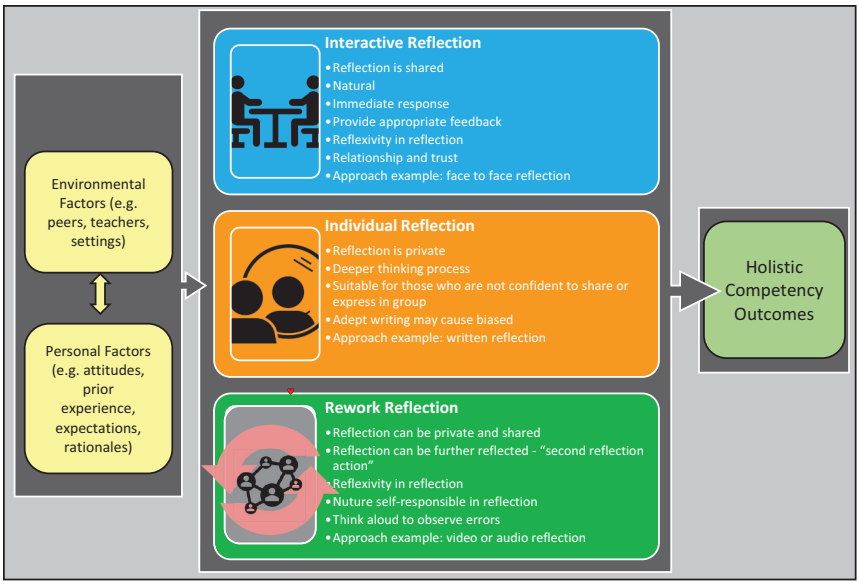


Figure 5.2 Interactive, individual and rework reflection framework (Chan & Wong, 2021). Source: Reproduced with permission from authors.

> In the literature, reflection has always been assumed as an individual, private journey. Words associated with reflection such as our thoughts, our experiences, our feelings and our emotions are often intertwined with personal diary, individual journal and self-reflective writing, emphasising reflection should be secluded and isolated. This study has shown reflective approach such as face-to-face can be interactive and communal if the learning environment is built properly.
>
> (Chan & Wong, 2021)

When designing reflective practices, it is important to focus on students' needs. Students deeply care about their privacy, and sometimes, "forced reflection" recorded either via video or audio or via face-to-face individual or group interviews may not be comfortable for them (Hobbs, 2007). One suggestion is to allow students to choose their choice of approaches to reflect, as this will foster learner autonomy and learner responsibility. The drawing in Figure 5.3 by Grace Colloton demonstrates the different reflection types.

In the findings, audio and video reflection are categorised into *rework reflection*,

> Rework reflection is defined as the type of reflection approach which allows students the opportunity to perform "at least" a "second reflection action", allowing the students to rework on their reflection from their initial

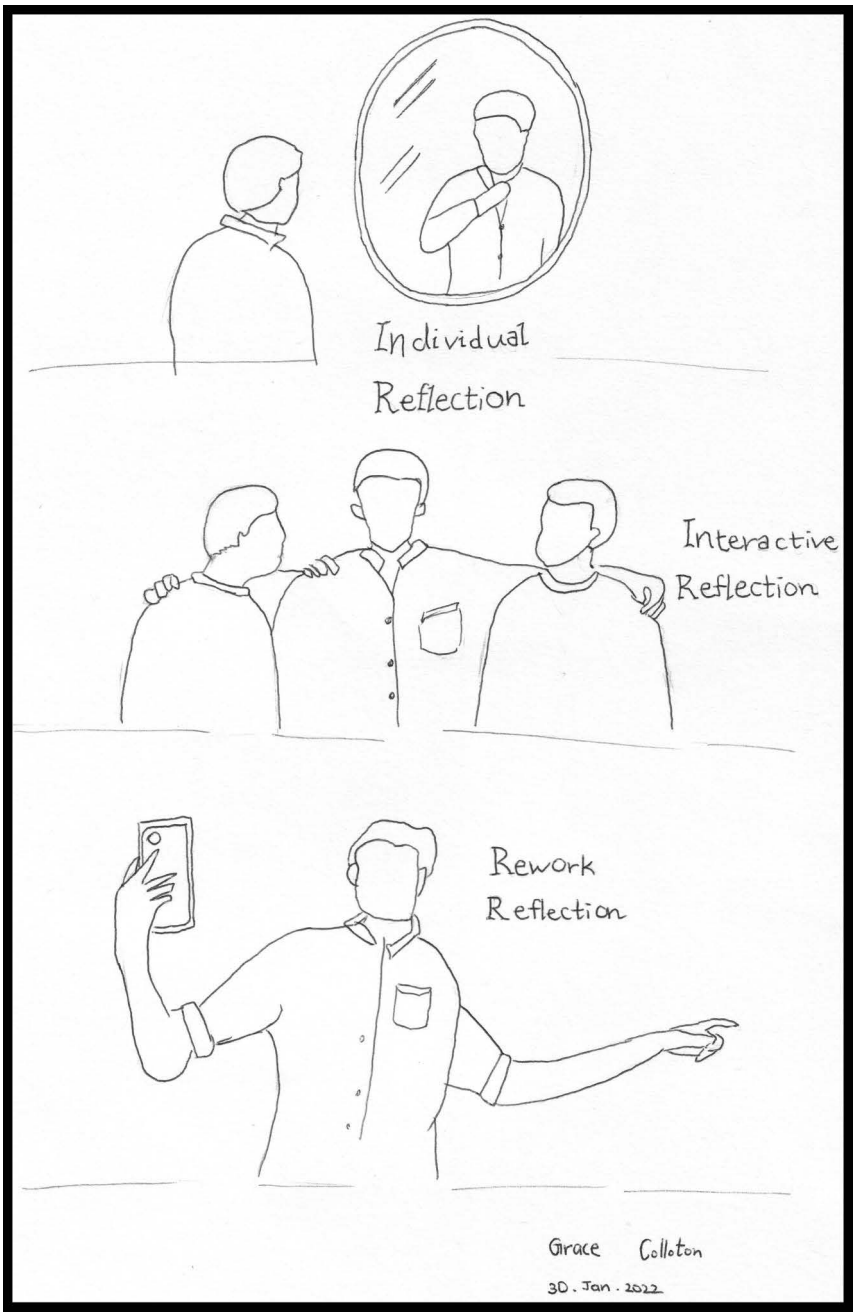


Figure 5.3 Reflection types – individual, interactive and rework reflection (Drawing by Grace Colloton).

> reflection. The rework reflection may be from their own reflection or from reflecting on peers' reflection.
>
> (Chan & Wong, 2021)

Learners are not accustomed to this kind of reflection, so there is a need to not only promote varying reflective practices but also to equip teachers with the knowledge and competence to implement such practices and to ensure that teachers are assessment literate in reflection (Chan & Lee, 2021; Chan & Luo, 2020; Chan et al., 2020; Cheng & Chan, 2019), while taking into consideration students' needs and preferences.

5.7 Reflection Assessment Frameworks and Models in Higher Education

With a variety of reflection concepts and approaches, there are also a variety of frameworks and models for investigating and guiding reflective practice within different disciplines in higher education. In the following section, I will provide a review of seven prominent frameworks and models that are utilised for the assessment of student reflection in higher education.

5.7.1 Kember et al. Coding Scheme and Mezirow's Typology of Reflective and Non-Reflective Action

Mezirow's (1991) typology of reflective and non-reflective action has been widely adopted and adapted to measure students' reflective thinking in different disciplinary areas. In his typology, there are three dimensions: content reflection (reflection on *what* we perceive, think, and act), process reflection (reflection on *how* we perceive, think, and act), and premise reflection (becoming aware of our own ways of perceiving, thinking, and acting). He further distinguished reflective action from non-reflective action. Non-reflective action comprises habitual action, thoughtful action in which previous knowledge may be recalled but not critically assessed, and introspection which is purely thoughts about ourselves without further analysis. Reflective action, on the other hand, concerns the three dimensions of content, process, and premise reflection. Kember et al. (1999) devised a coding scheme based on Mezirow's notions of reflective and non-reflective action. They reordered the seven types of thinking within the typology into four levels as shown in Table 5.2. Kember, Wong, and Leung (1999) argued that content reflection and process reflection are at the same level of complexity, while premise reflection is at a higher level of reflective practice. In line with Mezirow's conceptualisation, the first two levels were categorised as non-reflective whereas the last two levels were grouped under reflective action. A new category was constructed to account for the co-occurrence of content reflection and process reflection in journal writing. Eight assessors tested the coding scheme on three journal entries written by three undergraduate healthcare

Table 5.2 Kember et al. (1999) coding categories for reflective assessment based on Mezirow's typology

Level	*Mezirow's (1991) Typology of Reflective and Non-reflective Action*			*Kember et al. (1999)*	*Kember et al. (2008)*
4	Premise reflection			Reflective action	Critical reflection
3	Content reflection	Process reflection	Content and process reflection		Reflection
2	Introspection	Thoughtful action		Non-reflective Action	Understanding
1	Habitual action				Non-reflection

students, and the results showed that the coding scheme was a valid instrument for judging the quality of the research participants' reflective journals.

Bell et al. (2011) trialled Kember et al. (1999) coding scheme on seven business education students' written journals and proposed two additional categories—Process Reflection (Internal) and Process Reflection (Others) to differentiate students' reflection on their own thinking processes and those of others. They found that the coding scheme was useful for identifying the levels of reflection attained by students, but it was too detailed for coding a large number of written journals.

Kember and colleagues later reformulated the coding scheme as an assessment protocol with four categories of reflection (Kember et al., 2008). In the revised four-category scheme, habitual action is retained as the first level of non-reflection. The other three categories are understanding, reflection, and critical reflection at the second, third, and fourth levels respectively. The protocol is intended for judging a piece of writing as a whole by assigning the highest level of thinking observed in the entire piece. In some of the studies that adapted Mezirow's typology, students were graded as non-reflectors, reflectors, or critical reflectors based on the reflective elements observed in their written journals (Chirema, 2007; Paton, 2006).

5.7.2 Van Manen's Three Levels of Reflectivity

Van Manen (1977) outlined three levels of reflectivity based on theories in social sciences and education. The first level, technical rationality, concerns the technical application of knowledge and concepts to achieve a given goal without taking into consideration the wider context. On the second level, practical action, ideas and underlying assumptions are clarified and analysed to evaluate the consequences of action. The focus is on the nature and quality of an experience and the practical actions taken. The highest level is critical reflection where social

Table 5.3 Van Manen's three levels of reflectivity

Level	*Reflective Levels*	*Brief Criteria*
3	Critical reflection	Take into consideration personal biases, issues of power
2	Practical action	Focus on the nature and quality of experience and action taken
1	Technical rationality	Concerns about technical application of knowledge and concepts only

circumstances are taken into consideration, personal biases are questioned, and issues of power and domination are critically evaluated (Table 5.3).

Min et al. (2016) compared the reflective thinking of seven student teachers who had not been exposed to the critical reflection manual and that of 11 student teachers who had the exposure, using Van Manen's model to analyse their self-reflection notes and weekly journal entries. Their results show that the reflective writing of 94.4% of the participants who had not been exposed to the critical reflection manual was at the technical level. In contrast, among the 11 student teachers who had been given guidance on the use of the critical reflection manual, 81.3% of them could reflect critically, and none of them displayed technical rationality. In another study, Van Manen's model was used to analyse the interview data and written assignments of five physical education preservice teachers (Ballard & McBride, 2010). The researchers noted an increase in the participants' reflectivity over the 12-week period of data collection, and they concluded that Van Manen's model was a valid instrument for tracking the development of reflective thinking in teachers.

5.7.3 Bradley's Three Levels of Reflection

Bradley's three levels of reflection (as cited in Jacoby, 2015) provide an assessment framework that outlines the criteria for judging the level of student reflection. At the first level, reflection is superficial, one-dimensional, and narrow in its scope. It focuses on one aspect of the event and tends to be descriptive rather than analytical. At the second level, there is emerging evidence of critical reflection but with limited depth. Students may attempt to make connections, interpret evidence, and draw conclusions. They may also be able to make more thorough observations of the situation than level one, but they still fail to position the observations within a broader context and consider multiple perspectives. To attain the third level, students must demonstrate the ability to examine a situation within a broader and more complex context. There should be evidence of logical reasoning, well-grounded judgements, and consideration of multiple viewpoints. Bradley's assessment criteria have been employed to analyse teacher reflection in digital stories (Walters et al., 2011) and to assess student reflection as the outcome of experiential learning (Straughan et al., 2018).

5.7.4 King and Kitchener's Reflective Judgement Model

In King and Kitchener's (1994) reflective judgement model, reflection is conceptualised as seven stages progressing from pre-reflective thinking (stages one, two, and three) to quasi-reflective thinking (stages four and five) and reflective thinking (stages six and seven). The level of reflection is described in terms of views of knowledge and quality of judgements (King & Kitchener, 2004). Pre-reflective thinking is characterised by a perception of knowledge as absolute with little or no justification given to support one's views. As students progress to the phase of quasi-reflective thinking, they begin to acknowledge that knowledge is subjective and that they need to consider other perspectives to interpret evidence and events. At the highest level, knowledge is viewed as the product of one's personal construction based on information from multiple sources. Perceptions and beliefs are justified by weighing evidence and various viewpoints through logical reasoning. The reflective judgement model provides a framework for understanding the development of reflective thinking in young adults and mature adults (King & Kitchener, 2004), and thus it is appropriate for assessing student reflection in higher education. For example, Hashemi (2016) employed the model in an investigation of graduate students' intellectual development in a university, and Badger (2010) designed questions based on the levels in the model to examine preservice teachers' reflective thinking ability in an oral examination.

5.7.5 Sparks-Langer, Simmons, Pasch, Colton, and Starko's Framework for Reflective Thinking

Another assessment framework was devised by Sparks-Langer et al. (1990) to measure teacher education students' ability to think reflectively on their pedagogical decisions. The framework classifies seven levels of reflective thinking based on the language used by students. Level one is assigned when no descriptive language is observed. Level two shows simple, layperson description, and level three is indicated by events being labelled with appropriate terms. At levels four and five, explanations are supported by personal preference or theory as the rationale, whereas levels six and seven are characterised by explanations that take into consideration broader contexts and more complex factors such as ethical, moral, and political issues (Table 5.4).

Table 5.4 Sparks-Langer et al. (1990) reflective pedagogical thinking framework

Level	*Brief Criteria*
7	Explanation of ethical, moral and political issues
6	Explanation with broader contexts
5	Explanation supported by theory as rationale
4	Explanation supported by personal preference as rationale
3	Events labelled with appropriate terms
2	Simple layperson description
1	No descriptive language

Using the seven levels in Sparks-Langer et al.'s framework, Calandra et al. (2008) coded the written reflections of ten physical education teacher candidates before and after three learning cycles. They noticed a general increase in the participants' reflective thinking ability as indicated by the levels of reflection they attained according to the assessment framework. In another study, Calandra et al. (2009) used Sparks-Langer et al.'s framework and Van Manen's (1977) levels of reflectivity to analyse the journal entries of six teacher candidates to investigate the effects of video editing experiences on the teacher candidates' reflective thinking ability. Several other studies have also reported the use of the seven-level framework to investigate teacher reflection such as Sung et al. (2009) investigation of teachers' reflections in digital teaching portfolios and Hussein's (2007) research on teachers' reflective thoughts through the analysis of 11 prospective teachers' written journals.

5.7.6 Hatton and Smith's Four Types of Writing

In the assessment of written reflections, Hatton and Smith's (1995) categorisation of writing is a commonly used framework. Four types of writing were proposed: descriptive writing, descriptive reflection, dialogic reflection, and critical reflection. Descriptive writing is an entry-level, non-reflective account of events without any reasons and justifications provided to explain the events. Descriptive reflection integrates some form of justifications for events, but the writing is still mainly descriptive. Although there may be some mention of multiple factors that influence one's experience of events, they are not explored in depth. The third level of writing is dialogic reflection which shows the writer taking a step back from the events, exploring alternatives, making reasoned judgements, and providing rationales for actions. The highest form of writing is critical reflection in which the writer displays an awareness of how wider historical and social-political contexts influence events, actions, and the perspectives adopted by different people. In Penso et al. (2001) study, this categorisation was used to examine novice teachers' ability to reflect on their practical experiences. Despite its origin in teacher education, Hatton and Smith's framework has also been used in research into clinical practitioners' reflective thinking (Greenfield et al., 2015; Taylor-Haslip, 2010).

5.7.7 Moon's Generic Framework for Reflective Writing

Moon (2004) built on the work of Hatton and Smith (1995) and proposed a four-part generic framework for reflective writing. The first two levels of her framework, descriptive writing and descriptive account with some reflection, mirror Hatton and Smith's descriptive writing and descriptive reflection. Moon named the third and fourth levels "reflective writing (1)" and "reflective writing (2)" respectively. Similar to Hatton and Smith's (1995) dialogic reflection, reflective writing (1) demonstrates evidence of analysis, evaluation of events, and justification for actions. In reflective writing (2), the writer recognises alternative

perspectives, acknowledges the uncertain nature of people's frame of reference, and questions the views and motives of self and others. To investigate the relationship between the depth of students' written reflections and their information literacy development, McKinney and Sen (2012) graded their research participants' reflective statements using Moon's four categories of writing. They concluded that Moon's framework was a useful tool for assessing students' learning outcomes and for analysing the depth of reflection in their written assessments.

5.8 Reflection Literacy

Although reflection is a learning method commonly employed in many educational settings at different educational levels, there is still a lack of studies on the ability of teachers in higher education in facilitating and assessing reflections, or what we referred to in our paper (Chan & Lee, 2021) as "reflection literacy". We outlined the four components of reflection literacy in accordance with the research findings in a reflection literacy framework as shown in Figure 5.1. The equal status and reciprocal relationship of the four components illustrated by the framework suggest that in order to have a comprehensive understanding of reflection literacy, concerns of individual's abilities (i.e. both students and teachers) in the micro level as well as the institutional and societal contexts in the macro level are both necessary.

While the discussion of reflection literacy in higher education is still gathering interest from academics, the following sections may offer a brief overview of some recently published contributions from academics on the topic.

For reflection literacy to be established in higher education, there is a need to first overcome some barriers. These challenges are shown in Section 5.4. As shown in Figure 5.3, the four components that constitute reflection literacy are interrelated. Therefore, efforts must be made in coordinating the implementation of reflection in the different challenge levels namely, student learning, teacher pedagogical, institutional and socio-cultural levels. With adjustments and collaboration between different levels, the challenges identified in the four levels can then be overcome and reflection literacy can be further encouraged in higher education (Figure 5.4).

Narrowing down the focus to Hong Kong, the development of reflection literacy in higher education is still in its early stage with various needs remain to be addressed. In a study conducted by my student Jiahui (Jess) and I (Chan & Luo, 2020), six university teachers in Hong Kong were recruited to analyse their assessment literacy in reflection. The result revealed that despite the robust conceptual knowledge of reflection that teachers had, a stark gap between theory and practice remained as they showed a lack of confidence in assessing reflection. In another perspective, entrenched beliefs such as academic-oriented culture and the "teachers as the authority" mindset also confined the development of reflection literacy for teachers.

The misapprehension of reflection as an assessment is mind-boggling for both students and teachers. On one hand, students are accustomed to present their

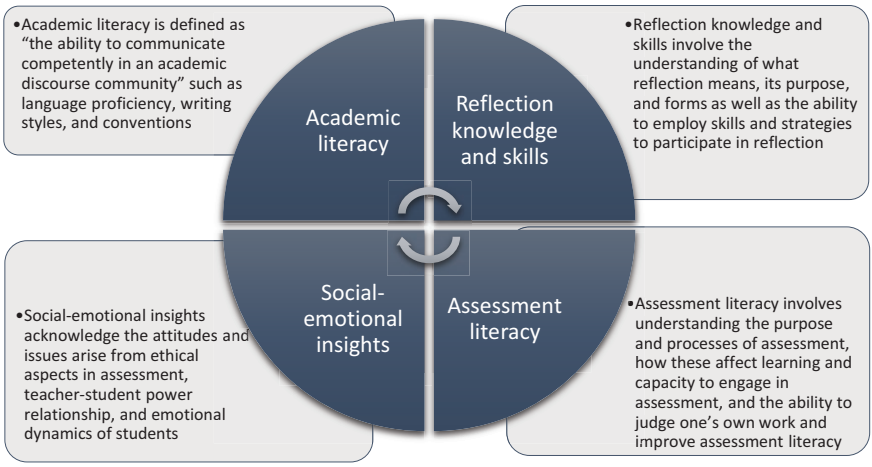


Figure 5.4 Reflection literacy framework (Chan & Lee, 2021).
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best work for assessment, but on the other hand, reflection is not built for showcasing students' best work. This mentality may often contradict the process and the outcomes of reflection. Similarly, teachers struggle with the tension of using reflection as an assessment (Boud, 2001). To be reflection literate, they need to "understand the clear separation of writing for learning and writing for assessment purposes" (Boud, 2001, p. 16).

With these needs left unmet, more efforts are still to be made by different stakeholders from multiple aspects so that the development of reflection literacy in higher education can be further promoted.

5.9 Tips for Designing Effective Reflective Assessment Practice

As discussed before, reflection as an assessment is exceptionally challenging because of the need for assessors to understand more than the knowledge, skills and the activity involved, meaning the assessors need to be aware of learner's past experience, present situation and future directions. Some researchers believe only active, conscious and systematic reflection count as reflection (Gondo & Amis, 2013; Valli, 1997), which, strictly speaking, is correct. However, if the reflection is employed as an assessment, then teachers will need to fully embrace student development, and encourage learners to intentionally reflect on their experiences. Hence, the reflective practice needs to be designed together with the activity – it cannot be an after-thought. Below are some tips for designing effective reflective assessment practice.

Build Habits to Critically Reflect at Appropriate Moments

Many students either do not have the time or do not know how to critically reflect. Providing class time to teach students to uncover and correct their own mistakes can be a starting point for reflection. Sample questions for a student includes: What went wrong?

As mentioned in Section 5.5, there are different moments of reflection, and reflecting at the appropriate moments can be very effective to enhance student learning. When teacher is designing an experiential learning activity, they should contemplate the appropriate moment of reflection for students to reflect. Purposefully designing pockets of reflection practices will result in building students' reflective habits and will assist them to reflect more intentionally and critically.

Offer Adequate Training and Guidelines

Reflective approaches are unlike traditional learning activity or assessment, as students may not be familiar with the expectations and deliverables. Thus, like all assessment practices, teachers should provide guidelines (Levett-Jones, 2007), exemplars, practices and trainings (Dyment & O'Connell, 2010) to ease their anxiety and uncertainty in participating in reflection (Sutton et al., 2007).

Avoid Judging Personal Reflection

Reflection is difficult to assess due to its innate subjective nature. As they often result from personal judgements or views based on the learner's experience, given that each learner has their own prior experience and personality (Bourner, 2003; Butani et al., 2017; Fernández-Peña et al., 2016; Smith, 2011), it is inappropriate and even offensive for teachers to directly assess the personal part of the reflection. The reflection should be seen as an aid to learners in working through a process, not as a product. Rather than assessing the reflective piece directly, for example, a reflective journal which students are expected to record their reflection including their feelings, experience, judgement, critique, knowledge or competencies gained in the journal. Teacher can separately design an essay assignment in which students can selectively draw on evidences or sources of references from the journal to support arguments to produce a summative piece of work. Students should be given the choice to submit the reflective journal or not as part of their evidence. Furthermore, Koole et al. (2011) also affirmed that direct assessment of the reflective piece will fail to achieve a valid and consistent assessment, "because they (teachers) have to judge selective descriptions without being able to verify their adequacy" (p. 5).

Usefulness/Uselessness of Reflection as an Assessment

Reflection as an assessment is a debatable question. I think that I need to reiterate my personal reflection from Chapter 3 here "to assess or not to assess, that

is the question", modified from Hamlet's soliloquy by William Shakespeare. It is unhelpful to assign reflection as an assessment in a context in which it is not offering learners a useful result (Boud & Walker, 1998, p. 198).

Be Mindful of the Environment

It is also important for teachers to be mindful of the context and the environment. The interconnected nature of social categorisations such as race, class, and gender as they apply to a given individual or group in reflection may cause serious dilemmas for the student and raises concern in ethics. Boud (2001, p. 15) asserted that

> the exploration of the self that reflection involves requires a relatively protected environment in which one is not continually preoccupied by defending oneself from the scrutiny of others… simply imagining such an occurrence may be a barrier to recording such feelings.

In Chapter 7, more on ethics in the assessment of experiential learning will be presented.

Set Standards and Guidelines

Most teachers do not have high reflective literacy, thus, without clear guidelines or rubrics for assessing reflection, teachers may rely on a random variety of criteria to assess students, including word count, grammar and writing comprehensibility, evidence of deep reflection, personal judgement and measurement against previous cases of assessed work (Cheng & Chan, 2019). The reflection assessment frameworks in Section 5.7 and some of the assessment approaches in Chapter 4 provide examples to guide teachers to develop their rubrics and guidelines.

Assess Student Progress

When assessing students' learning progress, teachers need to gauge students' progress for a long period (Bruno & Dell'Aversana, 2017; Hubbs & Brand, 2010; Threlfall, 2014), as without sound understanding of students' past experiences, it is difficult to provide evidence of improvement. Tracking student progress against the standards helps students identify the gaps between the expected standards and their learning. An approach to assess students' progress is by focussing on how well the students performed after mid-progress feedback and comments.

Design Interaction Reflection

Students have indicated that when a trusting and respectful environment with peers and teachers is established, interactive reflection (such as face-to-face reflection) can be more effective and welcomed (Chan & Wong, 2021). As students

share their reflections with one another, they can identify misconceptions or areas of confusion together and apply their knowledge and experience to solutions in different contexts and disciplines. Nicely put by the saying "two heads are better than one," this mode of reflection may help them to think more deeply about their assumptions and beliefs.

Promote and Allow Students to Choose their Choice of Reflective Approaches

Reflection is often "infused with emotion" (Dean et al., 2012, p. 111), dictating students to reflect on a set approach may cause discomfort.

Be Aware of Unexpected Learning Outcomes in Reflection

Reflection is emergent. Similar to experiential learning activities, outcomes may be undefined in advance and often be unplanned and unexpected. A two-part learning contract could be implemented in this case. Student and teacher could agree on the assessment and reflective approach for the generic outcomes of the experiential learning course and for those unplanned "specific outcomes" (Luk & Chan, 2021), students should be given autonomy to design the appropriate assessment. The first part of the learning contract may be executed at the beginning of the learning activity to raise awareness, build expectations and agree on some basic responsibilities; while the second part of the learning contract can be used to manage the unplanned learning outcomes. This can be executed after the student understands their position and duties of the activity.

Act as a Role Model by Being a Reflective Teacher

Teachers should model expectations by critically reflecting on themselves and their teaching. This may assist teachers to adopt less familiar roles, as facilitators (Rarieya, 2005) and reflective practitioners (Smith, 2011).

Provide Feedback by a Qualified Individual

Feedback should only be provided by qualified individuals who are fit to comment, and that sometimes may not be the teacher.

Present Reflective Prompts

Reflective prompts allow us to direct students towards the expected outcomes of a reflective assessment. Teachers could provide reflective questions and prompts to link and construct meaning from students' experiential learning experiences. Rolfe et al. (2001) developed three simple but major questions (i.e. What, So What and Now What) for reflective practice. With these three "what" questions, I have generated a list of prompt questions that would be useful in helping students reflect as shown in Table 5.5.

Table 5.5 The three what questions and reflective prompts

The WHAT Question and Description	*Reflective Prompt Questions*
What?	
This section is for the student to write a description of the experience with concepts and brief details.	• What happened? • What did you expect? • What were your role in the project? • What did you observe? • What was your reaction? • What did you learn? • Who was involved in the project? • When did this project occur? • Where was the project based? • Why did you pursue this project? • How did you feel after the project?
So what?	
This section is for the student to derive more in-depth details of the experience including your different viewpoints, actions, understanding, emotions, etc. Using the information from the "what?" section as well as your previous experience and knowledge to help you to think through the different perspectives.	• How did the experience enhance your personal development? • Did you identify strengths or weaknesses while participating this project? • What kind of impacts did the project achieve and how did it impact you? • Were there any discrepancies between your expectations and the outcomes? • What surprises you and why? • What did you learn about others? • What did you learn about yourself? • Where could I have done better?
Now what?	
This section is to explore how the emotions, actions, viewpoints and impacts that result from the experience will shape future thinking, behaviour and action and develop learning.	• What will you do differently in the future? • How would you achieve your goals based on your experience? • What do you need to do to overcome the challenges in the future? • How will you apply what you have developed from this experience? • How can I do better next time?

Conclusions

In this chapter, I presented topics on reflection as assessment in experiential learning. Reflection is a fascinating area, it is absolutely necessary if we want students to develop and improve. However, whether it should be used as an assessment, I am still debating it internally because unless teachers and students are reflection and assessment literate, they may find it difficult to fully unite the two

together. Nevertheless, I am certain the different sections in this chapter will increase one's reflection literacy, and hopefully, this will help us move towards a more "fair, gifted, innovative" approach in assessing reflection.

Questions to Ponder

- Should you use reflection as a learning activity or as an assessment?
- When is the right moment to reflect?
- What kind of learning outcomes can reflection achieve?
- How to avoid judging personal reflection?
- Is it ethically correct to assess students' reflection?
- How can habits be built for intentional reflection?

Personal Reflection

The morning after I finished writing this chapter. I lay on my bed thinking, "have I missed anything?" "Are all sections interconnected in a coherent way?" "Would experts agree with my take on reflection literacy?"

I guess I am practicing what I preach, trying to critically and intentionally reflect.

Whether reflection should be assessed or not, I think this is something the teacher needs to design with caution, requiring reflection as an assessment may produce contrary and unfavourable effects. Reflection literacy is needed for both students and teachers, and no teacher should use reflection without being fully literate on it.

If you would like to learn more, connect with me on Twitter and LinkedIn, as I plan to run workshops for teachers and also guide them to teach students how to reflect. I hope I can share what I have learnt with you all.

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6 Feedback in Experiential Learning

> Feedback can be emotional; it is just a fine line between critiquing and criticising, depending what you are hoping to achieve.
>
> – Chan, CKY

Introduction

In Chapter 3, I introduced reflection and feedback as part of the outcome-based approach for experiential learning, as these two components are particularly vital in its development. Reflection has already been discussed in detail in Chapter 5, and in this chapter, we will examine feedback in experiential learning and provide some strategies with which feedback can be designed in an experiential learning curriculum. However, feedback is a topical and very complex area, and a vast amount of energy has been exhausted by many great colleagues such as David Boud, David Carless, Gavin Brown, Joanna Tai, Phillip Dawson, David Nicol, Rola Ajjawi, John Hattie, Naomi Winstone, Yan Zi, Ivan S W Chong, Christopher Deneen, Debra Macfarlane-Dick, Royce Sadler, Emma Medland, and many more (forgive me if your name is not mentioned here… there are just so many fantastic researchers on feedback). Thus, I only include this brief chapter on feedback in experiential learning to make this book more complete. If feedback in experiential learning is what interests you, I invite you to take a look at the articles by these colleagues and try to adapt their strategies into experiential learning. A reference list of their articles can be found at the end of this chapter.

6.1 Feedback is …

The meaning of feedback has embraced significant conceptual shifts over the recent decades. Traditionally, feedback has been defined as information delivered to students, with a focus on how teachers engage with feedback (Hattie & Timperley, 2007). However, more recent understandings go beyond seeing feedback merely as a unidirectional transmission, but as "a process through which learners make sense of information from various sources and use it to enhance their work or learning strategies" (Carless & Boud, 2018, p. 1315). Following

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Carless and Boud's model, the role of students has been emphasised in the feedback process. Some latest research on feedback operates from ecological (Chong, 2021) and socio-material perspectives (Gravett, 2020), foregrounding individual, contextual, spatial and temporal factors that influence meaningful student engagement with feedback.

Along with reflection, feedback is the most critical element of effective experiential learning programmes (Eyler, 2009). To elucidate the theory underlying experiential learning, Kolb and Kolb (2005) propose that an effective higher education programme needs to emphasise the process of learning – one which integrates feedback on students' various learning attempts and efforts. As Ryser, Halseth, and Thien (2009) put it, "[w]ithout sufficient guidance and feedback, experiential learning cannot take place" (pp. 256–257). When carefully planned and well executed, feedback can determine task performance (Bhattacharya & Neelam, 2018), provide a basis for self-reflection (Quinton & Smallbone, 2010), and enhance learning transfer (Furman & Sibthorp, 2013). In what follows, I review some common focuses in feedback research and relate these focuses to the context of experiential learning in higher education.

6.2 Components in the Feedback Mechanism of Experiential Learning in Higher Education

Under the traditional framing of feedback as information, research has suggested several elements critical to feedback input in experiential learning. For instance, feedback should be individualised (Jerman, 2002; Parikh et al., 2001; Perera et al., 2008), which is particularly important for holistic competencies, as they are often personal; feedback also needs to be specific and detailed (Pelgrim et al., 2012; White, 2007), and provided in a timely manner (Perera et al., 2008). Following the shift in reconceptualising feedback as a student-centred process, increasing research has also argued to cultivate students' feedback literacy as a way of enabling their uptake of feedback (Carless & Boud, 2018; Han & Xu, 2020). However, despite increasing investment and efforts to improve experiential learning feedback practices (e.g., Dannefer & Prayson, 2013; Kamp et al., 2014), dissatisfaction among teachers and students regarding feedback as a whole still remains fairly palpable in higher education worldwide (Henderson et al., 2019).

A review of relevant literature shows that the feedback mechanism of experiential learning in higher education is made up of the following four components. The first three components are frequently discussed and considered important under the traditional paradigm of feedback; whereas the last one, which focuses on the interaction between teacher and student feedback literacy, reflects some recent efforts to reframe feedback as a student-oriented process. The four components to be discussed are:

i Quality of feedback input
ii Qualified sources of feedback

iii Types of feedback practices
iv Student and teacher feedback literacy

6.2.1 Quality of Feedback Input

Many studies have looked into what constitutes 'good' or 'effective' feedback input (e.g., Dawson et al., 2019; Ferguson, 2011; Nicol & Macfarlane-Dick, 2006). To date, one of the most well-cited research on this topic was authored by Nicol and Macfarlane-Dick (2006), which has been cited over 6,000 times as of 2022. Based on the seven principles they proposed (pp. 206–214), quality feedback input:

i Helps clarify what good performance is;
ii Facilitates the development of self-assessment (reflection) in learning;
iii Delivers high-quality information to students about their learning;
iv Encourages teacher and peer dialogue around learning;
v Encourages positive motivational beliefs and self-esteem;
vi Provides opportunities to close the gap between current and desired performance;
vii Provides information to teachers that can be used to help shape the teaching

Apart from these principles, some other features of feedback input, such as being detailed, personal, timely, specific and criteria-referenced, have also been frequently discussed in the literature (e.g., Dawson et al., 2019; Ferguson, 2011; Poulos & Mahony 2008). Due to space limitations, here I only elaborate on two widely recognised feedback features that are particularly relevant to the experiential learning context – timeliness and specificity.

Timeliness

Feedback in experiential learning should be timely for it to be perceived as useful and actionable (Powell & Bartlett, 2018; Watling, 2014). Timeliness does not necessarily mean promptness but rather the fact that feedback is given at a suitable time to enhance learning. It is particularly vital in industrial internships to ensure close monitoring, as any mistakes will potentially jeopardise clients' interests (Bhattacharya & Neelam, 2018). In an investigation into the effectiveness of an e-business project, Daly (2001) found that a lack of prompt feedback from the instructors resulted in a sense of confusion and ambiguity among the students about the direction of their work and learning objectives. When properly implemented, concurrent feedback alleviates learner anxiety and promotes self-efficacy (Daly, 2001). As engaging teachers in experiential learning designs already places a heavier workload on them compared with adhering to traditional pedagogies (Li et al., 2007; Ngai & Chan, 2019), teachers might not have the capacity to turnaround feedback timely or in detail for a large class (Garcia et al., 2017).

Specificity

The interactive and authentic features of experiential learning call for novel assessment methods to evaluate students' learning. As mentioned in Chapter 4, reflective writings (Deeley, 2018), portfolios (Brown, 2002; Qualters, 2010), observations (Cheng et al., 2019; Ferguson et al., 2016) and many other assessment methods have already been widely adopted in experiential learning. Due to the subjective nature of these methods and commonplace of unintended learning outcomes, teachers reported difficulties in providing precise and constructive feedback to students (Lean et al., 2017; Ramsgaard & Christensen, 2018). Teachers also have to deal with the socio-emotional aspect of feedback. Bradford (2019) asserted that inappropriate feedback of students' experiential learning could cause "pain and damaged relationships" (p. 95).

6.2.2 Qualified Sources of Feedback

One of the key issues in implementing feedback within the experiential learning context concerns who should provide feedback and whether they are qualified sources of feedback. The word "qualified" can mean trusted, experienced and/or respected. Students may question the reliability of the feedback particularly when the feedback is not associated with the academic-related outcomes of the experiential learning project, but rather with holistic competency. Depending on the type of experiential learning activity, other sources of feedback may be more suitable, such as peers, external partners, seniors and self.

Peer Feedback

Research has revealed evidence that peer mentoring and feedback produce positive outcomes across social, emotional, behavioural, and academic domains for adolescents when implemented effectively (e.g., DuBois et al., 2011; Goldner & Mayseless, 2009; Raposa et al., 2019; Rhodes, 2002), as adolescents often found it easier to associate with their peers. In experiential learning, as noted by Van-Schenkhof et al. (2018), peer feedback is a critical component and is "directly associated with problem-based, team-based, and classroom organization based instructional methods" (p. 92). Carvalho (2013) also stated that peer evaluation has attracted ample attention in higher education, particularly in regard to experiential learning and active learning. Parikh et al. (2001) surveyed 103 medical students and found that individual feedback from tutors alongside peer and group feedback is most useful to students' problem-based learning. In one of my holistic competency development programmes, a near-peer mentoring scheme was organised for over 500 secondary schools, where the participating mentors were all university students or fresh graduates in Hong Kong (Chan & Luo, 2020, 2021a). Informed by findings from both mentors' interviews and mentees' written/video reflections, six effective and impactful mentoring strategies were

devised. These are (i). Creating opportunities to explore, act and reflect (ii). Helping realise and utilise strengths and weaknesses (iii). Building a sense of belonging (iv). Mutual respect (v). Encouragement and care (vi). Role modelling. For peer feedback to be valuable, the qualified source needs to embrace some or all of these six strategies.

Despite the benefits of peer feedback, there are also concerns about the quality and accuracy of the feedback provided (Dearnley et al., 2013). Nevertheless, as peer reviews involve a non-expert evaluating another non-expert, the feedback quality tends to be less satisfactory (Daalhuizen & Schoormans, 2018). Therefore, in some other experiential learning studies, peer feedback is jointly provided with teachers' feedback to enhance its validity. For example, a group of first-year student teachers in Australia received both peer and mentor feedback on their teaching practices and reported increased awareness of the importance of participating in critical dialogues as part of their teaching (Daniel, Auhl, & Hastings, 2013). Assistance in the forms of prompt questions and discussion guidelines inspires students to review their peers' work at greater depth, evaluate its quality more critically, undertake the review process in a more systematic manner, and consequently enhance their own learning (Frontczak, 2015).

External Partners Feedback

Industry and community partners are recognised as the most preferred and reliable feedback for holistic competency by future employers (Chan & Luk, under review). Equipped with relevant industrial knowledge and practical experience, external partners are able to provide credible insights, suggestions, and advice that are difficult for academic teachers to replicate (Muir & Laxton, 2012; Voss & Blackburne, 2019). Given the importance of experiential learning, it is vital to ensure that there are structured mechanisms for external partners to pass on their feedback to students.

Focusing on learning from experience, clients' feedback enriches students' perspectives and understandings of real-life work situations. Since clients are on the receiving end of students' actions and decisions, their feedback is a reliable evaluation of students' performance. In a service-learning environment, the service recipients have ample opportunities for one-to-one encounters with student volunteers, and are able to offer more comprehensive and specific comments on students' performance (Subramony, 2000). In some cases, clients' and project partners' comments are observation-based feedback (Harfitt & Chow, 2018; Isakovic, 2015), which can be used to inform academic instructors' evaluation of student achievement (Johnson & Brown, 2015).

Some stakeholders may not be well versed in feedback skills. For example, in service-learning programmes, external agencies do not normally have proper mechanisms in place to provide constructive feedback to their volunteers (Subramony, 2000). Hence, a partnership between on-site supervisors and academic instructors in providing continuous monitoring and feedback proves to be an effective measure to ensure the successful implementation of experiential learning

programmes (Eyler, 2009). In fact, the use of multiple sources of feedback, or 360-degree feedback, is well documented in experiential learning literature (e.g., Chilton, 2012; Miller et al., 2017; Powell & Bartlett, 2018), emphasising how different individuals such as academic teachers, peers, external mentors, and clients can offer valuable insights into different aspects of a learner's behaviour and performance (Subramony, 2000).

Feedback from Multiple Sources

A successful experiential learning programme should involve different qualified sources of feedback, as different sources bring out different perspectives from and on which students can critically reflect and improve. In a South Korean study, Shin et al. (2018) found students' commitment and motivation to serve are affected by informative feedback from teachers and project directors. In a work-based learning context reported by Dearnley et al. (2013), students also highly value the integration of feedback from peers, teachers and workplace stakeholders, and appreciate multiple sources of feedback. Dannefer and Prayson (2013) introduced a problem-based learning programme which further integrated self, peer and tutor feedback. Engaging students in their own experiential learning feedback could help them achieve better self-understanding and develop them into self-regulated learners (Dannefer & Prayson, 2013; Deeley, 2014).

6.2.3 Types of Feedback Practices

The literature has recorded many different types of feedback practices, including but not limited to written comments (Nicol, 2010), simple corrections (Mackey et al., 2007), and feedback talk integrated into daily teaching (Heron et al., 2021). However, when attempting to ascertain whether certain practices can be considered as a type of 'feedback', we note that the boundary between assessment and feedback is not always clear (Chan & Luo, 2021b). In our recent paper, we examined whether university teachers (N = 248) recognised six types of common pedagogical practices as feedback, and yielded mixed results. In particular, a lot of controversies surround whether 'grades' should be considered as a type of feedback or as an assessment result. In view of the convolution, Winstone and Boud (2020) emphasised the need to disentangle assessment and feedback, so as to "ensure that the legitimate purposes of both feedback and assessment are not compromised by inappropriate conflation of the two" (p. 1). It follows that feedback needs to be acknowledged as a meaningful act in itself, rather than as something that is used for grade justification or something that accompanies assessment. This substantiates my belief on outcomes-based approach as shown in Figure 3.2, in which feedback should be a separate component within the outcomes-based approach to the student learning model. Proper pedagogical design for feedback should be planned and not as an afterthought or conflated with assessment.

The six pedagogical practices discussed in our paper (Chan & Luo, 2021b) are listed below for readers' reference. We argue that the choice of feedback type in experiential learning should depend on a number of factors, ranging from the purposes of the feedback, the timeliness of the feedback required, the whereabouts of the qualified source(s), the relationship between the student and the qualified source, to the action required by the student upon receiving the feedback. (For the outcomes of the paper, please refer to the article directly. Note that as the paper does not focus on experiential learning, readers need to reflect on the suitability of these practices for experiential learning.)

i Stamps/Digital badges
ii Grades
iii Simple corrections
iv Rubrics
v Comments to the whole class
vi Generic exemplars
vii Personal comments

Experiential learning often occurs in locations outside the normal classroom and outside normal working hours. To overcome these challenges, and the challenge of providing prompt and constructive feedback, the advance in technology has come to our aid in enhancing feedback in the experiential learning scope. To name a few, in a service learning project reported by Deeley (2018), multiple technology-enhanced feedback provision channels were adopted, such as an online personal webpage space, video recordings, and audio-visual screencasting software. An earlier service learning study by Deeley (2014) also incorporated paper-based, PC-based, and mobile-based feedback. Deeley (2018) argued that the use of technology has allowed more detailed and speedy feedback, instead of relying merely on written comments; and the rich modalities (audio and video) have created more trust and deepened the bond between students and teachers by clearly communicating with them the tone, the expression and nuances in the given feedback. By doing so, the students can be expected to respond more actively to teachers' feedback and improve their learning. In Chapter 9, I will provide a case that demonstrates how technology can enhance experiential learning assessment and feedback, and alleviate teachers' workload.

6.2.4 Feedback Literacy

Similar to assessment and reflection, student and teacher feedback literacy are thorny concerns for useful feedback provision. Apart from enhancing interactive dialogues between qualified sources and the students (Ajjawi & Boud, 2017), student feedback literacy, i.e. "the understandings, capacities and dispositions needed to make sense of information and use it to enhance work or learning strategies" (Carless & Boud, 2018, p. 1315), is also necessary to achieve desirable feedback impact. Parikh et al. (2001)'s survey of 103 Canadian undergraduates

showed that many of the students did not find (or realise) the feedback received for their problem-based learning beneficial, and that is a clear sign showing us that more work needs to go into this area.

Student Feedback Literacy

In Carless and Boud's (2018) conceptual paper on student feedback literacy, there are four inter-related components for student feedback literacy, namely, appreciating feedback, making judgements, managing affect and taking action. Students who are literate in feedback appreciate the usefulness of feedback, actively seek external evaluation, possess the ability to critically evaluate their own work and others, and can manage the socio-emotions that arise from feedback and feedforward to their future tasks among other learning-oriented perceptions and behaviours (Carless, 2019; Carless & Boud, 2018; Han & Xu, 2020; Molloy et al., 2020).

Teacher Feedback Literacy

Teacher feedback literacy is defined by Carless and Winstone (2020) as "expertise and dispositions to design feedback in ways which enable student engagement and uptake". In their conceptual paper (Carless & Winstone, 2020), they introduce a framework for teacher feedback literacy. The framework comprises three dimensions: design, relational, and pragmatic. The design dimension is related to the ability to design feedback tasks, promote peer feedback and evaluation judgement, and use appropriate feedback tools such as technologies, guidance, rubrics and exemplars. The relational dimension is teachers' capacities to clarify the feedback purposes and processes, and demonstrate sensitivity and commitment towards supporting students and their learning. The pragmatic dimension, as the name indicates, is related to the actions that arise in the complexity of feedback. It "addresses how teachers manage the compromises inherent in disciplinary and institutional feedback practices" (Carless & Winstone, 2020, p. 1), which includes handling tensions, balancing the teacher-provided and student-generated feedback, and managing compromises in workload and stakeholders' satisfaction. Carless and Winstone (2020) believe that teacher and student feedback literacy should be developed in tandem. Boud and Dawson (2021) complement this view, suggesting that "students are dependent on teachers having a good appreciation of feedback and how it can be deployed successfully" (p. 2). They created a teacher feedback literacy competency framework that presents the competencies required of university teachers at different levels of responsibility, from course design to providing student feedback (Figure 6.1).

Feedback literacy, however, is not a natural ability. Students may notice a repeated pattern in the comments they receive, but without proper guidance, they may not be able to act on these comments or apply them in their future work, thus failing to close the feedback loop (Quinton & Smallbone, 2010). Opportunities for the development of such a capability need to be built into the design of an experiential-based programme to make the most out of its learning

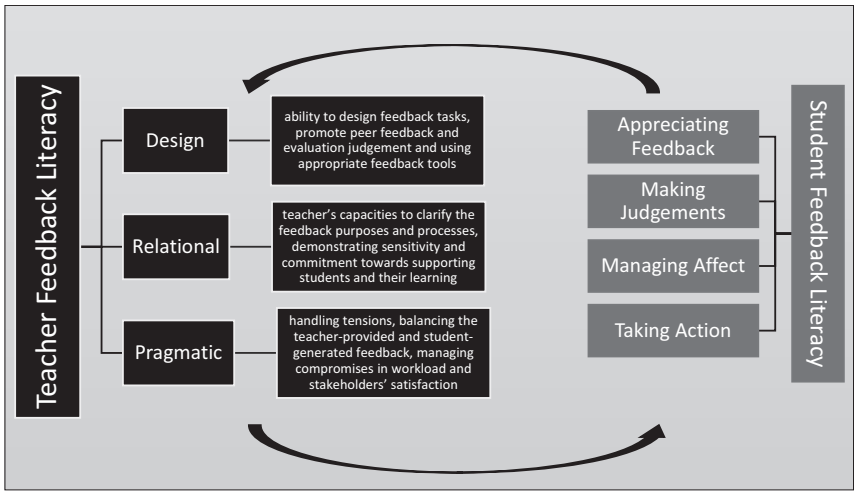

Figure 6.1 Teacher and student feedback literacy frameworks.

encounters (Moeller et al., 2019), specifically by allocating in-class time for reflection after feedback is given (Guthrie & Jones, 2012; Quinton & Smallbone, 2010). Guidance to students on the utility of feedback, in particular approaches for self-reflection and analysis of actions in relation to suggestions and constructive comments, is held as a key feature of a meaningful feedback process (Runnacles et al., 2013). Structured feedback which contains explicitly stated components for observation and reflection can also be used to assist students to attain a deeper level of self-evaluation (Lavanya et al., 2016) and as a result, enhance their feedback literacy. The ability to understand and utilise feedback empowers students as autonomous learners to take responsibility for their own learning (García-Jiménez et al., 2015), which is a desired outcome and central focus of experiential learning (Perrin, 2014). The above suggestions point to an urgent need to improve teacher feedback literacy in experiential learning, which in turn enhances student feedback literacy.

6.3 The Role of Feedback in Building Evaluative Judgement: Opportunities in Experiential Learning

Another important focus in feedback research is how feedback can be implemented to support students' evaluative judgement development in experiential learning. Evaluative judgement is defined as "the capability to make decisions about the quality of work of oneself and others" (Tai et al., 2018, p. 467), the importance of which has been well-recorded in higher education. However, in recent years, there has been revived attention to researching evaluative judgement through a pedagogical lens, which has inspired a lot of new thoughts on the curriculum, such as how feedback may have the potential to develop student evaluative judgement but has yet been

effectively implemented for this purpose (e.g., Bearman et al., 2021; Boud et al., 2018; Ibarra-Sáiz et al., 2020). With a focus on developing evaluative judgement, feedback is expected to go beyond students' work per se, and assist students in calibrating their judgements of work by critically engaging with quality and standards (Tai et al., 2018).

Evaluative judgement is not a particularly useful concept in judging factual knowledge that has rigid boundaries between right and wrong, but valuable in messy and authentic contexts where quality is difficult to describe and often subjective such as in experiential learning. Readers can refer to the work of Tai et al. (2016) and Bearman et al. (2021) in medical training settings, as well as Gladovic et al. (2021) in construction work, for some insights on how feedback can support students in developing evaluative judgement in experiential learning. Meanwhile, as we know, holistic competencies are often central in experiential learning. Readers interested in understanding evaluative judgement of these competencies can refer to some of the work led by my postgraduate student, Ms. Jiahui Luo (Jess). An expanded framework on evaluative judgement of holistic competencies has been proposed based on a 3-round Delphi study with 14 international experts, with plenty of good insights regarding the role of feedback in shaping one's evaluative judgement (Luo & Chan, 2022a). For those who are looking for a more "handy" guide regarding this topic, another paper of us (Luo & Chan, under review 2022b) may be helpful as it discusses assessment and feedback design from a teacher-oriented perspective.

Conclusions

Empirical studies that focus specifically on the impact of feedback in experiential learning contexts are relatively rare, and when the use of feedback is reported, the findings appear to be inconsistent. In some studies, feedback was shown to enhance learning outcomes (e.g., Cadotte & MacGuire, 2013; Konak et al., 2014; Lavanya et al., 2016), whereas in others the findings were less conclusive (e.g., Alizadeh et al., 2017). Commenting on similar observations in their writing, Steelman et al. (2004) conclude that the mechanisms of feedback are poorly understood. Hence, the use of feedback in experiential learning, particularly in terms of how post-secondary students receive and utilise feedback to improve learning, requires further research.

This chapter synthesises important components of feedback mechanisms and related issues from relevant literature on experiential learning in higher education. The discussion shows that the four components—quality of feedback input, qualified sources of feedback, types of feedback practices, and feedback literacy—are key factors that influence student uptake of feedback and subsequently the utilisation of feedback for work, learning and life enhancement. In experiential learning, feedback also has immense potential to assist students in developing their evaluative judgement. Hence, the components and their sub-components provide a framework for understanding what an empowering feedback mechanism entails and how it can be effectively embedded in experiential pedagogy in higher education.

Questions to Ponder

- Are you qualified to provide feedback?
- What kind of feedback practices have you been using? Do they work?
- Do you know the differences between critiquing and criticising?
- If you were your students, what kind of feedback will you be asking for in experiential learning?
- How can you provide students meaningful feedback in experiential learning that you know they will understand and use?
- How do you build relationships with your students in order for them to feel comfortable with your feedback?
- How do you help or train other stakeholders in the programme to provide constructive feedback in experiential learning?
- How does evaluative judgement begin?

Personal Reflection

A few years ago, I wrote an article in the Times Higher Education proposing that every academic staff should have experience in industry, and suggested that maybe every few years academics should take leave to take on an industrial internship to boost their holistic competencies and industrial network. This will help teachers to become more qualified sources of feedback for experiential learning. A very daring controversial idea, what do you think?

Read it here.

http://tlerg.cetl.hku.hk/wp-content/uploads/2018/02/Work-experience-should-be-a-job-requirement-for-academics-_-THE-Opinion.pdf

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7 Ethics in Assessing Experiential Learning

> The exact meaning of ethics is ineffable, but as an educator, we should at least know how to role model with integrity, honesty, fairness and responsibility. We should uphold the code of ethics to protect the rights of the students even when we design the assessment.
>
> – Chan, CKY

Introduction

Experiential learning is a powerful pedagogical tool. Apart from its active learning engagement power, it inherently allows students to engage on more than just a cognitive level, but also on personal, emotional, and behavioural levels. And it is exactly because of these richer yet uncertain engagements that teachers and designers of experiential learning activities need to pay special attention to the ethical issues that arise from experiential learning assessment.

Although my intention for this book is to focus on the assessment of experiential learning, it is difficult to separate the ethics of learning activities from assessment. Often, experiential learning teachers and designers overlook the basic ethical dilemmas that are inherent in teaching. Some of these ethical dilemmas are innate in experiential learning within its "experientialism and experimentation" (Ward & Gomolka, 1989), and these dilemmas affect both the pedagogical approach and the assessment.

Most ethical studies in the context of experiential learning are associated with how experiential learning can enhance student's awareness and understanding of ethics. A study by Teixeira-Poit et al. (2011) presents a useful three-step exercise to teach research ethics via experiential learning strategies. The three steps include, firstly, providing students with an overview of selected ethical guidelines, after which they are presented with a fictional case study with an example of a researcher violating ethical guidelines, and finally, an interactive exercise, comprised of a role-playing activity, is facilitated. In another study by Sims (2002), he suggested educators to pay more attention in the design of systematic and analytical debriefings in the experiential learning exercises for business ethics courses. Such debriefings can "insure an integration of the experiences with

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concepts and applications to outside situations so that appropriate generalizations can be made" (Hunsaker, 1978, cited in Sims, 2002, pp. 181–182). These are useful techniques for encouraging students to pay more attention to ethics in their field of study or in their future profession. However, those techniques are not addressing ethical issues inherent in experiential learning that students, teachers or other stakeholders in experiential learning may face. Under neoliberalist education, there is great pressure from different stakeholders and their demands, such as the emphasis on authenticity and relevancy to the real world, transferring more responsibilities to students for equal partnerships, and developing lifelong learning in ill-defined problems, and experiential learning has become the solution to many of these demands. Under such pressure, we may have grown complacent in acknowledging the ethical issues that arise from the genuineness of experiential learning.

In this chapter, I present some of the ethical dilemmas that teachers and designers face in experiential learning. Ethics is not simply about right or wrong, and it depends on many factors including one's culture, religion, and beliefs. Often, the standards are based on a society's accepted beliefs and principles (the norm) under which people live and work in harmony with one another. It is not always easy to identify these ethical dilemmas; thus, case studies will be provided to better inform teachers about them in the context of experiential learning. Finally, suggestions will be included to help teachers and designers of experiential learning to overcome some of these concerns.

7.1 Ethics is …

> Ethics are beliefs and principles that an individual possesses to guide oneself to evaluate what is right and wrong in an environment. In short, it is the imaginary moral line that one would have internally to uphold their actions.
>
> Chan, C.K.Y. (2021)

These values are usually an extension of one's personal values such as honesty, responsibility, and integrity, and are unique to each person based on one's family, culture, environment, religion, and ethnicity (Poorchangizi et al., 2017).

7.2 Ethical Dilemmas in Experiential Learning

Teacher's Code of Conduct

Most university teachers are unaware of the code of ethics as a teacher. While professional development workshops on research ethics are often compulsory for university teachers, teachers' code of conduct are rarely covered in any workshop. Universities also do not require teachers to sign a code of conduct. In this section, I will discuss the ethical dilemmas often found in experiential learning for teachers to be more aware of their code of conduct as a teacher.

Forced and Optional Participation

Experiential learning provides student with meaningful learning opportunities. However, some students may opt to avoid these activities as they may not wish to put effort into developing non-disciplinary or non-academic-related skills, especially when teachers may use unconventional assessment methods which could make it harder for them to achieve high grades. Some experiential learning courses are compulsory, and students who are forced to participate may not share the same enthusiasm and emotion as those who hope for a meaningful experience. Even for those who enrol voluntarily, we may not have evaluated the suitability of the assigned activity for each individual participant. Say a student grew up in an orphanage and was asked to share their success story with others from a similar background. As their teacher, have we considered the student's feelings? Yet, teachers' decisions of who should be involved in and who should be exempted from the activity can create an ethical dilemma. Kate Trimble, a senior associate dean and director of the Office of Experiential Learning at MIT, runs an experiential ethics course, and she agrees (Durant, 2020) that "what is not going to work is for students to feel like ethics is being pushed on them" and ethics is like "a muscle that you develop over time, with repeated exposure, in different contexts, and by talking to people who have different perspectives and experiences than you do."

Teacher's Biased Experience, Perception and Expectation

Every teacher has their own perception and expectation of how they teach. Their experience also determines what they anticipate their students to achieve. While such subjective perspectives can be minimised within traditional classrooms due to common standards, these biased expectations and perceptions can create far greater risks and issues for students in experiential learning. For example, as part of the assessment in an entrepreneurship course, teacher arranges students to pursue an actual entrepreneurship competition organised nationally by business and venture capital organisations. It requires each team to develop a business proposal, a presentation and the prototype of the product based on a specified theme. The teacher provides a template for the business proposal, insisting that all students must use the same template for ease of assessing, and students who do not follow the guidelines will be disbarred from entering the competition as it requires a teacher's nomination. Students may question the accuracy of the business template as compared to the expectations of the judges who are genuinely from the business sectors, and it is unethical for students to be punished and prevented from further participating in a meaningful learning experience due to subjective preferences.

Honesty in Assessment

Assessment in experiential learning can undermine the meaningfulness of the activity. Even if an assessment is designed to be authentic, it may not necessarily

elicit truthful responses. For example, for compulsory reflective assessment, students may fabricate their reflection to hide their true feelings, as they may feel pressurised into producing an assessment product that is acceptable, rather than truthful (Chan & Lee, 2021; Cotton, 2001; Newcomb et al., 2018).

Student Evaluation and Teacher's Ethical Responsibilities

Experiential learning can produce great student outcomes to showcase as evidence of student learning or used for research purposes. However, teachers need to be reminded that they have an ethical responsibility toward the students. Teachers need to get consent from the students before revealing their work to external audiences.

Emotion Associated with Experiential Learning Assessment

Strong personal emotions often arise from experiential learning experience. These sentiments and reactions can be so intense that they change a student's self-perception. Teachers sometimes neglect these important emotions (which could also be intended outcomes) and set inappropriate assessments for the experiential learning exercise. Reflective assessment is one of the most widely used assessment approaches in experiential learning, which can be effective, but may sometimes be too invasive and "demand confession and self-surveillance as evidence of progress and learning" (Ross, 2011, p. 115).

In a nurse education study by McCarthy et al. (2018), they described a study on students' self-reported reflective assessment in which students reported alleged malpractice with the clinical staff. This has caused conflicts between clinical and academic staff. Thus, implications need to draw in place to avoid any conflicts and reprimands.

Student's Self-Disclosure

One of the main ethical issues arising from reflective assessment in experiential learning is the vulnerability and disclosure of personal information that is expected from students. As previously mentioned, literature (Chan & Lee, 2021) has repeatedly found that students feel wary or adverse towards the prospect of their reflections being read and assessed by their teacher, peers, or supervisors. There are risks associated with reflections and it can be harmful to students when they reveal or discuss their weaknesses (Hickson, 2011), or when a negative focus is taken, which, in turn, damages their self-confidence (Knowles et al., 2001).

Teachers also face ethical dilemma when students disclose abuse, malpractice and negligence in their reflection. Their position may cause them to struggle between confidentiality and ethics as well as legal and societal responsibilities (Cleary et al., 2013).

Accessibility of Reflections Made in Public Spaces

Public spaces such as virtual social network spaces are also a concern for experiential learning assessment. Both Ross (2011) and Smith and Trede (2013), pointed out that online journaling has become increasingly influenced by the trends of blogging, which is associated with a degree of self-promotion and social media presence, and is not necessarily reflective. The emotional challenge and authenticity of reflections made on the online platforms, the extent to which the reflections posted and shared on such platforms may affect genuine reflectiveness, and of course, the privacy and safety of students are all part of this concern. It is also difficult to know if the students are really reflecting or if they are simply seeking attention, knowing all their friends will be reading their entries? This brings back the issue on honesty mentioned above. Teachers should not overlook the need for social acceptance and the effect of peer pressure when they design the assessment.

Complex Relationship

The relationship between students, teachers and other relevant assessors in experiential learning is a complex one. There can be passion, excitement, sorrow, friendship, sympathy, empathy and many other emotions developed between teachers, supervisors, mentors and students. These bonds become intensely complex when assessment (a grade) is required. For the assessor, questions in mind might include:

- Am I being fair to give them a good grade or is it because they are my friend?
- Are they being friendly and helpful because they know that I am the assessor?

The power dynamics between all the different stakeholders may also cause challenges. Students may have internal struggles such as:

- I don't agree with my work supervisor (in an internship). I don't know them at all, they are never around, I have only met them once, but they are going to do an appraisal for my internship, should I just go along with their ideas in case they jeopardise my grade?
- Personal reflections are private, why should I share them? But I have a good relationship with my mentor, maybe it is ok to share with them?

7.3 Case Studies in Experiential Learning

In Chapter 1, we stated that in its simplest form, experiential learning is learning by doing, and for ethics in experiential learning, understanding must also be generated through experience. However, it helps to present some case studies that allow you, the readers, to ponder through and realise that the actual standards for professional values and ethics in experiential learning may differ greatly between you and me, depending on our culture, religion, beliefs, discipline backgrounds, political views and many more. I am not presenting any right

or wrong answers here, but I hope that by presenting these case studies, you can ponder through them (or perhaps discuss with your students and colleagues) and make your own judgement. These case studies will be useful in professional development workshops for academic developers to help teachers to become more assessment literate in experiential learning.

7.3.1 Case Study 1 – Internship

For an internship course, students are asked to put together simple daily notes (as evidence) and use the notes to prepare a reflective essay of 1,000 words to be handed in as the final product for the course. This will be followed by a feedback interview with both the internship supervisor and the teacher. The reflective essay should focus on the outcomes that the students achieved, the challenges they overcame, the type of career they want to pursue and the kind of person they want to become.

A female student who completed an internship at an international consultancy company submitted her reflective essay. She has written about her insights in a professional environment and how she applied her knowledge from her courses in her work. She was proud that she built up resilience during her time at the company as she had to overcome a major hurdle that has seriously troubled her. She did not explicitly mention the major hurdle, but she implied that she was sexually harassed by a senior employee in the company. In the reflective essay, she did not go into details about the actual incident; instead, she reflected on her own behaviours, how she may have done differently next time, and wrote very professionally on how she sees herself in the future if such an opportunity in one of these international companies arises. She emphasised that she now realises that the world she lives in is a dog eats dog world.

The course coordinator who received the reflective essay did not teach the student previously, there has never been any previous encounter with this student. No sexual harassment report has been filed. The teacher does not know how to proceed. If you were the course coordinator, will you do one of the below options?

1. The teacher can treat the reflective essay as a fiction, ignore the actual content and mark it based on outcomes developed. Then the teacher can invite the student for an interview (without the internship supervisor) to avoid any discomfort.
2. The teacher can invite the female student for a private conversation and discuss with her on the situation. If the teacher is a male, a female staff should be present.
3. The teacher can inform the relevant university authority offices such as student affairs, counselling office and faculty dean to discuss the seriousness of the situation. This approach may cause a lot of discomfort to many stakeholders and therefore it needs to be handled with sensitivity.

- The female student will need to be interviewed (by relevant authorities) to investigate if the actual incident has occurred. The female student may not wish to disclose the information for numerous reasons. She may also have (or not)

fabricated the story for a more interesting reflective essay. Parents may need to be involved. The student may sever her opportunity to receive an offer from that and other international companies indefinitely.
- The internship supervisor may also be invited for an interview (by relevant authorities), and he may be penalised by his company for not knowing about the incident and not conducting his job in a professional manner.
- The relationship between the university and the company will be damaged.

What are the Ethical Dilemmas in this Case?

- Is the teacher obliged to report this?
- Will there be disclosures that the student will later regret sharing?
- Will this sabotage the student's career opportunity in life?
- Would this become problematic for the teacher? For example, their relationship with the company or faculty heads?
- Would the university be liable if harm comes to the student as a result of breaches?
- Is a reflective essay an appropriate assessment for an internship?
- How important are the truthfulness and the facts of the reflective essay?
- Is it ethical to expose the student to the issues above under an imbalanced power relationship?

7.3.2 Case Study 2 – Non-Governmental Organization (NGO) Community Service Project

To obtain a social science degree at a university, students must pursue a five-week community service project as it is a compulsory part of their graduation requirements. Students may opt to travel overseas or stay locally and work with a congressman, in homeless and health organisations, legal areas, women's services, start-up organisations, refugee or immigrant services. The course coordinator cannot assess students' everyday work or projects as the teacher cannot oversee all the projects. Thus, the community supervisor will assist, and a postgraduate student will act as a mentor. As part of the assessment, students are asked to use videovoice (similar to video diary) to document and share the lived experiences of their clients to raise the clients' consciousness and to influence decision-makers to affect community-level change (Catalani et al., 2012; Chavez et al., 2004).

A male student opted to travel to Indonesia and work with the local Chamber of Commerce. As part of the project, the student must live with a host family in Indonesia in order to immerse in the culture. Every host family receives a fee from the university. The student was treated well during his stay, but he was petrified with the family's own living conditions. He also witnessed some brutal behaviours towards the females by the male parties in the household. He also realised that bribery with the local government including the local Chamber of Commerce forms part of the business tradition. The student was able to video record and interview many instances with the family and the local businesses.

Some of the locals described the corruption process in details. The student has received informed consents from those in the videos, he has also agreed not to disclose their true identifications and redact any sensitive information.

The student received top marks for his project and the course coordinator wanted to use the case as a champion piece to showcase community service projects in the social sciences discipline at the university.

What are the Ethical Dilemmas in this Case?

- Do the individuals truly understand what an informed consent is?
- Would the true identifications of the individuals in the video cause harm to them?
- What would be the consequences if the true identifications or information about the corruption is publicly promoted?
- Would there be any negative emotions from the student?
- Is the teacher setting a good role model for the student by using this project as a showcase for his own benefit?
- Is there an emphasis that the mark for the project is more important than all?
- Is it ethical to expose the individuals to the above-mentioned risks under the circumstances?

7.3.3 Case Study 3 – Legal Clinics

Many universities have launched legal clinics to provide pro-bono legal advice for the public. Services are provided by law students which presents them the opportunity to get hands-on with real legal cases and clients. The legal clinics may provide legal consultation services in areas such as refugee and human trafficking, migration, disability rights, equality rights, innovation and entrepreneurship, family law, inheritance, criminal actions, and property and employment law. Students will be randomly assigned to different cases to maximum their exposure to different areas of law.

Students will be assessed via observation by the supervising staff of the legal clinic and the clients on their professional attitudes and competence when they handle clients' cases. Students are also required to present a five-minute case study on what they have encountered at the legal clinic to share with the class, which will be followed by a Q & A session. Both teachers and students will act as assessors for the case study presentation.

A female student of Indian ethnicity was assigned to a human trafficking case in which the female client, the mother of the victim was accused as the primary familial trafficker in this case. At the Q & A session, it was found out that the female student came from a family with strong traditional values and where arranged or forced marriage is not uncommon. The Indian female student is against such traditional values.

What are the Ethical Dilemmas in this Case?

- Is the client the best assessor on professional attitudes and competence in this case?

- Is presentation an appropriate assessment approach in this case?
- Is Q &A session necessary?
- Will the female student be harassed by other students who simply do not agree with the female student on how the case was handled?
- How can the teacher ensure that the class handles personal information maturely?

As mentioned, I invite you to work with your students and colleagues to deduce your own standards in ethics. In the next section, I will provide some suggestions on how to go about dealing with ethical issues in experiential learning assessment.

7.4 Suggestions to Overcome Ethical Issues in Assessing Experiential Learning

Trusted Environment

- Propose "a learning environment and a portfolio that values a reflective dialogue with a trusted person in an open and safe way" (Driessen, 2017, p. 225) would help solve some ethical issues in reflection. For example, having trained senior students as mentors can help with a trusted environment (Chan & Luo, 2020)
- Organise regular meetings with students either individually or in small groups to build trust and safeguard student wellbeing (Stewart & Richardson, 2000)
- Call for more structured guidance and support network for assessment design in experiential learning with clearer rationale (Sutton et al., 2007)

Professional Development for Teachers and Students

- Code of ethics and professional development workshops on ethics for all university teachers teaching at the university
- Use cases to explore ethical questions in journal writing and provides principles for using it in educational settings (English, 2001);
- Explain the benefits of experiential learning to students and how the assessment may help them reframe their experiences. It is essential to prepare students for the practical and emotional difficulties that they might experience
- Engage in an ethical dialogue about the use of assessment practice

Assessing Experiential Learning

- Enhance students', teachers' and assessors' assessment literacy in experiential learning

- Use formative assessment in reflective journals (Creme, 2005). Reflective assessment can be a process instead of a product; use simple pass/fail grade instead of actual percentages if it is to be assessed (Stuwart & Richardson, 2000)
- Invite students to reflect on fabricated professional scenarios, so they do not have to reveal their actual experiences (Hargreaves, 2004)
- Ensure teachers design assessments with ethics in mind. The ethical dilemmas in Section 7.2 can be used to guide you through
- Let students know what, who, how, and why are you assessing
- Depend on the activity and the relationship, have teachers or the public NOT directly involved in the course may sometimes be more suitable to conduct the grading (Sutton et al., 2007)
- The locus for reflection is not "in" the individual (decontextualised), but "in" the total event (Ross, 2014). For example, students should not be graded based on their individual experiences or feelings, but on what they have developed, improved and become
- Enhance assessors' feedback skills

Recommended Guidelines

- Devise a policy or guidelines for students and colleagues on how best to proceed when ethical concerns arise in student assignments; attend to all rights of concerns that may arise
- The ethical policy or guidelines should be presented to the students at the beginning, providing clear direction on what is expected and required, and on the importance of adhering to the ethical principles, particularly on confidentiality and anonymity. If personal disclosure is expected to share among the class, students in the class need to adhere to the rules completely
- Develop a policy for disclosure
- Develop a referral network with university support services, making them easily available for students
- The policy or guidelines need to provide clear procedures on how teachers should address ethical ambiguity (McCarthy et al., 2018), given many ethical dilemmas are unclear, and often not necessarily black or white. For example, is it ethically wrong to ask a student who has experienced hardship in their life to share their stories, would that be inconsiderate, or is it a test of resilience and maybe even a triumphant moment for the student?

Conclusions

This chapter provides a review of the empirical and conceptual literature on ethical issues concerning experiential learning in higher education. To help educators to be more aware of ethical issues when designing experiential learning assessments, case studies were introduced. Some of the dilemmas presented in the case studies cannot be easily eliminated, but experience, good faith and practice on our part can help to avoid some of them (Figure 7.1).

Figure 7.1 Imitation of a teacher of the lady justice (Drawing by Aisling Colloton).

Question to Ponder

For this chapter, I only have one question for you to ponder.

- Always raise the question to yourself, if you were in their shoes, is this acceptable to you?

Personal Reflection

My quote at the beginning demonstrates a very important point, how we as educators act as role models. Students are accustomed to follow, to depend on and to be influenced by teachers. Our roles are not just about teaching, we should be modelling for our next generation the act of integrity, honesty, fairness, responsibility and principles.

You can choose to be the educator shaping our society to be a better world. I really like Aisling Colloton's imitation of a teacher of the Lady Justice.

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8 Assessment Cases around the World

According to Oscar Wilde – 'Experience is the hardest kind of teacher. It gives you the test first and the lesson afterward.' For teachers, we may not always have that luxury to test all our courses, Thus, we borrow ideas from authentic cases, combine with our experience and reflect on NOT just our experience but others.

– Chan, CKY

Introduction

In this chapter, I put together many excellent cases of experiential learning courses and activities from universities around the world. These cases focus on the learning outcomes and assessment approaches used. Each case consists of a brief description, the desired learning outcomes, the teaching and learning activities and the assessment approaches (and most of the time, the weighting of each approach, the aligned outcomes, the targeted holistic competencies and sample rubrics are included). In addition, the teacher's background and motivation, the challenges they encountered and the stories from students who participated are also put together. There are also a lot of videos and online references attached to each case. For ease of access, I have included our Assessment Resources weblink (https://ar.cetl.hku.hk) and a QR code which are connected to the video of these cases.

These selected cases are from Hong Kong, Singapore, Australia, New Zealand, Canada, the United Kingdom and the United States with some faculty-based and some cross-disciplined. As each experiential learning course and activity is unique and often with individual characteristics, hopefully, teachers can borrow

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ideas from the different cases and build their own unique assessment. Due to space constraints, I could only display 12 case studies here, but you can find more information on the website using the QR code above.

8.1 Case 1: "Transformative Business Immersion in Developing Economies", Community Services, Business School, University of Hong Kong, Hong Kong

Offered in summer term, the course "Transformative Business Immersion in Developing Economies" (BUSI, 2816) is a community-service trip blended with a business consultation practicum. This course provides students with a total immersion experience in an unfamiliar geographical, economical, and social environment. After a week of preparation at the University of Hong Kong (HKU), students travel to a pre-selected location in the Philippines where they consult with local micro businesses, transferring fundamental business principles to resolve specific issues that the company faces. Students live with local families in a homestay arrangement, so as to quickly understand the local culture, customs and business practices.

After initial scoping trips conducted by the course developer, the trial run of this course was completed in 2015 when it was only open to 15 students in the Business School. It has subsequently expanded to two subclasses per summer (in June and in August), accommodating a total of 60 undergraduate students from any disciplines of Year 2 or above.

Distinctive Features:

- Enabling in-situ experiences of the developing world
- Innovating solutions to real-world problems for micro-businesses
- A combination of cultural immersion and business practicum

Designed Learning Outcomes (LO):

I Perform a detailed analysis of the operations of a small business in an emerging economy;
II Apply theoretical knowledge learned in past courses to transform it to fundamental business;
III Analyse the effectiveness of past course consulting engagements through interviews and data gathering;
IV Develop a deeper, more thoughtful understanding of the culture, economy and environment through daily interaction with host families.

Coursework Teaching & Learning Activities:

Pre-trip preparation:

- Self-study (with a reading pack) [20 hours; Week 1]
- Class discussion [40 hours; Week 1]

Business trip in the Philippines:

Week 2 – intensive information gathering & investigation
Week 3 – creation of a written report on the business principles and specific issues to focus on with proposed solutions
Week 4 – plan execution with local business manager/owner

- Interviews & meetings [30 hours; Week 2–4]
- Analysis & report writing [40 hours; Week 2–3]

Source: HKU (2017) BUSI2816 Course Outline.

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Analysis of previous consulting engagements	Students conduct interviews and data gathering to determine the impact and effectiveness of past course consulting engagements.	20%	I. II.	Formative	Collaboration, Communication, Critical thinking, Study skills
A2	Business Analysis and Solutions Report	Students are required to produce a detailed report on the sector and business, and their ideas for solutions or improvements.	40%	I. III. IV.	Summative	Collaboration, Numeracy, Problem-solving, Study skills
A3	Video Report	Students prepare a photographic and/or video report of their time abroad.	20%	III. IV.	Summative	Communication, Creativity, IT
A4	Reflective blogging (weekly)	Students actively contribute to a group blog that will share their experiences with the homestay and with their selected business projects.	20%	IV.	Formative	Communication, Self-management

Assessment Type

Both formative and summative assessments are employed. The formative assessments set out the initial state of practices and keep track of field progress in multiple dimensions. The summative ones summarize cultural and academic learning respectively.

Main Assessment Areas

Community Virtues: The course design enables cultural exchange and insights to life within a developing economy. Students' interactions with host families and local communities are part of the assessment standards, which can be evidenced with video reports and reflective blogging (A3 & A4). Students are expected to show their sense of empathy and fair reciprocity while being interactive and open-minded. The service-based learning hopefully contributes to the improvement of not only a single business, but also the economy of the town that the class visits. In the trial run of the course in 2015 and in June 2016, the group stayed in Jordan, Guimaras; in Aug 2016 and 2017, the group turned to Jagna, Bohol. These are two towns separated by different islands in the Philippines, about 300 kilometres apart. The batches of student visits thus contribute to different local communities with their business service learning.

Self-management Skills: Adaptive self-management is vital as students have to adjust to an unfamiliar living situation "outside of their comfort zone" with few infrastructural supports and high demands of independence. As reflected in video reports (A3), students are "pushed to be at their best." They are expected to take initiatives in proposing new ideas and handling problems. How they deal with everyday situations abroad can be recorded and assessed in their reflective blogging (A4). Through living and working abroad, students have realized the importance of "self-analysis and introspection," which are indispensable traits of personal and career development (Lefler, 2016).

Problem-Solving Skills: Both problem identification (A1) and proposed solutions (A2) are assessed. Students need to deal with unforeseen problems when they help the local businesses execute the proposed plan, such as situations of reluctant business owners, challenging home stays with compromised bathrooms and lack of air conditioning in constantly high temperatures, or simply the slow internet. When students get to identify the particular problems that local businesses are facing, some of them realize that it could have been a "make-or-break situation" for the business

owners (Lefler, 2016). The problem identification process is thus also an analytical understanding practice.

Communication Skills: An essential requirement for providing mindful consultation to local businesses is to properly understand their needs and operational issues in their perspectives. In addition to expressing oneself effectively, the student needs to be a patient listener to understand the indigenous context. Interviews with local businesses and class meetings are arranged to investigate the situation, where communication is the key technique. Students have identified that "the technique of question asking and rephrasing" is important in communication (Lefler, 2016). Analysis reports (A1 & A2) are compiled based on data/information gathered from the field through students' proactive communication. Moreover, how the student interacts with local community and the host family is part of the grading standard.

Collaboration Skills: Throughout the time abroad, students work in teams. Students collaborate with each other in field investigation to perform business analysis, in writing up reports (A1&A2), and in producing a video report (A3) that summarizes work-life experiences abroad. In the expanded course, normally eight students work together in one group, as it is practical to learn how to steer up and manage group dynamics to maintain productivity. Students can itemize the assigned tasks and divide the work among team members to achieve optimal outcomes.

Knowledge Application: During the course of consultation, students get to see all aspects of a business and how it functions. Fundamental business conundrums, such as volatile local operations with challenges resulting from macro-economic conditions, are presented to the students at a small enough scale, so they can manage to wrap their heads around the concept. The students are then able to apply their formal training and education to the real world, as well as to reflect on their theoretical understanding with practical experience borrowed from the owners and employees (A2).

Reflection: The photographic/ video report (A3) is due two weeks after the students return to Hong Kong, allowing sufficient time for them to further reflect on their encounters. The weekly blog posts (A4) are required to be reflective in nature, covering different areas of work/life abroad, from consulting engagement and homestay, to cultural learning. Students are given ample "time and space to deepen their understanding of their experience and how it fits into their worldview" (Lefler, 2015). The experiences in the developing world make the students reflect on the meaning of life and value of happiness.

Assessment Standards/ Sample Rubrics for some of the assessment areas

	Indicators	*A range*	*B range*	*C range*	*D range*	*F*
All Assessments	Originality	Demonstrate evidence of original thought	Not necessarily original in their thinking	Most of their information is derivative	X	X
	Critical thinking	Demonstrate strong analytical and critical abilities	Demonstrate evidence of critical and analytical thinking	With rather little evidence of critical thinking;	There is no evidence of critical thinking.	X
	Knowledge application	Demonstrate a thorough grasp of the principles from background reading and analysis;	Show adequate grasp of the principles from background reading and analysis;	Demonstrate evidence of a reasonable grasp of their subject	Demonstrate evidence of being able to assemble the bare minimum of information, poorly digested	Demonstrate evidence of poor knowledge and understanding of the subject; Work fails to reach degree level.
	Effective Communication	Should demonstrate excellent organisational, rhetorical and presentational skills.	Should demonstrate strong organisational, rhetorical and presentational skills.	Should demonstrate fair organisational, rhetorical and presentational skills.	Not very well organized in presentation	A lack of coherence and organisation, and answers are largely irrelevant.
	Community relations	Demonstrate a willingness to interact and share on an equal footing with members of the local community.	Demonstrate a reluctant willingness to interact and share on an equal footing with members of the local community.	Demonstrate an unwillingness to interact and share on an equal footing with members of the local community.	Demonstrate an aversion to interact and share on an equal footing with members of the local community. Remain isolated and/ or exhibit evidence of disruptive and unfair treatment of the local community or host families.	Demonstrate an extreme aversion to interact and share on an equal footing with members of the local community. Remain isolated and exhibit evidence of disruptive and unfair treatment of the local community or host families. Disrupt the experience for other students.

Teacher's Stories

Beau Lefler

Professional Engagements

After obtaining a Juris Doctor in the United States, Beau practiced law before joining HKU. He now primarily teaches business law and company law and advises students in the Law program of Bachelor of Business Administration.

After soliciting funding from HKU's Teaching Development Grant and the Gallant Ho Experiential Learning Centre, Beau began running the course, this was since 2015.

This highly immersive course brings together Beau's goal of enabling students to understand real life and the developing world while providing them an opportunity to use their educational training to do something valuable that altruistically benefits others. During their time overseas, he also wants his students to develop a consciousness of different cultures and learn how to take new perspectives while having fun. As noted by Lefler, "I'm interested in helping the students understand real life; I want them to understand [the] developing world, cause we're quite arrogant sometimes in the developed world" (May 2016, teacher interview).

Motivation

In recent few years, Beau has seen a growing number of students seeking opportunities to do something beneficial and worthwhile with their careers, but they are often unable to find the right outlets. Combined with Beau's interest in development economics – specifically about how countries can be helped to develop and to offer better living conditions, this status quo motivated Lefler to design and set up the Transformative Business Immersion in Developing Economies course.

Keeping students' costs to the minimum, Beau also seeks private corporate sponsorship to support the future operation of the course. To not close off the opportunity to students who are frustrated financially, sufficient funding needs to be procured.

Challenges

It is difficult and time-consuming in finding enough host families and local businesses within the same remote area to make course arrangements with. While the families can be reimbursed for the costs of hosting the students during their stay (e.g. electricity, food, mosquito nets and cots for the students), additional money exchange for these arrangements is

avoided as it might ultimately take away the true virtues of the homestay experience – to build meaningful relationships. Destinations where there is no need for translators are prioritized, where closer relations with host families and businesses can be built without additional language barriers.

Students' Side of Stories

- "We tried to identify the problems that Z-Network (a local shop selling and servicing computer parts) faced, but before that we needed more information. Unlike in Hong Kong, nothing was available online, so we had to go to (government) offices, shops and schools, and asked questions. We collected names, contacts, addresses, and anything else we could find. After discussing with professor, and other teammates, we found that Z-Network needed a strategy to target new customers, and to maintain client relationships. We developed a marketing plan, after piloting a few different strategies. We also developed a customer database which Z-Network can utilize to maintain and initiate customer relationships." (Video Project, June 2015)
- "Throughout my stay, I felt like I was really a part of the host family, because they look after me like I am one of them. From night swimming to slaying a chicken, they have introduced me to things that I have never experienced before. Staying in Philippines was frustrating at first, the slow internet, compromised bathrooms, constantly high temperatures. But once I got over these superficial circumstances, I was able to view my life from an objective perspective that I could not gain in the busy life of Hong Kong." (Team Blue, Video Project, August 2016)
- "We learnt to look at small businesses at a different perspective, and to understand their challenges before providing feasible recommendations. We helped businesses with simple accounting records, and the designing of logos and banners, in hope to improve their profitability and the economy of the town. This course has not only provided a platform for us to practice our business knowledge, it also allows us to go beyond just building client relationships to establishing valuable friendships in the process. This is indeed an unforgettable learning experience." (Group 2, Video Project, June 2017)
- "It's been a crazy ride, each of us with varied experiences. We all had problems like reluctant business owners, or challenging home stays, but I'd say we did a pretty good job overcoming them. And it's these challenges that have enriched us." (Group 1, Video Project, June 2017)
- "Entrepreneurship is no joke, most of these businesses (referring to the ones in the business center of Jagna) don't even know the meaning

of this word but they live it in its truest form – groceries, snack shops, tailors and other vendors. We were able to immerse ourselves into the micro economies of this town, be it fixing accounting systems, designing logos or internet marketing, we tried to do our bit to make their lives just a little easier." (Group 1, Video Project, June 2017)

Featured Videos

- Group video of students (Team 1) from Aug 2017 class https://youtu.be/zpuqr5qydtc
- Group video of students (Team 2) from Aug 2017 class https://youtu.be/4DjYfAQ7vJg
- Group video of students (Team 2) from Jun 2017 class https://youtu.be/Kis5NhWgdoo
- Group video of students (Team Red) from Aug 2016 class https://youtu.be/PMrHb8yk5-E
- Group video of students (Team 1) from Jun 2015 class https://youtu.be/SZzRK9ycZoc
- Group video of students (Team 2) from Jun 2015 class https://youtu.be/un4Uu2sPttM

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8.2 Case 2: "Build Your Own Airship Experiential Learning", School of Engineering, Hong Kong University of Science and Technology, Hong Kong

An "airship project" has been devised as an instrument of experiential learning by Hong Kong University of Science and Technology (HKUST)'s School of Engineering. In a course with the airship project, students work in teams to design and build their own airships that can be remotely

controlled by Android smartphones, using helium balloons, microcontrollers, circuit boards, motors and propellers. These airships then enter an internal competition to perform certain tasks (e.g. weight lifting, transporting). Three different versions of the airship project have been developed:

1 A First-Year Cornerstone Engineering Design Project Course (ENGG1100) as an elective introductory course for Year 1 engineering students to explore various areas of engineering (mechanics, programming and electronics) while developing essential teamwork skills for university studies and future careers
2 An Engineering Team Design Experience: Airship (ENGG1200) course as a common core for all undergraduate students outside the engineering discipline to enhance their creativity and teamwork
3 A series of community engagement activities with students from local secondary schools to experience and prepare for university life

The class size for the common core version is capped at 30 people.
The engineering cornerstone version aims at accommodating up to 200 first-year engineering students each academic year and is thus offered in all four terms.

This assessment showcase focuses on the common core version (ENGG1200) of the Airship project. To run this course, a teaching team is formed consisting of five university faculty members in engineering, one computer science instructor, two course facilitators (teaching staff), and a group of (4–14) student technical advisors (STA). Each student team is given a small budget (350–500 HKD) to purchase additional material supplies for building an airship within specified design parameters.

Distinctive Features:

- An exemplar of tri-modal education structuring undergraduate training of research, professional engineering, and entrepreneurship for future careers (HKUST, 2015);
- Scenario-based and mission-oriented tasks (e.g. island rescue, aerial firefighting) for the performance of airships designed to enhance students' learning experiences;
- Explicitly and comprehensively assessing teamwork skills with an online toolset, instructor feedback, logbooks and self-reflection.

Designed Learning Outcomes (LO):

I Analyse and describe the design of direct-current and logic circuits as used in the operation of a microcontroller and create programs in Java

for use on Android devices starting with increasing complexity and for use in the class project

II Describe, calculate, and quantify the action of forces and other physical quantities on systems similar to that used in the class project

III Apply an engineering design approach to generate ideas, model, analyse, predict and build an innovative object of engineering interest taking into consideration both societal and economic impact

IV Demonstrate appropriate knowledge and behaviour for effective and ethical membership on a technical team

V Communicate effectively with others orally, in writing and by use of sketches/drawings

VI Explore possible innovative engineering solutions via peer learning and self-initiated learning processes

Coursework Teaching & Learning Activities:

Classes

- Course introduction and project briefing [4 hours; Week 1–2]
- Effective teamwork, team skills and team building [1–1.5 hours; Week 2]
- Design processes and creativity [1 hour; Week 2]
- Technical concepts in computer science, electronic engineering, and mechanical engineering; training on airship construction, mobile phone programming and hardware communication [18 hours; Week 3–7]

Labs – Three sets of lab activities on electronic engineering, mechanical engineering and computer science respectively [9 hours]

Design Studio & Demonstrations

- Teamwork prototyping, testing and airship building [outside of class hours]
- Application and prototype demonstration [3 hours; Week 8]
- First build – control demonstration with airship inspection and tasks of airship manoeuvres [6 hours; Week 9–10]

Final Competition [4 hours; Week 14 – the day after the last day of classes of the term]

- Airship inspection
- Completion of tasks

Assessment Approaches (Representative Assessment Approaches Used in the Course)

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Team assignment survey	Students complete a survey of their backgrounds and interests, for instructors to form all airship teams, creating a diverse, peer-learning environment	0%	IV.	Formative	Self-management
A2	Safety quiz & declaration	A procedure to grant access to students to use the Design Studio independently outside of class time	0%	I. II.	Formative	Self-management; Study skills
A3	First drawing	Drawing of airship design ideas – an independent assignment to practice communicating ideas visually	2%	V.	Formative (individual)	Communication; Creativity
A4	Lab activities	Performing team tasks on electronics and motor functions	6%	I. II.	Formative (team)	Collaboration; Problem-solving; Critical Thinking; Study skills
A5	Drawings (2nd & final)	Team drawings of airship design	4%	I. III. V.	Formative (team)	Collaboration; Communication; Creativity
A6	'Project log & material order form' assignment	Tracking airship materials and supplies, seeking STA approvals, documenting receipts	3%	I. II. III. IV.	Formative (team)	Collaboration; Communication; Creativity
A7	Meeting logs	Documenting project meeting progress, teammate contributions, and work evaluation	3%	IV. V. VI.	Formative (team)	Collaboration; Communication
A8	Peer evaluations & teamwork reflection	The peer evaluation is conducted online twice with the CATME tool#; the reflection contains questions evaluating team design experiences.	10%	IV. VI.	Formative/ Summative (individual)	Collaboration; Communication; Self-management
A9	Final Competition	A contest of all team-built airships to perform various tasks (i.e. flying an obstacle course for points)	30%	II. – VI.	Summative (team)	Collaboration; Communication; Creativity; Problem-solving

The teamwork assessment makes use of an online assessment toolkit called 'CATME' (Comprehensive Assessment of Team Member Effectiveness) developed by a research team based in the United States (http://www.catme.org/). Meanwhile, STA is assigned to different teams which conduct STA assessment with a feedback form, the outcome of which is incorporated into the teamwork grade.

Assessment Type

The assessment is divided into a wide spectrum of graded activities that are mostly formative. The summative assessment is quite innovative, in forms of final competition, online peer evaluation tool, and reflection documentation. The assessment is also split into individual and team-based portions, valuing the significance of teamwork.

Main Assessment Areas

Teamwork Dynamics (Collaboration Skills): Teamwork training is a core component in the airship course. There are clearly set learning outcomes on effective teamwork, class hours on team building, teamwork skills and team behaviours, explicit grading criteria on teamwork assessment in the course rubrics (A9), as well as a standalone assessment approach on teamwork (A8). During the class time on teamwork, the goals of teamwork and appropriate team behaviours are set out regarding individual accountability (i.e. all team members have basic knowledge of technical modules); interdependence (i.e. all team members contribute and know what is happening throughout the project), and engaging environment (i.e. teammates are to learn from each other). Teamwork is being comprehensively assessed with an online toolset (CATME), instructor feedback, meeting logs (A7), and self-reflection.

The CATME is "a web-based instrument that efficiently collects and analyses self- and peer-evaluation data… (which) uses a behaviourally anchored rating scale to measure team-member contributions" in nine areas (i.e. Contributing to Work, Interacting with Teammates, Keeping Team on Track, Expecting Quality, Having Knowledge/Skills, Team Conflict, Team Satisfaction, Team Interdependence, Team Cohesiveness); the "behaviourally anchored rating scale" has been rigorously developed with "critical incident methodology" based on team effectiveness literatures and team-building experiences (Ohland et al., 2012). The HKUST teaching team employs this CATME tool for students' self-evaluation and peer evaluation to measure the "team chemistry" from the airship team building process (Teacher Interview, Dec 2017).

Design Thinking (Creativity Skills): The notion and practices of the engineering design process are weaved into the airship course, involving lab making, quick prototyping, design thinking, and essentially, creativity skills. The course learning outcomes have specified (i) design in electronic engineering, i.e. to analyse and describe the design of circuits; (ii) design in computer science, i.e. to conduct Java programming; and (iii) design in mechanical engineering, i.e. to describe, quantify and calculate the actions of forces with a particular design of airship assembly methods. The engineering design approach is applied to generate ideas, model, analyse,

predict and build an innovative object. The accomplishment of these outcomes is assessed by the design drawings (A3 & A5) as well as the performance of the final airship project (A9). Three drawings (A3 & A5) are required which measure and document the progress of design thinking and peer learning process. Each student team needs to submit a Design Report (A9) along with the Final Competition. The safety and efficiency of the airship design are included in the assessment criteria. Students are encouraged to use the least resources possible in building the airship that meets the design parameters, with bonus points for the lowest budget (A6; A9). Students work on designing a reasonable but creative assembly method of available devices (A9).

Visual Communication: Visual communication with computer-aided design (CAD) software is an essential skill for professional engineers and design engineers to explore design ideas, to visualize concepts through photorealistic renderings, and to project real-world simulations. Students in the airship course practice visual communication by drafting their airship ideas with a free starter CAD software. Their drawings need to be three-dimensional and indicate the front, side and top views of the airship labelled with measurement units (A3&A5).

Self-management with Tri-modal Education: For the transition into the four-year undergraduate curriculum, HKUST has implemented the tri-modal education that "provides students with a career aspiration track system based on what they want to achieve" (SENG, 2014). This curriculum is "designed to increase students' opportunities to experiment, helping them to resist conservatism and take advantage of internationalism" with "cross-disciplinary courses, active learning, and in-depth academic engagement" (HKUST, 2015; UGC, 2015). The "active learning provision" is being extended with the development of "innovative practicum or experiential-based courses" (HKUST, 2015). Departments in engineering work with the School of Engineering to provide platforms for students on three different paths – research, professional engineering, or entrepreneurship. Three of the departments work together to deliver the Airship course as part of the tri-modal education, "which allows students to 'feel' like an engineer' (SENG, 2014). The tri-modal design of the airship course enhances the self-management skills of undergraduate students (especially freshmen). As the tri-modal design intends to be "as individually accommodating for students as possible" (UGC, 2015), students should develop a strong self-understanding of needs, interests and strengths to prepare for active learning. Some assessments in the airship project take into account the self-management skills of students using a self-understanding survey for team assignment (A1) and self-evaluation in team performance (A8).

Reflection: Reporting on learning reflection constitutes one of the assessment techniques for teamwork evaluation (A8). Students are asked to thoughtfully and thoroughly respond to several probes for reflection, including: to describe one's evaluations of team experience; to document engineering design process (design decisions); and to document how one's taught/learned from teammates. Writing about teamwork experiences substantiates students' knowledge for effective team performance and consolidates the pertinent behaviours. Conversely, reflection and debriefing sessions are arranged during the week after the final competition (A9) (Teacher Interview, Dec 2017).

Assessment Standards/ Sample Rubrics

	Indicators	*Excellent – Level 4*	*Good – Level 3*	*Satisfactory – Level 2*	*Poor – Level 1*
A3/5. Drawings	Precision & clarity	Drawings are completely labelled with dimensions and units.	Drawings are mostly labelled with dimensions and units.	Drawings are somewhat labelled with dimensions and units.	Drawings are not labelled with dimensions and units.
	Perspective	Front, side and top views of the airship are included.	Front, side and top views of the airship are included.	Front, side or top views of the airship are missing.	Front, side or top views of the airship are missing.
A7. Meeting Logs	Teammate contribution	All teammates provide significant contributions to project.	Most teammates provide significant contributions to project.	Half of the teammates provide significant contributions to project.	One individual is responsible for most of the project.
	Progress & evaluation	Progress and work evaluation is clearly demonstrated.	Some progress and work evaluation are demonstrated.	Gaps in the progress and work evaluation exist.	No progress or work evaluation is shown.
A4. Lab	Completion & accuracy	All lab activity components are completed correctly.	Most lab activity components are completed correctly.	Few lab activity components are completed correctly.	Lab activities are poorly/ not completed.
A8 Teamwork	Peer evaluation Reflection questions	Peer evaluation is completed. All reflection questions are answered thoughtfully and thoroughly.	Peer evaluation is completed. Most reflection questions are answered thoughtfully and thoroughly.	Peer evaluation is completed. Reflection questions are answered superficially.	Peer evaluation is not completed. Reflection questions are answered superficially.

Final Competition Rubric

	Indicators	*Excellent – Level 4*	*Good – Level 3*	*Satisfactory – Level 2*	*Poor – Level 1*
A9. Final Competition	Teamwork (20%)	All team members take turns controlling the airship.	Majority of team members take turns controlling the airship.	Half of the team members take turns controlling the airship.	One individual controls the airship.
	Design Specifications (10%): Safety Crashworthiness	Does not damage testing area. All airship components are intact after landings. Reasonable propeller guards are used.	Does not damage testing area. Most airship components are intact after landings. Reasonable propeller guards are used.	Does not damage testing area. Half of the airship components are intact after landings. Some propellers have guards/shielding.	Damage testing area. Significant number of airship components are damaged or lost after landings. There are no guards/ shielding of propellers.
	Efficiency	One fewer than the maximum number of balloons or motors allowed are used. Components and electronics are not damaged by assembly methods used.	One fewer than the maximum number of balloons or motors allowed are used. Components and electronics are not damaged by assembly methods used.	The maximum number of balloons or motors are used. Some damage of components and electronics by assembly methods used.	Significant damage of components and electronics by assembly methods used.
	Performance (60%): speed; control; precision	1st place team: Excellent sportsmanship. All tasks are performed. Design rules for airship are followed.	2nd, 3rd, 4th place teams: Excellent sportsmanship. Most tasks are performed. Design rules for airship are followed.	5th, 6th, 7th, 8th place teams: Questionable sportsmanship. Half of the tasks are performed. Design rules for airship are followed.	9th, 10th, 11th, 12th place teams: Poor sportsmanship. Few tasks are performed. Design rules for airship are not followed.
	Design Report (10%)	Design is within budget. All materials/ services used in the airship are accounted for. Airship inspection completed.	Design exceeds budget. Most materials/ services used in the airship are accounted for. Airship inspection completed.	Design exceeds budget. Few materials/ services used in the airship are accounted for. Airship inspection completed.	Design exceeds budget. Materials/ services used in the airship are not accounted for. Airship inspection not completed.

Teacher's Stories

Prof. Ben Chan

Professional Engagements

Ben is the director at the Center for Engineering Education Innovation at HKUST. His role at the school is specialized for the needs of expanding school-based course offerings and student supports along with the four-year undergraduate curriculum reform. The airship courses are among the ten courses recurrently delivered by this Centre.

Motivation

Ben believes that students are already receiving qualitative education on cognitive knowledge, but there is a gap in students' training on holistic competencies and positive attitudes (i.e. ethics and professional identity). Thus, the common core version of the airship course focuses on students' creativity, teamwork and communication, instead of their technical skills. Meanwhile, Ben does not want to overwhelm students with excessive assessments and selects only one or two quantifiable items of learning outcomes to assess (Teacher Interview, December 2017).

Challenges

In terms of how to integrate the assessment of holistic competencies with curriculum, challenges are shortage of pertinent expertise, limited societal recognitions and insufficient industrial accreditations. The expertise within the faculty members lies mostly in technical disciplines. There is no expert to deliver contents on holistic competencies and no one knows how to assess them appropriately, without any expert professor on teamwork or communication within the school of engineering. Moreover, there is insufficient coverage on holistic competencies in the graduate attributes identified by the local professional accreditation agency in engineering (i.e. Hong Kong Institution of Engineers). The university needs to make society appreciate training on holistic competencies and institute fair judgements and recognised assessments to gain buy-ins from the industry. However, resources or knowledge within university settings is largely inadequate to accomplish qualitative assessments on generic competencies. (Teacher Interview, December 2017)

Students' Side of Stories

- "It wasn't tiring because I wanted to do it." "Yeah, we had fun!" "Even though none of us had any experience of building an airship or a robot, we believed we were not inferior to the other more experienced teams."…"I have a good team. Thank you!" (Team members of the Troublemakers, winning team of the 2014 Airship Final Competition)
- "The competition provided a unique opportunity to experience an engineer's life. The students gave numerous examples of the similarities between the two: building something from zero, finding optimum solutions, facing unpredictability, and sometimes sacrificing rest time to do something they are passionate about." (Fong, 2014)
- "For the past two semesters, I've been a student technical adviser for a total of about 90 university level students, helping out with the technicalities of running and developing the ENGG2990D (soon to become ENGG1200) Airship design course" (Ng, STA, blog 2015) …
- "I have taken the responsibility of aiding faculty to developing the three credit, undergraduate, engineering team airship design course … I take lead within a small group of student technical advisers and complete the following: create, organize and distribute the necessary course content that faculty have left out; create the assignments that go with the course; create the course assessment criterion; implement new and fresh ideas for the course. In the brief time that I have been in this position, I have implemented a drawing module, which is essential for clarity in the conveying designs" (Ng, LinkedIn, STA 2014-15).

Featured Videos

- Group 2015 version of ENGG1200: https://www.youtube.com/watch?v=LgJi_3f8Ms0
- Final Airship Competition (Spring Term 2015/16): https://www.facebook.com/airshipdesign/videos/1059613184134342/
- Final Airship Competition (Fall Term 2016/17) https://www.facebook.com/airshipdesign/videos/1228947317200927/
- Final Airship Competition (Fall Term 2014/15) https://video.ust.hk/Watch.aspx?Video=6E59A6A75E4E5D1F
- Airship engagements with secondary school students: https://www.youtube.com/watch?v=iwV0wyqNeO4
- Engineering Summer Camp HKDSE students: https://www.youtube.com/watch?time_continue=2&v=sfqSNQco5bg

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8.3 Case 3: "Hands-on Work Experience – Assessing Practicum in Health Sciences," Simon Fraser University, Canada

The practicum (HSCI 880) is a compulsory 11-week module in the summer term with hands-on work experience for postgraduate students pursuing Masters of Public Health (MPH) at Simon Fraser University (SFU) in Canada. Students in the practicum learn how to apply public health concepts, methods and theories in designated workplaces. They are mentored and supported by qualified public health supervisors and faculty. The practicum is offered in various settings of public health practices, including policy, education, communities or health services. There are four concentrations in MPH (Environmental and Occupational Health, Global Health, Population Health Science, and Social Inequities and Health).

Students in the Global Health concentration must do international practicum, with previous students being placed in countries like Malawi, Zambia, Sierra Leone, South Africa, India, Mongolia, Mexico, Iran, Australia and the United States. MPH students in other concentrations can choose to do their practicum in Canada or abroad.

Distinctive Features:

- Fostering global placements particularly in developing countries of public health practices
- Connecting field practices with potential capstone development
- Handing students initiatives and responsibilities

Designed Learning Outcomes (LO):

I Apply relevant theories, concepts, and skills learned through academic coursework in a practice setting relevant to their interests in public health;
II Develop confidence in applying specific skills and relevant theory pertinent to their areas of interest, expertise, and practice;
III Develop an appreciation for public health practice while working in a professional environment, through ongoing personal reflection;
IV Improve planning, organisational, and communication skills;
V Demonstrate collaborative skills while working with colleagues in a professional practice setting.

Coursework Teaching & Learning Activities:

Pre-practicum arrangements: travel preparations, development of an approved practicum plan, completion of practicum forms, immunisations, visas, and setting up living arrangements, etc.

- 1st meeting with the practicum committee (formed among the student, academic supervisor, and workplace preceptor)

Practicum field work (a minimum of 11 weeks of full-time work at a designated workplace)

- 2nd meeting with the practicum committee (midway through the practicum)
- 3rd meeting with the practicum committee (end of the practicum)

Post-practicum poster preparation (2 weeks)
Practicum Poster Session (all MPH students are expected to attend early fall)
Debrief session: reviewing experiences and future learning needs.

Source: SFU (2017) Practicum Guide.

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Practicum Plan	During the preparation stage for practicum, students need to prepare a Practicum Plan as a brief proposal stating their learning goals and how they plan to achieve the goals. This written document should be within ten pages with a professional layout. It can later be revised on-site.	n/a	I. II. IV.	Formative	Communication; Critical Thinking; Self-management; Study Skills
A2	Bi-monthly Reports	To help students reflect on their learning experience, they are required to submit a total of five bi-monthly reports throughout their practicum. The 5th report is a summative report of the full learning experience and what aspect(s) can be taken into the capstone project.	n/a	III. IV. V.	Formative & Summative	Collaboration; Communication; Critical Thinking; Problem Solving; Self-management
A3	Practicum Poster & Poster Presentation	Students are required to do a poster presentation on the rationale behind the work undertaken during the practicum, their achievement of objectives, deliverables and any insights gained. The format of the poster should follow closely the Practicum Plan.	n/a	I. II. III. IV.	Summative	Communication; Creativity; Critical Thinking; Study Skills
A4	Practicum Student Assessment Forms	Workplace preceptors have to complete a student assessment form for mid-practicum and end-of--practicum evaluation. Students identify their own competencies for evaluation by the preceptors.	n/a	I. II. IV. V.	Summative	Collaboration; Communication; (Critical Thinking); Problem Solving; Study Skills

Assessment Type

Both formative and summative assessments are employed before, during and after the practicum to capture student learning experience.

Main Assessment Areas

Holistic Competencies: The practicum experience is "designed to assist students in acquiring skills as a team player, problem-solver, and effective communicator" while "organizational and critical thinking skills are sharpened as a result of this experience" (SFU, 2017). The supervised field learning is competency-based, and students need to conduct a self-assessment of core competencies as an initial step of placing practicum. Self-understanding of holistic competencies is thus enhanced. Students can choose which core competencies they want to focus on during the practicum. Alongside the self-elected core competencies identified by the students themselves, the assessment form (A4) to be completed by the internship preceptor covers four areas of holistic competencies, including interpersonal communication, professional conduct, efficiency at work, and teamwork.

Knowledge Application: The practicum is an opportunity for students to apply and use their knowledge acquired through coursework, to deepen knowledge in a particular area of expertise, and/or expand their breadth of knowledge. It is also a collaborative learning process encouraging knowledge translation and exchange in the Practicum Plan (A1) and the Bi-monthly Reports (A2).

Reflection: The learning outcome of ongoing personal reflection is highlighted in this course. The Bi-monthly Reports (A2) should be reflective in nature, "to facilitate a progressive reflection on the practicum that supports the learning experience" (SFU, 2017). The poster (A3) should contain a section on reflection of lessons learnt or key insights gained from the practicum.

Assessment Standards/Sample Rubrics

As an MPH program requirement, this credit-bearing practicum is graded as CO for complete, S for satisfactory, or U for unsatisfactory. The credit points or marks are not relevant if the students complete the field requirements satisfactorily. Therefore, rubrics are not provided for most of the assessment activities, although an assessment form (A4) and a template for Practicum Plan (A1) are available. Questions in the assessment form are listed as follows:

A4. Practicum Student Assessment Form

Q.1a For each competency, please indicate to what extent the student has met the competency for entry level or TIER 1 public health practice, to the extent that you feel was possible during this practicum. Entry level or Tier 1 public health professionals are typically individuals who carry out the day-to-day tasks of public health organisations and are not in management positions.

Competency:				
	Fully met beyond my expectations	Fully met	Partially met	Not met
(8 repeated competency rows)				

Q.1b) In the box provided below, please describe aspects of the Core Competencies identified above that could benefit from additional attention by the student during the remainder of the MPH programme.

Q.2 Please note the degree to which the student met your expectations in the following areas:

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Interpersonal Communication	☐	☐	☐	☐	☐
Professional Conduct	☐	☐	☐	☐	☐
Hours of Work	☐	☐	☐	☐	☐
Efficiency at Work	☐	☐	☐	☐	☐
Team work (where appropriate)	☐	☐	☐	☐	☐

Q.3 Practicum activities were defined in the Practicum Plan and reviewed at the start of the practicum.
Please indicate the progress of the student towards completing these practicum activities.

Completed activities beyond my expectation	Completed activities	Experienced difficulties	Very challenged by the activities

Please elaborate, with examples.

Q.4 Please provide any further recommendations to enhance this student's life-long learning in the areas highlighted by this practicum.

Q.5 Do you think the student could have been better prepared by our program for this practicum?
Yes No
If yes, please elaborate.

Source: SFU (2017) Practicum Guide.

Teacher's Stories

While the practicum is coordinated and administered by managerial staff in the MPH program, the practicum design and arrangements are very much a group effort of the entire faculty of health sciences.

- Prof. John O'Neil was the former Dean of Faculty of Health Sciences at Simon Fraser University. He comments that

  > Probably the most important part of their (MPH) training is the practicum, and all of our students do a 12-week practicum in a public health or population health setting. … Our students receive a broad interdisciplinary training and they take with them into the field and into their careers, I think one of the strongest backgrounds in public health and global health than any groups of students in the world.
  >
  > (Online video, Sept 2010)

- Prof. Craig Janes, emeritus and former Associate Dean of Health Sciences at Simon Fraser University, says that:

  > Mongolia is a very interesting place for students to come to study. It represents in many ways a microcosm of globalization. It's a very rapidly developing society, with many of the problems that developing societies have. At the same time it also has a merging epidemics of non-communicable diseases which are very similar to what developed countries have. So it's a very good place for students to come to study. Our students are able to take advantages of very unique placements. They learnt a great deal about global health.
  >
  > (Online video, Sept 2010)

Professional Engagements

Before joining SFU, Dr. John O'Neil was Director of the Manitoba First Nations Centre for Aboriginal Health Research. He has been appointed as a Senior Investigator at the Canadian Institutes of Health Research and as the founding Chair of the Advisory Board for the Institute for Aboriginal People's Health at the Canadian Institutes for Health Research from 2000 to 2006. He also served as the research advisor to the health policy team for the Royal Commission on Aboriginal Peoples in 1995/1996 and he is currently appointed to the Advisory Board of the National Collaborating Centre on Aboriginal Health at the Public Health Agency of Canada. Dr. Craig Janes, when he was a faculty member at SFU, received the National Medal of Honour from the Government of Mongolia for his work to develop the country's health sector.

Partnership

- Oyun Lkhagvasuren, Director of the Health Promotion Division in the Department of Health in Mongolia, is one of the global partners and workplace preceptors of the practicum. She states that: "We like our collaboration with Simon Fraser, because it's beneficial for both sides, for the Canadians and Mongolians, and we are putting together our efforts to address the issues that we have in Mongolian terms of public health" (Online video, Sept 2010).
- Tsogtbaatar Byambaa, Ministry of Health & Global Fund in Mongolia, Global Fund support is the largest of its kind in Mongolia. The money was there, efforts were there but our capacities weren't good enough, and SFU practicum students came and helped us to strengthen our capacities, and benefits were mutual (Online video, Sept 2010).

Students' Side of Stories

- "I felt the need to gain knowledge that would help me work on a much larger scale to reduce health inequalities and improve access to better healthcare services in developing countries like mine and the world at large. … While in the MPH program, I have learned so much from the wide range of courses that I have been exposed to, and I have been able to narrow my interests to the area of Maternal and child health. The highlight of the program has been the practicum experience where I had the opportunity to work in my area of interest" (MPH student from Nigeria).
- "Today I am here in this secondary school to help evaluate an HIV aids trainer program and peer education program. This summer I am going to be working with the Department of Health, to help evaluate this program that has been funded by the Global Fund. But I decided to come to Mongolia based on the previous experiences as former student here and the relationship that they form as well as the experience of Mongolian culture" (MPH student doing practicum in Mongolia, Online video, Sept 2010).
- "At first, I have had the experience of what is [sic] successful public health intervention can look like, and so we have a lot of learning about challenges and struggles, and some projects that haven't worked out and so to have the real experiences of what the changes can mean for vulnerable populations … was really motivating, it was really inspiring to know that public health projects can work and can have a real impact" (MPH graduate, online video, Sept 2010).

- "Through all the courses we have taken in this program and through our experiences abroad in our internships, we are taught to take into account and to give importance to the social context, or political context, economic context, and how those relate into health outcomes and health data of populations" (MPH graduate, online video, Sept 2010).
- "When I was a student in the master program at SFU, I did my practicum placement at the Department of Health (of Mongolia), and I really learnt through that experience about the complexity and importance of working with various stakeholders in the public and private and NGO sectors, and these are skills that I think I would take with me as I continue my career" (MPH graduate, online video, Sept 2010).

References

SFU (2017). Practicum guide. Retrieved from https://www.sfu.ca/content/dam/sfu/fhs/future-students/graduate/documents/2017-2018%20Practicum%20Guide.pdf (accessed 12 Mar 2018).

SFU (2018). Student life. Retrieved from http://www.sfu.ca/fhs/future-students/graduate/studentlife.html (accessed 12 Mar 2018).

8.4 Case 4: "Understanding British Legal System – Assessing Pre-law Track Student Performance in the Law Course of London Internship Programme", Boston University, the United States of America

This course (CAS PO 22) is part of the Boston University London Internship Programme, in which students complete both credit classes and internship/work placement in London for 15 weeks (one semester) in their chosen fields of interest. This course is mandatory for Pre-Law track students in the Internship Programme. With a combination of lectures, seminars, field trips and self-reading, students are able to gain an overview of the history and the development of the British legal system, and thoroughly examine its contemporary operation and iteration. Students are also expected to learn about the legal profession, the judiciary and the legislature of Britain, and the massive influence of the English common law/legal system on the American common law/legal system.

Distinctive Features:

- Featuring a wide variety of learning activities including lectures, discussions and field trips
- Relating the British legal system to the American legal system to provide the foundation for an in-depth study of the legal world
- Offering a thorough overview of the British legal system on both theoretical and practical aspects

Designed Learning Outcomes (LO)

I To gain a basic understanding of the origins and developments of the common law, the English legal system of courts and the criminal and civil litigation processes

II To examine the development of as well as the current British legal profession, including routes to qualification, operating vocabulary, current legal trends and local legal peculiarities, and how access to justice is funded in the British legal system

III To understand, examine and critique the contemporary form of the judiciary and the legislature.

Coursework Teaching & Learning Activities

- Lectures (8 sessions): Introduction to different aspects of the English legal system
- Class Discussion: Students are expected to read newspapers daily and select articles relevant to the course. They might be required to summarize the article to the class and lead a class discussion on the subject matter
- Field Trip 1 (Week 1): Orientation field trip
- Field Trip 2 (Week 2): "Legal London Walk" including a visit to the Royal Courts of Justice
- Field Trip 3 (Week 4): Field trip to Houses of Parliament
- Field Trip 4 (Week 6): Field trip to Crown Court, Old Bailey
- Field Trip 5 (Week 7): Field trip to Magistrates Court

Source: Boston University (2016) Course Syllabus

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Attendance	Attendance is compulsory in this course for all class sessions, seminars and field trips. Students absent for more than two class sessions (whether authorized or unauthorized) will be required to meet with the Directors of the programme. An unauthorized absence will lead to a 4% grade penalty on the students' final grade. Class attendance will also be used in the moderation of final grades.	0% (penalty applies)	I. II. III.	Formative	Self-management; Responsibility
A2	Final Examination	Students are required to take a 2-hour closed book examination at the end of the course. They will need to answer two questions from a list of four. Students are expected to answer each question completely with 3.5 to 4.5 pages in length.	40%	I. II. III.	Summative	Critical Thinking; Study Skills; Communication; Time Management; Problem Solving
A3	Essay	All students are given the same topic for the essay and are required to produce a 2,500-word response to the essay prompt. They are encouraged to use illustrative materials including texts, periodicals, press or other media.	60%	I. II. III.	Summative	Critical Thinking; Study Skill; Communication

Assessment Type

Both summative and formative assessment methods are adopted in this course to enhance student engagement and learning from the course.

Main Assessment Areas

Holistic Competencies: With a comprehensive combination of learning activities ranging from lectures to field trips, this course focuses on developing students' critical thinking and study skills. The final examination (A2) and the essay (A3) are both effective assessment methods of holistic competencies including critical thinking, study skills and communication skills because students are required to critically and eloquently answer questions given to them with knowledge learnt in the course. At the same time, class attendance (A1) can train students to manage themselves well and have a sense of responsibility.

Knowledge Application: The practical application of knowledge learned in this course is another assessment focal area. In the final examination (A2) and the essay (A3), students are required to, based on knowledge learnt in the course, critically respond to questions related to areas discussed. This assessment focus is in line with the course LOs, which focus mainly on the understanding and grasping of new knowledge.

Assessment Standards/Sample Rubrics

A set of general grading criteria is set out for the whole course, while some of the assessment approaches have other specific criteria.

	Description	*Grade*
General Grading Criteria	This exceptional grade is assigned only to work that has persistently outstanding quality in both substance and presentation. The student must demonstrate a sustained capacity for independent thought and extensive study, producing rigorous and convincing analyses in well-ordered prose.	A
	Awarded to work that is clearly focused and analytical, and based on wide reading. The student must cover all the principal points of a question and systemically develop a persuasive overall thesis, allowing for one or two venial omissions or inapt expressions.	A–
	This range of grades indicates that the student has shown some evidence of original thought and intellectual initiative. The student has cited sources beyond the class materials and shown a degree of originality in perception and/or approach to the subject. The work will show thoughtful management of material, and a good grasp of the issues. The differences between a B+, a straight B and a B– may reflect poor presentation of the material, or mistakes in punctuation, spelling and grammar.	B+, B, B–

	Description	*Grade*
General Grading Criteria	Work in this grade range is satisfactory, but uninspiring. If the work is simply a recitation of the class materials or discussions and shows no sign of genuine intellectual engagement with the issues, it cannot deserve a higher grade. Should an essay fail to provide a clear answer to the question as set, or argue a position coherently, the grade will fall within this range.	C+, C, C–
	A marginal pass can be given where some but not all the elements of the course have been completed satisfactorily.	D
	The failing grade indicates the work is seriously flawed in one or more ways: • Obvious lack of familiarity with the material • So poorly written as to defy understanding • So brief and insubstantial that it fails to properly address the subject • Material presented is not relevant to the assignment • Demonstrates evidence of plagiarism	F

Source: Boston University (2016) Course Syllabus

	Criteria
A2 & A3	The grade students receive will be based upon: • The relevance of your answer to the question/topic set/to be discussed • Clarity of expression and continuity • Evidence of reading and thought relate to the question/topic • Quality of the arguments presented • The above Grading Criteria

Source: Boston University (2016) Course Syllabus

Teacher's Stories

Denis Carey

Professional Engagements

Dennis Carey holds a Bachelor of Arts degree from the National University of Ireland, a Post Graduate Diploma in Law from Dublin Institute of Technology, a Master of Laws from Georgetown University Law Center and a Post Graduate Diploma (Roman Law, Private International Law and a lawyer in Ireland, California and England & Wales. He has vast experience in legal education and overseas programmes in various institutions, including Staffordshire University Law School, University of Idaho College of Law Summer School and University of Tulsa College of Law's London Programme. He has taught various law courses for the Boston University British Programmes.

Motivation

Denis is admitted as a lawyer in both England and California. With his knowledge and experiences in both the British and American legal systems and the organisation of overseas programmes, he is able to deliver the LOs with a balance of lectures, discussions and field trips.

Students' Side of Stories

- "In terms of rigor, the courses were much easier than at my home institution. However, the classes themselves for the most part were extremely fun. We went on a lot of class trips to museums, the Supreme Court walking tours, I even had a free trip to Belgium. The professors prioritize exposing their students to England's culture and history. Very enjoyable!" (Anonymous student rating, 2017)

Reference

Boston University. (2016). The British legal system [Syllabus]. Study Abroad, Boston University. Retrieved from https://www.bu.edu/abroad/files/2016/02/CAS-PO-222-THE-BRITISH-LEGAL-SYSTEM.pdf (accessed 4 Apr 2018).

8.5 Case 5: "Building Personal and Workplace Skills – Assessing Humanities Internship," University of Otago, New Zealand

The Humanities Internship Practicum (HUMS301) is an elective for all full-time undergraduate students in any of the Humanities disciplines at the University of Otago in New Zealand. Students are expected to work at a partner organisation for eight hours per week, for 13 weeks. There is no automatic admission to the elective, and students must receive approvals from both the departmental supervisor and the course coordinator to be admitted. This course focuses on enabling students to develop a range of personal and interpersonal skills, and it also allows students to learn about the reality of the workplace. Students are expected to reflect on their internship experiences and make effective use of what they learnt during the internship. Through developing personal and workplace skills of students, their employability can be enhanced.

Distinctive Features:

- Generating and agreeing on expected learning outcomes among the student, the university and the partner organisation

- Assessing students through hosting a Humanities Symposium at the University of Otago
- Giving students a choice of assessment formats among written report, portfolio and hybrid combination

Designed Learning Outcomes (LO)

I To develop a range of personal and interpersonal skills, particularly communication, team working, priority setting and time management skills
II To demonstrate applying, integrating and evaluating the body of knowledge and the method of inquiry of a discipline or a field via first-hand participation
III To show the ability to learn the expectations of employers and the reality of the workplace
IV To present evidence of internship experiences clearly and appropriately
V To reflect on experiences and the learning derived from the internship
VI To investigate a topic relevant to the internship context or experience

Coursework Teaching & Learning Activities

Pre-Internship

- Discussion with students' department
- Preliminary Project form
- Initial meeting with workplace coordinator and departmental liaison person

During the internship

- Internship and reflective field notes
- Report/portfolio

Post-Internship

- End-of-placement assessment form
- Symposium

Source: Humanities Division, University of Otago (2018).

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Reflective Field Notes	Students have to complete a weekly diary, approximately one page per week, containing reflections on how their work is related to theories they have learnt at the university. Students are expected to discuss their reflective field notes with the departmental supervisor at fortnightly meetings.	25%	III. VI.	Formative	Communication, Critical Thinking, Problem-solving, Self-management
A2	Final report/ Portfolio	Students have to submit a final report/ portfolio at the end of the internship to demonstrate their ability to undertake a research project related to their work experience	60%	I. II. IV.	Summative	Critical Thinking, Problem-solving, Creativity, Study Skills
A3	End-of-placement assessment	The assessment is a symposium session for students to showcase their ability to present their internship experience and to critically reflect on their personal development of different types of skills and competencies	15%	V.	Summative	Communication, Problem-solving, Critical Thinking

Assessment Type

The assessment approaches demonstrate a mixture of formative and summative assessments, although the summative ones are the focus. This enables the evaluation of students' growth throughout the internship and of the learning outcomes after the internship.

Main Assessment Areas

Problem-solving Skills: Students are expected to manage the challenges of the workplace during the internship. With weekly field notes and fortnightly discussions with their supervisor (A1), students receive advice on their problems and suggestions for improvement. The final report/portfolio (A2) and end-of-placement assessment (A3) then allow students to reflect on their problem-solving skills throughout the internship, which also test students' problem-solving skills as students may meet challenges while presenting their internship experience in written and verbal forms.

Communication Skills: Throughout the internship, students are expected to communicate with people in the workplace and with supervisors both in the workplace and at the university. In discussions with the supervisor (A1), students need to communicate effectively to show what they have done in the internship. Students are expected to actively seek feedback and suggestions for improvement during such discussions. For the end-of-placement assessment (A3), students must outline and discuss their internship experience through a verbal presentation. Students also must communicate with the audience and answer any questions the audience may have. Communication is thus assessed in various ways.

Knowledge Application: Students are expected to apply acquired knowledge during their internship. This can be assessed by the supervisor who has regular discussions with a student on workplace skills and challenges (A1). Through writing weekly reflective field notes (A1), students are encouraged to reflect on how their work is related to theories taught in the university, applying knowledge they have learnt in lessons to their workplace experience. Students can also employ theories or concepts in analysing the problems they perceive during the internship, in the final report/portfolio (A2) and the end-of-placement assessment (A3).

Values for Reflection: Reflection on job performance during the internship is assessed in the weekly field notes (A1), whereas fortnightly discussions with the supervisor (A1) may enhance the reflection process and provide more insight as to how the student can improve. Reflection on the development of different skills and achievements throughout the internship is suggested in the final report/portfolio (A2) and the end-of-placement assessment (A3). The end-of-placement assessment (A3) is also a way to push students to further reflect upon what they have learnt and have acquired from the internship experience, as there is discussion time for attendees of the symposium to raise questions on the presentations.

Assessment Standards/ Sample Rubrics

	Criteria	*Design*
A2 Final Report/Portfolio	Critical thinking, problem solving, research skills development within work environment	Aiming at assessing students' ability to undertake an applied task or research-based assignment with a quantifiable outcome, this assignment is designed with three options: *Report*: students can choose to write a report on a particular issue or topic for the organisation. At the end of the placement, the completed final report should be provided to the organisation. A research type report should have a maximum of 7,000 words. *Portfolio*: this is applicable when there is a large practical component in the internship. Portfolio attachments can include materials and other types of evidence. The portfolio should include an explanatory and reflective section explaining various tasks undertaken, how these were achieved, the problems met and how they were addressed. A portfolio with a large practice component may have 3,500–4,000 words. *Hybrid*: The first part of a hybrid should be a research report, then materials added to indicate the practice components.
A3 End-of-placement assessment	Critical thinking, communication, time-management, self-management	*Symposium presentation*: The symposium is run by the Humanities coordinator, inviting all departmental supervisors and organisation mentors. The presentation is open to students, supervisors, invited guests and interested members of the public. All internship students are expected to give a ten-minute presentation to outline and discuss with insight their workplace experience, covering: (1) brief self-introduction; (2) the organisation and their role; (3) role and task during internship; (4) how tasks were achieved; (5) how challenges were met and how they were addressed; (6) how successful was the task completed; (7) Reflections Each presentation is followed by five-minutes questions and discussion starting with the organisational representative. *End-of-Placement Assessment Form*: Completion and submission of the End-of-Placement Assessment Form is mandatory before the symposium. In the form, the organisation comments on: • Whether the student successfully completed the agreed task • How well did the student complete the task • How well did the student perform when working in the organisation • Other comments on the student's performance

Source: Humanities Division, University of Otago (2018).

Teacher's Stories

Prof. Claire Freeman

Professional Engagements

Prof. Freeman was a planning coordinator for the Urban Wildlife Trust for the West Midlands and was a Senior Lecturer for Planning and Housing Professional Group at Leeds Metropolitan University from 1991 to 1997. She then became a Senior Lecturer at the School of Regional and Resource Planning, Massey University from 1997 to 1999. Currently a professor at the University of Otago, she is mainly in the Master of Planning program with teaching involvement in Planning Theory, Spatial Planning and Development, and Internship Practicum. The research interests of Prof. Freeman lie in planning and development of the natural environment, planning with children, and sustainable settlements.

Students' Side of Stories

- "I really enjoyed HUMS301 because they're more hands on and I was able to do something that I was passionate about […] This paper bridges a gap between being a student and we'll go into the real world, and having a mentor who is able to guide you from what you have learnt within your undergraduate degree to what and how you apply them in work situation…" (Student S, Nov 2016).

Featured Video

- Reflection of a student who has completed the internship https://youtu.be/TZeMq1Xcd5k

References

Course website. Retrieved from http://www.otago.ac.nz/humanities/study/otago611002.html#what

The University of Otago. (2018). Humanities division HUMS 301–401 internship practicum programme manual. Retrieved March 22, 2018, from http://www.otago.ac.nz/humanities/otago611269.pdf

8.6 Case 6: "Practicing Geographical Fieldwork Skills – Assessing a Field-Intensive Geography Class," University of Western Ontario, Canada

The course Field Methods and Practices (Geog 3000y) at the University of Western Ontario (2022) involves seminars and a one-week field-intensive excursion. It is open to third-year students in the Department of Geography in the Fall semester each year. At an unfamiliar location away from the university campus, students are given the opportunity to practice geographical fieldwork skills through conducting authentic geographical research. As both the preparation prior to departure and the on-site practice of geography are equally important, students are required to attend seminars and complete assignments before, during and after the field trip.

There are two locations available: Montreal (Canada) and Kentucky (the United States). This case study investigates the Montreal course.

Distinctive Features

- Featuring a combination of seminars and field trip, along with a variety of assignments prior to, during and after the field trip
- Providing an opportunity to conduct geographical research at an unfamiliar location
- Stressing on the values of learning by doing hands-on fieldwork exercises

Designed Learning Outcomes (LO)

I To develop students' practical geographical research skills, including field-based observation, data collection and recording, and analysis and interpretation of human and physical landscapes
II To develop observation, analytical, critical, personal and group skills
III To facilitate student-centred learning and experiential learning with authentic field research
IV To foster respect for the urban environment

Coursework Teaching & Learning Activities

- Seminars (3 sessions, 1st session: 2 hours; 2nd and 3rd session: 3 hours): 1 session is held prior to departure and 2 sessions are held after the trip to supplement learning from field work
- Seminar Meeting (1.5 hours, Day 2): a talk on field note booking, lecture and group allocation

- Agenda Meetings (1/ 1.5 hours, Day 3–5): lectures and discussion of field assignments
- Guided Tour 1: Old & New Montreal Tour with Urban Specialist (Day 2)
- Guided Tour 2: Tour of Old City Hall (Day 4)
- Guided Tour 3: Museum of Archaeology & History (Day 5);
- Completion of Field Assignments (Day 2–5)
- Discussion Sessions (2 sessions, 1st session: 1 hour; 2nd session: 0.5-hour, Day 3, 5)

Source: The University of Western Ontario (2022) Course Syllabus.

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Pre-trip Assignment	Students are required to research the different aspects of Montreal (e.g. city, people and culture) and submit the assignment before departing for the field trip.	10%	I. III. IV.	Formative	Study Skills; Critical Thinking
A2	Field Notebook & Assignments	Students are asked to keep records of their observations and experience during the field trip, including all notes from lectures and presentations, and complete field assignments in their field notebooks. The field notebooks are submitted at the end of the field trip.	40%	I. II. III. IV.	Formative	Critical Thinking; Self-management; Problem Solving
A3	Research Proposal	Students are required to complete a 2,000-word research proposal developing their own research question relevant to themes covered in the field trip. Students are encouraged to discuss their research topics with the course instructor during or after the field trip.	40%	I. II. III.	Formative/ Summative	Communication; Critical Thinking; Study Skills

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A4	Participation	Students are expected to attend and be punctual for all seminars and meetings. Their attitudes to instructors and guest speakers and participation in class will also be assessed.	10%	II. IV.	Formative	Self-management; Responsibility: Communication

Assessment Type

A number of formative assessments are adopted in this course to enhance student engagement in the field trip and ensure the quality of student learning through the trip. A summative assessment (A3) is also employed to encourage students to research broader urban geographic issues using the field trip as a starting point.

Main Assessment Areas

Holistic Competencies: This Geography course emphasizes student-centred learning and learning by doing. Hence, developing students' competencies of self-management and critical thinking are the two foci in the course. The course's LO also specifies the importance of enhancing students' observation, analytical, critical, personal and group skills. These holistic competencies are assessed in the field notebook and field assignments (A2), the research proposal (A3) and participation (A4). In the assessment of participation (A4), students are encouraged to actively engage in lectures, presentations, tours and discussion sessions, in which their communication skills are also trained and assessed.

Knowledge Application and Geographical Research Skills: In this course, research-oriented learning is accompanied by seminars. During seminars, students gain knowledge of urban geography and the field site, which they can use to analyse and explain urban landscapes and problems. Students also learn about practical research skills and practice them in the field. The pre-trip assignment (A1) and the research proposal (A3) are both assessments of students' knowledge of urban geography, while the field notebooks and assignments (A2) assess students' geographical skills.

Reflection: Students are required to prepare and compile their own field notebooks (A2), which contain a documentation of their field experiences and observations. The completion of field notebooks and field assignments can facilitate students' self-reflection during and after the field trip. In the research proposal (A3), students are also asked to reflect upon their field experiences and observations and develop their own research questions. Lastly, students are encouraged to pose questions and contribute to discussions to gain participation marks (A4), which can stimulate reflective discussion.

Assessment Standards/Sample Rubrics

	Criterion
A2 Field Notebook	• Format and organisation • Completion of all assignments • Detail, quality and originality of the observations • Evidence of critical analysis (questions, ideas and conclusions)

Source: The University of Western Ontario (2022) Course Syllabus.

	Description	*Marks*
General Grading	You have performed satisfactorily in the field, completed all aspects of the assignments adequately, and demonstrated you have a basic grasp of the material.	C (60%–69%)
	An average to slightly above average performance and evidence of independent thought, effort and creativity. Not only have you fulfilled the requirements of the field work and assignments in a more meticulous fashion, but you have also demonstrated a more thorough understanding of the material and you have gone a few extra steps beyond the average student.	B (70%–79%)
	Your special work exhibits a fastidious eye for detail and clear signs of outstanding effort, presentation, content and clarity.	A (80%–89%)
	An exceptionally outstanding set of insightful field notes, a research paper demonstrating a superb command of English and a critical mind, and positive participation in the course will earn this prestigious grade.	A+ (90%+)

Source: The University of Western Ontario (2022) Course Syllabus.

Teacher's Stories

Dr. Jeff Hopkins

Professional Engagements

Jeff Hopkins holds a Master of Arts from the University of Western Ontario and a PhD in human geography from McGill University. He is an Associate Professor as well as the Graduate Chair in the Department of Geography at the University of Western Ontario. He was recognized by the University Student Council with the Western Teaching Honour Roll seven times and was awarded the Social Science Dean's Award for Excellence in Teaching at the University of Western Ontario.

Motivation

Dr. Hopkins has dedicated to improving course designs and curricula with innovative and engaging approaches. He is also highly recognized for his contributions to instructional development and education outreach. This course is a very good illustration of Dr. Hopkins' endeavour in adopting engaging pedagogical methods and assessments in the teaching of geography.

Students' Side of Stories

- "Best course in university" (Anonymous student testimonial, n.d.);
- "I learned so much more than I would have in a classroom" (Anonymous student testimonial, n.d.);
- "Our field work expeditions were the highlight of my academic experience" (Anonymous student testimonial, n.d.).

References

The University of Western Ontario. (2016). Jeff Hopkins- Excellence award. Retrieved on March 29, 2018, from http://www.ssc.uwo.ca/news/2016newsarticles/awardexchopkins.html

The University of Western Ontario. (2017). *Field methods and practices: Montreal – its urban, cultural & social practices* [Syllabus]. Retrieved on July 16, 2022, from https://geoenvironment.uwo.ca/undergraduate/course_information/3000_level_courses.html

8.7 Case 7: "Being ELITE – Assessing Engineering Project-Based Assignments", Chinese University of Hong Kong, Hong Kong

"Social Media and Human Information Interaction" is an intermediate course in information engineering, suitable for third or fourth year students in a four-year curriculum. It is an elective course for students majoring or minoring in information engineering, or engineering students in the 'ELITE Stream', namely 'Engineering Leadership, Innovation, Technology and Entrepreneurship Stream' – an innovation in teaching and learning devised by the Faculty of Engineering since 2014/2015 to strengthen students' holistic leadership for diverse development. The specialist content of the course recognizes social media as one of the main

sources of big data and examines the social and human dimensions of social media. The course consists of mainly in-class lectures and web-based learning, while the students carry out project works via experiential learning. The lectures cover the foundations of social media, human cognition and information behaviour, online communities and social interactions, as well as infographic and big data visualisation. There is a course instructor/coordinator, assisted by three tutors to facilitate the teaching and assessments of the course. As the ELITE status is offered to students with excellent academic performance, this course as one of the engineering courses for the ELITE stream is designed with additional subject contents and challenging coursework assessments.

Distinctive Features

- Relating engineering professionalism with global citizenship for holistic leadership training
- Integrating human information interaction with the analytics and visualisation of big data
- Specialising in user-application interfaces at the research-teaching nexus of data science

Designed Learning Outcomes (LO)

I Gain conceptual knowledge and theoretical foundations in social media and human information interactions

II Ability to demonstrate the integration of acquired skills, capabilities and knowledge from university studies to a practical workplace project. Ability to demonstrate knowledge of corporate employability acquired within a workplace. Professional presentation of the application of theory into practice

III Capacity to perform project-based work assignments and provide a project précis to the workplace

Coursework Teaching & Learning Activities

- Lectures [46 hours; Week 1–14]
- Web-based learning classes [4 hours; Week 7 & 8]
- Blogging
- Group work
- Exam

Source: Interview with the teacher

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	e-Portfolio	Each student makes a personal blog on WordPress.com as an e-Portfolio, hosting four posts to reflect on his/her learning in the course (around 80 words in each post).	20%	I.	Formative/ Summative	Communication; Creativity; IT; Critical Thinking
A2	Online Learning Community Participation	Students need to give non-trivial comments, and/ or answers to comments given to their blog posts.	20%	I. III.	Formative	Communication; Critical Thinking; IT; Self-management
A3	Group Project One	A group of four students works on a project about human-information interaction and global citizenship.	10%	II.	Summative	Collaboration; Problem Solving; Critical Thinking
A4	Group Project Two	A group of four students works on a project about social media analytics and information visualisation.	20%	I. II. III.	Summative	Collaboration; Problem Solving; IT
A5	Final Exam	An open lecture-notes exam is arranged.	30%	I. II. III.	Summative	Study Skills; IT

Assessment Type

A wide range of summative assessments are employed to assess students' grasps of knowledge. Formative assessment is adopted to encourage student participation in making active responses in the online learning community.

Main Assessment Areas

Interdisciplinary Teamwork (Collaboration Skills): Students are required to work in groups to work on an interdisciplinary project regarding the Sustainable Development Goals (SDGs) set out by the United Nations. This group project encourages engineering students to bring in knowledge from different disciplines, especially the theories and concepts that they are exposed to in their general education curriculum or minor program courses, e.g. social sciences and humanities. This research project is thus interdisciplinary in nature. The course instructors assess the output of this interdisciplinary teamwork research based on the relevance of recommended solutions to the identified problems (A3). The process of teamwork is assessed in another activity – online learning community participation (A2). Since each student must create a blog and share some learning reflections (A1), the course coordinator encourages students' collation of ideas by giving some marks for active comments on blogs of peer students (A2). These scores awarded to blog comments are used as incentives for teamwork. Although rubrics have not been very well developed for the blogging and blog commenting activities, students are informed about how this work is being evaluated.

Professional & Ethical Identity of Global Citizenship: Through the Group Project One on interdisciplinary topics (A3), "somehow the students can get to recognize their professional identity as an engineer and appreciate how important the role that they are going to play, or are currently playing, in solving some of the global challenges" (Teacher Interview, Jan 2018). Developing students' professionalism and professional ethics as future engineers is a special focus of this course. The awareness of global issues is being assessed in Group Project One: Policy Report (A3).

Information Technology (IT) Skills: Students majoring in information engineering (or computer science) are expected to master a higher level of IT skills than the ones in other academic disciplines. Group Project Two in this course assesses students in terms of how they use computer programming instructions to perform sentiment analysis, how they select computational tools to visualize data, and how they present analysis results (A4). The building of blogs for individual e-Portfolio (A1) also assesses

students' skills in information and communication technology (ICT). To conduct the research for Group Project One (A3), students need to access databases of the United Nations Statistics Division and identify relevant datasets to generate infographics, which assess their information literacy skills.

Knowledge Application: The open lecture-notes format of the Final Exam (A5) avoids rote learning and ensures the critical application of theories and concepts covered in the course. Group Project Two (A4) examines the technical knowledge prescribed by the course. Group Project One (A3) requires students to "apply the knowledge in this course and make professional recommendations on how ICTs can be applied to solve or mitigate the issue…identified" (Project Specification 2017). Students need to justify their recommendations with principles in Human-Information Interaction and/or the nature of Information, and some of the core concepts covered in the course.

Reflection & Critical Thinking: The reflection of student learning is assessed in e-Portfolio (A1), where students reflect on why human information interaction – the subject matter of this course – is important to the engineering field. Using blogs to compile an e-Portfolio ensures timely reflection of students on the topic they learn along with the schedule of lecturers. As blogging is open to the general public, it also ensures students' understanding of newly acquired knowledge when they need to process complex concepts into simple language. The incentivised commenting (A2) on the blogs sustains such reflection on the concepts and theories of the course. In Group Project One (A3), students reflect upon the roles of engineers and global citizenship, by contemplating solutions to global problems.

Assessment Standards/Sample Rubrics

	Areas	*Exemplary*	*Accomplished*	*Beginning*	*Fail*
A3. Group Project One	Identification of Issue (20%)	Issue and multiple relevant SGDs and targets identified.	Issue and one relevant SGD identified.	Issue identified without mentioning the relevant SGDs.	No issue is identified.
	The Research (30%)	Relevant statistics obtained from the UNSD databases as well as other sources are presented to support the issue identification.	Relevant statistics obtained from the UNSD databases are presented to support the issue identification.	Relevant statistics obtained from other sources are presented to support the issue identification.	No statistics are included to support the issue identification.
	Policy Solution & Recommendation (30%)	Policy solution is well developed and is supported by an excellent understanding of social media; argument is logical and with the support of the statistics presented in Part Two. Recommendation on several relevant aspects is made; and is integrated into an innovative suggested solution.	Policy solution is tentatively asserted and is supported by a basic understanding of social media;; argument is sound and partially supported by the statistics presented in Part Two. Recommendation on several relevant independent aspects is made.	Policy solution is very basic and is not based on an understanding of social media; argument is presented without the support of any statistics. Recommendation on one relevant aspect is made.	No recommendation is made.

	Policy Report Organisation (20%)	A coherent and unifying theme is established and maintained throughout the entire policy report. Clear internal divisions (e.g., Part One, Part Two, and Part Three, and references) are created. Sections headings (and subheadings) are marked clearly. Relevant figures, tables, and references are given in the report.	Effort in establishing a coherent and unifying theme throughout the report is shown. Clear internal divisions (e.g., Part One, Part Two, and Part Three, and references) are created. Section's headings (and subheadings) are marked clearly. Some figures, tables and references are given in the report.	Report organisation is somewhat mechanical. Essential elements of the report (e.g., Part One, Part Two, and Part Three, and references) are present but without clear internal divisions. Sections headings (and subheadings) are present but do not enhance readability. Figures, tables, and references are barely included in the report.	Lack of organisation. Some of the essential elements of the report are absent. Internal divisions are unclear. No figures, tables, and references are included in the report.

Source: Interview with the teacher.

Teacher's Stories

Prof. Chan Yuen-Yan, Rosanna

Professional Engagements

Rosanna Chan received her BEng, MPhil, MEd and PhD degrees from the Chinese University of Hong Kong (CUHK). She served as an assistant professor in the Department of Information Engineering, CUHK from 2006 to 2007, and as a postdoctoral fellow in Strategic Research Theme in Sciences of Learning, HKU from 2008 to 2011. Rosanna possesses a multidisciplinary background in engineering, education, and learning sciences. Her research interests include engineering education, human factors in online social networks, and learning sciences. Rosanna founded the IEEE Education Society Hong Kong Chapter and is the Founding Chair. She is an Adjunct Assistant Professor in the Department of Information Engineering at CUHK.

Motivation

The need for consciousness and empathy for global issues might be one of the motives behind the unique coursework design. Prof. Chan wants her engineering students to rethink their professional identity and global responsibilities. As Rosanna stated,

> I ask the students to study the United Nations' Sustainable Development Goals, and to think about how engineering knowledge and skills can be applied to those goals; I force my students to think out of the box, to work in groups, and try to exercise what they have learnt outside of my own course; …I encourage them to bring in the additional knowledge that they (may have been) exposed to… for example, some students may take courses from Psychology Department… So I ask them to try to propose some engineering solutions to at least approach those goals, to make people's lives easier.
>
> (Teacher Interview, Jan 2018)

'Students' Side of Stories'

- "Whenever we search or download something, our actions will be stored as information, as data. These data can be analysed into some other useful materials. As engineering students, these materials can help us to understand the preference of users. As a result, other than suggesting some products to the users, we can design new products that are more to their liking. If we can prepare and provide service

before the user makes a request, services will be facilitated, and time will be saved. Convenience is all we, the engineers aim to achieve" (Student A, e-Portfolio, January 2017).

- "As human information is getting more important nowadays, we should know more about it and learn how to process such data and use them in the engineering field" (Student B, e-Portfolio, January 2017).
- "As engineering students, we have been learning how to design programs and circuits. However, it is not enough for us to become good engineers. To make a program user friendly, we need to listen to the opinion and feedback from users. Then, we need to know how to obtain useful information from this feedback. Therefore, learning how to design programs or circuits – this kind of hard skill is not enough. We should also learn how utilize the information we can get in this world" (Student C, e-Portfolio, September 2017).
- "To us, Engineering student, information is a tool for us to change the world. We find a way to identify the useful information from this world, give out responses and transmit them to others so that we can change the actions of others towards our desire. This is the ultimate goal as an Engineer" (Student D, e-Portfolio, September 2017).
- "In my AI module … the topic has hooked me up and now I am wanting to relate my further career to it. However, I realised I have very little understanding of fundamental concepts used on the background of any AI system – information, which motivated me to take up IERG3220. Just after a few classes I am able to structure my knowledge in regard to some topics that I could only understand intuitively before. Starting from the concept of context …, ending up with topics on human cognition … and how these affect the way we understand the input of data …" (Student E, e-Portfolio, September 2017).

References

IERG3320/ESTR3306. Social media and human information interaction – course outline (2017–18 Term 1).

IERG3320. Social media and human information interaction projects specification – project one: Social media and human information interactions from a global citizenship perspective.

IERG3320/ESTR3306. Social media and human information interaction project specification – project two: Sentiment analysis.

8.8 Case 8: "Experiential Learning in Social Ventures – Assessing Social Entrepreneurial Internship", Business School, University of Hong Kong, Hong Kong

Social Venture Management (SVM) offered at the University of Hong Kong (HKU) is an experiential learning course that gives students an opportunity to work directly for social ventures under the guidance of a business faculty instructor and professional mentors. Students have opportunities to manage teams, solve real-life problems, and gain hands-on business experience. These practical exposures aim to strengthen the generic skills of students, help them implement academic business concepts, and improve their competency in the job market. Students need to commit 10 hours per week over one semester to their respective companies. There is no class time or final examination. This course is open for students from all academic disciplines, including exchange students, thus encouraging inter-cultural learning. While local students are eligible for a formal internship over the duration of this course, exchange students are given supervised projects by the instructors pertinent to strategic aspects of SVM's partner social enterprises.

The partner social enterprises of SVM range from pre-incorporated ventures to more established charities and enterprises. A lot of the new social ventures look for students who are highly entrepreneurial and proactive. Students can also propose their own business ideas or grow their own social enterprises through SVM mentorship.

Distinctive Features

- Forming an "impact family,", i.e. a cohesive network of co-creating social impacts through university-led initiatives, with students to achieve something meaningful
- Integrating learning with practices of social entrepreneurship
- Making use of the process of starting up social ventures as a teaching tool for students

Intended Learning Outcomes (LO)

I Integrate and apply theoretical knowledge to tackle real business challenges

II Research, analyse, assess and propose practical business options and solutions given the project constraints

III Exchange ideas and experiences with partners, resolve differences, mutually enhance personal development and accomplish tasks through collaboration

IV Adjust to a real-life work setting and understand the organisational culture of a business
V Present findings and business solutions (both written and oral) in a professional and persuasive manner
VI Apply the knowledge in service leadership to improve their leadership quality and effectiveness

Coursework Teaching & Learning Activities

Pre-Internship Preparation

- Pre-Internship Orientation (1 hour, Week 1)
- First Meeting with Social Ventures' GM (1 hour, Week 1)
- Creation of Action Plan (5 hours, Week 1–2)

During Internship Learning

- Internship Work and Weekly Reports (120 hours, Week 3–12)
- Video Assignment (10 hours, Week 3–12)

Post-Internship Consolidation

- Exit Interview (optional; with GMs and Supervisors; 0.5 hours, Exam Week)

As a result of the internship, real-world business activities were organised by SVM interns, including cross-border corporate events as part of the social venture expansion, local corporate relations and volunteering events, craft workshops and cultural fairs, as well as social media commercials.

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Creation of Action Plan	Students start off with working with the instructor, TA, and their supervisor/ general manager to produce an Action Plan for their proposed activities and goals for the internship period. This Action Plan serves as the basis for tasks performed and should be reviewed and updated as the semester goes on. The Action Plan should be considered a 'living document', to be updated as the internship progresses, particularly as the scope of student responsibilities change.	5%	I. II.	Formative	Communication; Collaboration; Self-management
A2	Weekly Reports	During the internship, students need to capture in writing their perceptions, analysis, and integration of concepts and experiences relating to business management and service leadership. These reports should be focused both inwardly and on task competencies.	20%	I. II. III. IV. V. VI.	Formative	Problem solving; Self-management; Critical thinking
A3	General Manager Feedback Report	The general manager will give students ongoing feedback during the internship period and will produce a final report indicating the overall quality of student work performance.	50%	II. III. IV.	Formative & Summative	Problem solving; Self-management; Collaboration; Communication
A4	Video/ Writing Assignment	Students are required to make and post a video, or write essays, highlighting relevant aspects of the internship experience, or the company/ project for which the students worked. This can be individual work or group work among not more than 3 students.	25%	III. V. VI.	Summative	IT; Communication; Collaboration; Creativity

Assessment Type

Both formative and summative assessments are employed throughout the course. This combination of assessment methods captures student learning progressively and prompts timely reflection of students when they are involved in out-of-classroom activities.

Main Assessment Areas

Problem-solving Skills: students are expected to be entrepreneurial and to help manage the routine problems or unexpected challenges of social ventures. With partner-oriented assessment through periodic and final feedback reports compiled by the general manager (A3), students receive suggestions on their problem-solving skills for their self-reflection and ongoing improvement. The weekly reports (A2) then allow further space for students to write down their reflective analyses on the problem-solving process. Video making (A4) is also new to a lot of business/ social science students, testing their problem-solving skills.

Communication Skills: To create a feasible working Action Plan (A1), students need to communicate effectively with the social ventures to develop a clear mutual understanding of the expectation on the scope of work. Upon receiving periodic feedback reports from the general manager (A3), students are expected to actively seek feedback and suggestions for improvement. Based on such feedback and follow-up conversations between the manager and the course instructor, the course instructor then assesses the work performed by the student during the internship period. For the video assignment project (A4), students are advised to collaborate with their supervisor/manager concerning the nature, voice, or topic of their videos, so as to produce videos that will benefit the social ventures in some way. Proactive communication is thus assessed in multiple ways in this course.

Collaboration Skills: in this course, one partnering social enterprise often hosts several student interns in one semester to work in different areas of business development (e.g. Fair Employment Agency hosted four students – a marketing intern, a community engagement intern, a digital marketing intern and a Sunday domestic worker outreach volunteer – over one semester, while Baby Hero hosted five students – a visual strategy and interactive design intern, a business development intern, an e-commerce strategy intern, a centric strategy & social media intern, and an inbound marketing strategy intern).

Students who are placed at the same company therefore would work together to deliver business strategies/activities of the social ventures and to produce videos (A4) for the final assessment of the course. Collaboration

skills are thus essential and clear evidence can be observed and shown through the (A3) and (A4) assessments.

Service Leadership & Social Impacts Management: A lot of the students have signed up for the course as they are motivated by the possibility of finding a meaningful way to do real business and help the underprivileged. During the internship, students get the opportunities of establishing direct contacts with niche ideas for social impacts; general managers at the partner social ventures act as industrial mentors to cultivate the service leadership of students in finding new solutions for entrenched social problems. This interactive process is assessed through weekly reports (A2), feedback reports (A3), and the reviewed action plan (A1). The video production and publishing on social media (A4) engage students with the wider public in disseminating key messages of the social ventures.

Academic Knowledge: Students are expected to apply acquired knowledge in business management, accounting and marketing to operating real-world social ventures. This can be assessed by the general manager who has direct experience of how the student is handling practical business problems (A3). Students can also apply business concepts in analysing the problems they perceive or encounter during the internship, in the writing of weekly reports (A2) and action plans (A1).

Values for Reflection: Reflection on job performance is assessed in the weekly reports (A2). Reflection on personal growth and the work accomplished in the course is one of the suggested topics of the video project (A4). The short write-up as one of the deliverables of the video assignment project (A4) is also a way to push the students to further reflect upon what they have produced with the video – i.e. their inspirations, the purpose of the video, and what they have learnt from the process of making the video.

Assessment Standards/Sample Rubrics

	Indicators	*Above 90%*	*80%–89%*	*70%–79%*	*60%–69%*	*Below 60%*
A1. Action Plan	Time management	Timely submission.	Timely submission.	Late submission.	Late submission or nosubmission.	Very late submissionor no submission.
	Planning aptitude	Action Plan clearly summarises the objectives, actions, and success criteria for the student's work…	Action Plan adequatelysummarises the objectives, actions, and success criteria for the student's work…	Action Plan summarises the objectives, actions, and success criteria for the student's work, but not in a clear or informative way…	Action Plan fails to clearly summarise the objectives, actions, and success criteria for the student's work…	Action Plan fails to summarise the objectives, actions, and success criteriafor the student's work…
	Evidencing skills	Including many clear examples where appropriate.	Including some clear examples where appropriate.	Does not include any clear examples.	Does not have any examples.	Does not have any examples.
	Effective Communication	Displayed a clearunderstanding of the GM's expectations for the semester.	Displayed an acceptable understanding of the GM's expectations for the semester.	Displayed a vague understanding of the GM's expectations for the semester.	Displayed a lack of understanding of the GM's expectations for the semester.	Displayed a lack ofunderstanding of the GM's expectations, and unwillingness to effectively communicate with the GM.

(Continued)

	Indicators	*Above 90%*	*80%–89%*	*70%–79%*	*60%–69%*	*Below 60%*
A2. Weekly Report	Time management	Timely submission.	Timely submission.	Late submission.	Late submission or nosubmission.	Very late submissionor no submission.
	Reflection	Provided an excellentsummary of weeklytasks and goals, aswell as challengesfaced.	Provided a good summary of weekly tasks and goals, as well as challenges faced.	Provided a brief butclear summary ofweekly tasks and goals, as well as challenges faced.	Provided a brief andsomewhat unclearsummary of weeklytasks and goals, andchallenges faced.	Provided no orunclear summary ofweekly tasks and goals, as well as challenges faced.
	Entrepreneurship/ service leadership/ business insights	Showed a detailedand insightful analysisof leadership andimplementation ofbusiness knowledgewith many clearexamples.	Showed a detailed and adequate analysis of leadership and implementation of business knowledge with some clear examples.	Showed a brief butadequate analysis ofleadership andimplementation ofbusiness knowledgewith some examples.	Showed a brief and superficial analysis of leadership and implementation ofbusiness knowledgewit hout clearexamples.	Showed no or limitedanalysis on leadershipand implementation ofbusiness knowledgewith no examples.
	2 points per week = 1 point for working 10 hours for that week (unless otherwise agreed with your supervisor) + 0.5 pts for turning in the weekly report on time + 0.5 pts for a sufficiently comprehensive report in the suggested format					

Source: Bishop (2017).

	Dimensions	*Benchmarks*
A4. Video Assignment	Concept & Theme (10/25)	• the written submission is comprehensive and clearly explains the inspiration, process, etc • the video is interesting and educational • the concept and theme are relevant to the audience • the video provides insight into the topic • the main ideas are clearly delineated in the video • the video is entertaining • the video is creative and integrates creative elements
	Content & Organisation (10/25)	• the video is clearly planned out and organized • the video presents interesting information • language is used properly and effectively in the video • images and/or graphics relate well to content • student(s) behave professionally on camera (if applicable) • student(s) demonstrate a thoughtful approach to subject
	Quality & Technical aspects (5/25)	• camera is stable, smooth movements and pans • subject is framed well and images are well composed • subject is lit and clearly visible • sound is clear and understandable • video is edited effectively and flows well • titles are used effectively • transitions are used effectively • project was completed in a timely manner

Source: Bishop (2017).

Teacher's Stories

David Bishop

Professional Engagements

David Bishop holds a Juris Doctor from The Georgetown University Law Center, and a Bachelor of Arts in History and Mandarin Chinese from Brigham Young University. Besides teaching at HKU, David is an active social entrepreneur – he is the Founder of Soap Cycling and Social Impact Public Offering (Social IPO), and the Co-founder of Fair Employment Agency and Fair Employment Foundation. With legal practice qualification, he provides consultations to companies about ethics, corporate social responsibilities (CSR), pro bono, and social entrepreneurship initiatives. During his broad legal experience in the United States and China, David worked on major commercial mergers and acquisitions (M&A) deals, participated in negotiations, as well as acted as an outside counsel on various corporate matters for Multinational Corporations operating in Asia.

Motivation

The course coordinator of SVM, David Bishop, founded a number of the SVM partner social enterprises, namely Soap Cycling, Fair Employment Agency and Social IPO. Soap Cycling became the foundation of the course SVM and provided most of the social venture internship opportunities when the course was first offered.

- At the early stage of the Soap Cycling operation, David stated that "About a year and a half ago, I was trying to find better job opportunities for my students, and to learn leadership and management, and do real things."
- The process of starting up a social business is being turned into a teaching instrument to engage student learning. "I would say (Soap Cycling is) efficient, impactful and empowering. We get a lot done with very little inputs, in terms of economic inputs – we don't really ask for funding generally speaking."
- So we're really efficient in terms of what we can do. But we are also very impactful, because we can take that little amount of inputs going in, we can impact the lives in so many ways – we are able to do things for the environment, to help young people and empower them, and to work with NGO and to really boost their program and help them provide sanitation amenities to people who need it. **The reason I started this (Soap Recycling) initially was really as a teaching tool for my students at HKU, and I wanted to give them an opportunity to learn how to do real stuffs**."

(Bishop, 2017)

Ripple effects of social impact have been created since the social venture was founded and the SVM course was launched. Mutual learning between students and the teacher further inspires the teaching process.

- "The best thing I heard about Soap Cycling is that it has inspired other people to create businesses, to be entrepreneurial in ways that solve social issues. There have been a number of students that have left Soap Cycling and they have started their own social enterprises. We also have a whole bunch of other upcycling projects that have started in relation to Soap Cycling – recycling all kinds of things, sometimes fabrics, also soaps and soap bottles. So it has been great to see that people are taking the idea that we originally started with, and they are expanding it to ways that we wouldn't have thought of at first." (ibid)

Challenges

Teachers organising out-of-classroom experiential learning activities for students often bear enormous responsibilities. Effective responses with sensible solutions are critical when placement-related accidents happen. An accident on the factory floor of the soap recycling machinery took place when a student intern was on duty. As the course coordinator was travelling, some miscommunication about the incident occurred between the university management and the student.

Students' Side of Stories

- "I love working with the Baby Hero team, because of their enthusiasm and dedication to the work and the cause, and I am learning a lot from them" (Dec 2016, Video Assignment).
- "Interning with the expansion team has given me a different perspective on the time and effort that goes on behind the scene of running a social venture. Involving myself in both the Chow Tai Fok and Hilton events have [sic] taught me the values of planning ahead and being prepared. Overall this has been a great opportunity to learn new skills, make new friends, and most of all have a lot of fun" (Dec 2016, Video Assignment, an exchange student from Australia).
- "It's an opportunity to explore yourself, to get to know the part of you that you have never discovered. It is a change, and I love this change" (Dec 2016, Video Assignment).
- "The course was challenging academically, but great fun! I have been given the opportunity to solve real-life problems, to manage a team, and gain hands-on business experience. The team consisted of several different nationalities, which have been interesting and rewarding – and

this has also improved my communication skills. I felt valued during the semester, and therefore strongly motivated. I highly, and genuinely, recommend considering this course – if you want to improve your business skills, improve your communication skills, and implement academic business concepts in a practical way; this is the right course for you!." (an exchange student from Norway)

Featured Video

- SVM Course YouTube channel – collections of past Video Assignments: https://www.youtube.com/channel/UCOMO_tCDMgPb9MXBeJKlYpA/videos

References

Bishop, D. (2017). BUSI2812 Social venture management internship course. The university of Hong Kong. Available at https://docs.wixstatic.com/ugd/841666_7c0ff2e5afb8443ea57830e9f28ce64b.pdf

Course website: https://www.svmcourse.com/

8.9 Case 9: "Camping for Ornithology – Assessing Student Learning in a Field-Intensive Biology Class", Dalhousie University, Canada

Field trips constitute the main component of coursework in the Ornithology course (BIOL 3622) at Dalhousie University in Canada. The course is open to undergraduate students in Biology after their second year, with a total of 15 students in each class. It runs for two weeks (from Monday to Sunday) in the summer as part of the university's SEASIDE (i.e. Summer Education & Applied Science Institute at Dalhousie in Ecology) programme that offers ecologically relevant training of practical scientific techniques. With condensed lectures, team exercises, hands-on labs and eight days in the field, students gain an overview of avian biology and techniques for the scientific study of bird populations, including identification by sight and sound. All the lectures and labs are planned in the first week to prepare students for the field trips.

The field trips cover a one-day study in Halifax and a full-week camping at a field station in southwestern Nova Scotia to conduct research on birds in their natural habitats. This field-intensive class is hands-on and applied, where students gain practical experience with textbook knowledge.

Distinctive Features:

- Featuring a wide diversity of practical learning activities through a combination of lectures, labs, a virtual field trip, and duo field visits
- Engaging students comprehensively with three versions of field trips and team-based project work
- Stressing on the values of learning by doing hands-on exercises

Designed Learning Outcomes (LO)

I Explain the behavioural, morphological, and physiological characteristics that distinguish the Class Aves from other animal taxa
II Identify and understand general themes in avian ecology and evolution (e.g. communication, mating, foraging, feathers, flight)
III Appreciate the conservation issues affecting bird species, populations, and communities
IV Identify most Nova Scotia Forest bird species (and others) by sight and sound
V Generate relevant and detailed field notations of bird behaviour
VI Integrate knowledge of principles and methods into the design and implementation of a research project that effectively addresses a research question about bird ecology
VII Communicate scientific ideas effectively both in writing and through oral presentations

Coursework Teaching & Learning Activities

- Pre-departure Lectures (4 sessions, 3 hours each, Day 1–4) & Lecture Test (Day 6)
- Pre-departure Labs (4 sessions, 4 hours each, Day 1–4)
- Virtual Field Trip: Long Point Bird Observatory Migration Monitoring Bird Banding Station – live demonstration over a video conference call with an active banding operation (1 hour, Day 3)
- Field Trip 1: Dingle Park in Halifax – practicing field skills with notebook entries (Day 5)
- Field Trip 2: full-week camping at a field station in southwestern Nova Scotia (Day 7–13)
    - Surveys of bird (e.g. owls) habitats
    - Practicing field methods;
    - Team field projects (Day 9–12)
    - Field ID Quiz (Day 13)
- Post-trip Summary:
    - Data analysis & report preparation (Day 14)
    - Symposium of class presentations (Day 15)

Source: Dalhousie University (2017) Course Syllabus.

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Lab Exercises & Write-ups	Students are required to write up reports of their 4 lab exercises.	20%	I. II. VII.	Formative	Communication; Study Skills
A2	Lecture Test	There is a test after all lectures on the knowledge of avian biology.	25%	I. II.	Summative	Study Skills
A3	Field Quiz	At the end of the full-week field trip, there is a Field Quiz on species identification. Students should be able to identify birds by sound and sight. They are allowed to use their binoculars, field guides, notes and notebooks.	10%	I. II. IV.	Formative/ Summative	Problem Solving; Study Skills
A4	Symposium Presentation	In the field, students work in teams of 3 to propose and implement team research projects. Each team conducts a 15-minute oral group presentation of the field research projects during the final symposium. There are 10 minutes for each team to receive and answer questions.	10%	I. II. III. V. VI. VII.	Summative	Collaboration; Communication; Critical Thinking; Study Skills
A5	Symposium Participation	Individual participation during the final symposium is assessed, given each student's performance in asking questions, stimulating discussion, and making useful comments or suggestions about classmates' presentations.	5%	III. VII.	Formative/ Summative	Collaboration; Communication; Critical Thinking; Self-management
A6	Field Notebook	Students need to develop the skills of taking careful, accurate, complete, neat, and well-organised notes. In the field, they are required to record all pertinent sightings and other information from field trips in real time.	15%	I. II. IV. V.	Formative	Critical Thinking; Self-management; Study Skills
A7	Field Project Data Report	Each team summarises the data collected for their research project in a Data Report. One report is submitted per group.	15%	I. II. III. V. VI. VII.	Summative	Collaboration; Communication; Critical Thinking; Problem Solving; Study Skills

Assessment Type

A wide variety of formative and summative assessments are adopted in this course to enhance student experiences through engaged and practical learning. They carry relatively equal weighting.

Main Assessment Areas

Holistic Competencies: Designed with learning by doing, this field-intensive class focuses on developing students' hands-on aptitudes and problem-solving skills. The course LO also specifies the importance of enhancing students' communication skills in terms of interpreting complex scientific ideas in both verbal and written ways. These are assessed through written reports of lab exercises (A1) and field reports (A7), as well as symposium presentations (A4) and participation (A5). Constructive mutual learning is encouraged through the symposium participation (A5) assessment that gives credit to students for raising questions and stimulating discussions. Students in the field are also engaged collaboratively, by forming a team of 3 to formulate research ideas and implement a research plan in the field team research project. The outcomes of collaboration are presented in a final symposium (A4).

Knowledge Application: This field-intensive class is also delivered by research-informed teaching. Integrating knowledge of principles and methods into the design and implementation of a field research project is an important course LO. To equip students with sufficient discipline-specific knowledge, there are focused and condensed lectures for them prior to entering the field.

Their knowledge acquired from lectures is then assessed in a Lecture Test (A2). This newly acquired knowledge is also practiced in lab sessions (A1) before actual field experience. At the end of the field trip, students' knowledge in avian biology is once again examined by the Field Quiz (A3). The students then need to come up with a research question to be addressed by applying their knowledge in the field. They carry out the field research project by integrating knowledge, methods and practices. The result of this research project is presented and reported at the end of the field trip (A4 & A7).

Reflection: Students are required to prepare and compile their own Field Notebooks (A6). The notebooks should contain documentation of field experience featured with focal observations of the unexpected, which facilitate self-reflection of students during and after their field trips. In the final report (A7), students are also asked to reflect upon if they have any recommendations for future studies based on their field team research project. The final symposium provides a platform for sharing and reflection, with project presentation (A4) and assessment of student participation (A5). Students are encouraged to ask constructive questions to their peers to stimulate reflective discussion.

Assessment Standards/ Sample Rubrics

Selective assessment approaches and criteria:

	Criterion	*Marks*
A6. Field Note	**Format and organisation:** – Cover formatting (name, contact information and addresses); – Page numbering; – Timestamp (continental dating system) and page subtitles – Table of Contents requirements; – Neat and easy-to-read writing; – Clearly-defined and consistently-used codes;	3 out of 15
	Documentation of field trips: – pertains to all 'official' field trips, when the class was together, led by instructor – ancillary information is accurate and complete – location, date, start time, end time, weather conditions – habitat described or classified (environment, tree species, vegetation structure) – bird species detected and whether you saw or heard the bird (or both), or whether heard or seen (or both) by the other people; indicate the type of sounds if heard	3 out of 15
	Focal observations: – at least ten entries, each for a different species or activity/event; many are opportunistic and some are from class "field" activities or events (e.g. swifts going to roost, owl surveys, etc.) – at least five should be detailed descriptions of the behaviours of birds you observed closely – pose questions about what you're observing and propose potential ecological and evolutionary explanations – each should be at least one page long	3 out of 15
	Species summary section: – put species on the left side (each should appear only once) and leave the right side blank for all places & habitats encountered – species AOU(American Ornithologists' Union)-code (same as used elsewhere in the book, common name, Latin name, Family) – places and habitats where species were found during field trips	3 out of 15

	Criterion	*Marks*
A4. Presentation	**Sounds summary section:** – vocalisations and/or non-vocal sounds of each species encountered, and whether heard or not – each described in a distinctive way that will allow you to identify the species; can be based on field observations, book descriptions, or sound collections (CD or web) – sources of each description attributed in a concise way (consider using codes or symbols) – proper use of terminology (type of sound: songs, calls, drumming, winnowing, etc.)	3 out of 15
	Content: – clear explanation of research question, rationale and background, methods, data analysis, and interpretation	5 out of 10
	Format: – audio-visual aids, organisation, speaking style, and overall presentation effectiveness	5 out of 10
A7. Field Report	**Completeness and clarity:** The project report should include: Project Title; Names of Researchers; Timeframe of Research (dates and times of data collection); Project Rationale; Research Question; Specific Research Objectives; Species studied and relevant ecological details; Study location and habitat types; Techniques used to collect data; Description of data collected; Results (included as appropriate figures, photos, maps, etc.); Conclusions; Recommendations for future studies	15

Source: Dalhousie University (2017) Course Syllabus.

Teacher's Stories

Dr. Cynthia A. Staicer
Dr. Sarah E. Gutowsky

Professional Engagements

Cynthia Staicer holds a Master of Science from Northern Arizona University, and a PhD from the University of Massachusetts, Amherst. She is the faculty member in charge of the SEASIDE summer programme.
Sarah Gutowsky holds a PhD in biology from Dalhousie University. She teaches part-time at the university while providing freelance consulting, and expedition guiding services.

Motivation

This course is delivered with research-informed teaching. Its design is driven by the research interests of Staicer (2018) in the development of ecological monitoring programme, the effects of forestry and recreation on bird populations, and the use of vocal behaviour of male birds to identify their breeding status.

Students' Side of Stories

- "Ornithology is the best class I have taken thus far. Your interest in birds increases at least ten folds. Dr. Staicer really makes you have an understanding and respect for the winged beauties. When you go outside after the class you know what species are singing and calling. Walking in the woods is not the same anymore!." (Anonymous student rating, 2008)
- The course is "focused, intense, and exciting. Exactly what was needed to learn the abundance of information presented in the class." (Student A, official student rating 2014–2015)
- "This particular course was almost entirely outside my discipline as a Marine Biologist. As such I was a little nervous to be going into a terrestrial field setting where I have less general knowledge. However, Sarah soon made it clear that that would not be an issue. The way in which she showed genuine interest in the students' understanding of the practical material was excellent. She was knowledgeable,

approachable, and gave a definite sense of direction to all field activities but without sucking the fun out of them. She also fostered curiosity and welcomed students to share and discuss their opinions. … The field portion of this class was incredibly well organized, I was never once stressed due to lack of direction or preparation. I had so much fun and learned so much, I really can't stress enough how much I enjoyed this class. It was in large part due to Sarah, and I would jump at the chance to work with her again." (Student B, official student rating 2014–2015)

- "Sarah was one of the best professors I have ever had. She genuinely cared about every student in her class and focused every ounce of her energy to our learning and understanding of the material. The first day of class all the students were asked what they knew about birds and almost everyone said they knew nothing. It is now the last day of the course, and every member of the class has increased their interest and enthusiasm about birds drastically. There are many courses in university where there is no connection between the professor and their students, but this course was the complete opposite. I can absolutely say that I gained memories, experiences and knowledge that I will never forget!." (Student C, official student rating 2014–2015)
- "…For me, she is the epitome of a role model, in terms of a female biologist. The field trip made us feel like a tight knit group. It was so much fun." (Student D, official student rating 2014–2015)

Featured Videos/ Photos

- A slideshow of photos from the field is available on https://sarahgutowsky.weebly.com/teaching.html

References

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8.10 Case 10: "Understanding Interconnections between Water Resources and Water Engineering – Assessing Overseas Engineering Field Trip," University of Washington, the United States of America

"Engineering Jordan: Water in an Arid Land" (CEE 497/ CEE 598/ ESRM 490) is a credit-bearing elective course co-sponsored by the Department of Civil and Environmental Engineering and the School of Environmental and Forest Sciences at the University of Washington (UW), in partnership with the Jordan University for Science and Technology (JUST). UW students in engineering, science, or in environmental science and resource management can learn about the connections between water resources and water engineering in one of the most water-scarce nations in the world, Jordan. They also get to interact with Jordanian students, scientists, and engineers. There are around 8 UW students and 8 JUST students in the course.

Primary learning is through field visits to water resources, drinking water treatment plants, and wastewater treatment plants located throughout Northern Jordan. This learning is supplemented by seminars delivered by guest speakers representing local water professionals, government, and academics.

Distinctive Features

- Exploring the unique ecological landscapes and archaeological sites in Jordan
- Fostering cross-country knowledge-exchange partnership with local stakeholders in Jordan
- Interacting with local students and academics

Designed Learning Outcomes (LO)

I Provide students with the contextual background to apply critical thinking skills to water engineering problems on a regional scale and in an international context

II Discuss interconnections among water source, water treatment, and wastewater reclamation using a specific example in Jordan

III Describe water sources in Jordan and the demands placed upon them from 1st-hand observations

VI List the steps in water treatment and wastewater treatment, and describe the function of each step

V Diagram an ancient water engineering system and use modern engineering theories to postulate how the ancient system may have worked
VI Identify water resources and treatment plant operations that are affected by high ambient temperatures, by application of core engineering principles
VII Identify cultural traditions and practices that impact water engineering in Jordan
VIII Work in cross-cultural teams to achieve scientific outcomes
IX Define "Cross-cultural Competency" within a science and engineering collaborative working setting based on personal experience
X Communicate science or engineering ideas to a targeted audience within a cross-cultural setting
XI Prepare a compendium of notes and knowledge in a single resource (i.e. notebook) that can serve as a reference for future course work and professional practice

Coursework Teaching & Learning Activities

- Pre-departure Lectures (1 hour per week; 10 weeks): theoretical and logistic introduction; culture, language and history of Jordan; quiz;
- Pre-departure Technical Field Trip around water treatment facilities across Washington State, the United States (minimum 2 hours)
- Summer field trip in Jordan (4 weeks) to solve local water engineering problems

1 Campus orientation & tour at JUST
2 Lecturers delivered by invited Jordanian academics & practising engineers
3 Technical tours
4 Cultural tours
5 Group activity on water governance
6 Irbid city tour (optional)
7 Overnight stays around Dead Sea & Wadi Rum/ Petra
8 Hiking
9 Project meetings with instructors
10 Quizzes
11 Student Project Presentations

Source: UW (2018) Program Brochure.

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Classroom & Field Trip Participation	Attendance is mandatory for all the academic activities in this course, including lectures, discussions, field trips, etc. Students are expected to actively participate in the academic activities in order to receive full score on this measure.	10%	I. II. III. VI. VII.	Formative	Collaboration; Communication; Critical Thinking; Self-management
A2	Study Logs	Students are required to keep a log recording all their thoughts and questions related to the course. Study logs are collected weekly on rotational basis. The recorded individual thoughts form the basis of small group discussion (A3).	20%	I. – VII. XI.	Formative	Communication; Critical Thinking; Self-management
A3	Group Discussion Participation	In Jordan, students are to participate in 2–3 small group discussions each week regarding reading materials and field visits. Groups need to share their discussion results with the entire class.	15%	I. – IV. VIII. IX. X.	Formative	Collaboration; Communication; Critical Thinking; Problem Solving; Study Skills

A4	Problem Sets	Students are assigned 4 to 6 computational or descriptive problems based on the course materials. These problem sets are designed to be completed within 1–2 hours. Students may need to work individually or in groups.	20%	I. III. IV. VIII. IX.	Formative	Collaboration; Communication; Critical Thinking; IT; Problem Solving
A5	Quizzes	Students are given a total of 3 quizzes at intervals along with course lectures.	20%	I. II. IV. V. VI.	Formative & Summative	Critical Thinking; Study Skills
A6	Group Project & Presentation	Students are to work in small teams and choose one topic from a list of unit areas to complete an in-depth exploration. At the end of the field trip, there is an oral presentation where the project teams act as the experts on their selected topic and teach the rest of the class about it. Teams may opt for making a YouTube-style video to replace the oral presentation, but approval needs to be obtained in advance. In preparation for the presentation, the project teams can meet with the instructors periodically to get feedback on their work and additional resources.	15%	I. – vX.	Formative & Summative	Collaboration; Communication; Creativity; IT; Critical Thinking; Problem Solving; Study Skills

Assessment Type

A wide variety of assessment approaches are developed in this course, combining both formative and summative assessments. It is unusual that the formative ones make up the largest part of the course assessment and carry the highest weighting.

Main Assessment Areas

Holistic Competencies: Applying critical thinking skills in a new problem context and cultural setting is the core learning objective designed for this course. All of the assessment approaches (A1 – A6) are targeting this learning area. Another set of focus in the development of holistic competencies in this course is on communication skills. With active classroom participation (A1), group discussions (A3) and group project presentations (A6), students are expected to communicate their science or engineering ideas verbally and proactively. Team-based problem-solving skills are also stressed. The problem sets (A4) are designed specifically for training the problem-solving aptitude on site. The fourth holistic competency being highlighted is creativity. The assessment of the group projects (A6) takes into account the creativity of student teams in terms of the appeal of graphical and visual presentation of scientific subjects.

Cross-cultural Teamwork: Students get to enhance their collaboration skills in group discussions (A3), team-based problem-solving activities (A4), project meetings, and group projects (A6). In particular, through interacting with Jordanian students, WU students experience cross-cultural teamwork and develop "cross-cultural competency within a science and engineering collaborative working setting based on personal experience" (WU 2018).

Knowledge Application: This course aims to help students apply engineering principles and equations in the analysis of water resources and use modern engineering theories to postulate the work of ancient water units in Jordan. The scientific content is the assessment focus of group projects (A6) where students are expected to clearly explain or demonstrate evidence that the team has studied and understands the topic focus.

Reflection: The Study Log (A2) records the thoughts that students come up with as the course field trip proceeds. This facilitates students' reflective journeys along their physical footsteps. The reflective thoughts of students build up the basis for group discussions in class (A3). Reflection then becomes a recurring learning process.

Assessment Standards/ Sample Rubrics

	Grade Descriptors	*Marks*
A2. Study Log Report/ Portfolio	• Thoughtful notes with signs of critical thinking, observations, and questions focused on the course goals. Evidence of activities to answer one's own questions. Preparation for discussions is evident. Shows improvement based on previous instructor comments.	4
	• Some questions for discussions lack in-depth thought or independent thinking. Shows improvement based on previous instructor comments.	2
	• Some notes, no clear evidence of discussion preparation.	1

Source: UW (2013) Course Syllabus.

	Areas	*Marking Criteria*	*Marks*
A6. Project	Scientific Content	• Scientific elements are clearly explained or demonstrated. There is strong evidence that the team has studied and understands the topic focus.	50%
	Presentation	• The presentation is neat, organized, and well-rehearsed.	30%
	Creativity	• The presentation is graphically or visually interesting. • Engaged audience through the: use of verbal cues (tone, pitch and pace of speech); use of non-verbal cues to highlight presentation (body language, facial expression, hand gestures, and eye contact); • Provided sufficient information within the timeframe in a logical and structured manner	20%
	Bonus	• Materials from field trips are incorporated into the presentation in meaningful ways (such as photos), or other considerations at the instructor's discretion.	Up to 5%

Source: UW (2013) Course Syllabus.

Featured Videos

- Photo gallery of the 2013 field trip http://courses.washington.edu/ce-jordan/photos.html
- Student photographs of 2014 field trip http://www.anxhuynh.com/jordan/c96jmcauwdy9p20ww31qokhxfajh5c
- Student blog post of the field trip in 2012 with photos and a video http://seattletojordan.blogspot.com

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8.11 Case 11: "Ready for the Chemical Industry? – Assessing Chemistry Internship Experience", National University of Singapore, Singapore

Final Year Internship in Chemistry (CM4299) is an elective of 16 credits for final year undergraduate students majoring in chemistry at the National University of Singapore (NUS), in which students are required to work full time in a chemistry-related industry for six months (a minimum duration of 22 weeks). The detailed scientific merit of the actual work performed is not directly assessed. This credit-bearing internship is letter-graded, i.e. not merely pass or fail. To get a passing grade, the intern must prove that they have achieved the intended learning outcomes through proper maintenance of a reflective journal during the internship. The student while doing the internship is not allowed to undertake any other modules even during weekends or at night.

This course only accommodates local and self-sourced internships.

Distinctive Features

- Giving initiatives to the students in sourcing the internship to experience job searching process
- Stressing on quality assurance of the provision of approved internship by dispatching staff visits at the workplace, collecting student feedback and work-progress logs, and compiling on-site evaluation reports
- Examining internship performance cautiously by balancing the workplace supervisor's view with the holistic view of selected academic examiners on student learning

Designed Learning Outcomes (LO)

I [Communication] Demonstrate a satisfactory ability to communicate rationally and logically, concisely, clearly and effectively the nature of the internship and the intern's learning outcomes
II [Overall performance in the workplace] Discover and adopt the desired work attitudes, ethics, safety culture and professionalism through working interactions with supervisors, co-workers, clients and other people related to the organisations and institutions where the internship is conducted
III Integrate knowledge and skills learned at the NUS into a workplace professional setting
IV Reflect on the skills learnt and their impacts on the intern's personal and career development
V Reflect and improve upon the intern's performance in the workplace

Coursework Teaching & Learning Activities

Pre-internship Procedures

- Annual module briefing (late Jan/ early Feb)
- Students seeking internship opportunities from companies
- Internship offers
- Internship approvals by the course coordinating committee
- Students accepting the approved internship offers & informing module administrator about such decision
- Assigning a Staff Advisor to each student intern by the coordinating committee
- Pre-internship Briefing
- Signing the Internship Learning Contract

Internship

- Quality assurance: Staff Advisor's visit at workplace, meeting with the intern supervisor, and filling out an On-site Evaluation Report (Week 6; compulsory)
- Staff Advisor's follow-up meeting (if necessary)
- Performance examination & Internship Quality Assurance Report by two examiners chosen by the committee and the Staff

Source: NUS (2018) CM4299 Guidelines.

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Fortnightly log submissions	The student is expected to submit a total of 11–13 work progress logs via email to the Staff Advisor. Each log is submitted fortnightly and each successfully received log is graded by the Staff Advisor. All progress logs are weighted equally. The fortnightly log should normally consist of about a paragraph briefly stating what progress the student has made at work over the previous fortnight, and record how many entries the students have made in their Reflective Journal[a] over the previous fortnight. The log serves as part of the quality assurance and should be included in its entirety in an appendix of the Internship Report.	5%	I.	Formative	Communication; Critical Thinking; Problem Solving; Self-management
A2	Performance assessment by workplace supervisor	An assessment of the student's work performance is carried out by the intern's workplace supervisor at the end of the internship. Workplace supervisors need to fill in an assessment form, which the coordinating committee translates into marks.	25%	II.	Summative	Collaboration; Communication; Creativity; Critical Thinking; IT; Problem Solving; Study Skills
A3	Portfolio Presentation	An individual presentation (25–30 minutes) on the portfolio is delivered by each student at the end of the internship to the examiners. It should cover introduction of company profile; description of job responsibilities; outline of internship progress and deliverables; portfolio explanation.	10%	I. III. IV. V.	Summative	Communication; Critical Thinking; Problem Solving; Self-management; Study Skills

A4	Internship Report	A report (in less than 2,800 words) is submitted at the portfolio presentation, which serves as a context for student learning and for the quality assurance purpose. Students are advised to give attention to how knowledge and skills learnt at the NUS are applied in the workplace.	10%	I. III.	Summative	Communication; Critical Thinking; Problem Solving; Self-management; Study Skills
A5	Portfolio	The portfolio consists of (not more than 8) items judiciously selected by the student. Compulsory items are a list of items, a reflective essay of no more than 2,500 words, and at least 2 extracts from the Reflective Journal[a] as evidence of learning outcomes. Students may include additional non-perishable items, but each additional item requires an explanation and justification in the Reflective Essay.	30%	I. III. IV. V.	Summative	Communication; Creativity; Critical Thinking; Problem Solving; Self-management; Study skills
A6	Examiners' Impression of Overall Student Learning	The first 10% portion of the 20% weighting is by default identical to the result of A2 after converting it into the same weighting. This portion might be adjusted in case the workplace supervisors give unjustified extremely low/high marks, or inconsistent marks. All supervisor marks are reviewed by the board of examiners. The other 10% portion is a grade for overall student learning achieved during the internship, by observing the student's performance in all the other assessment methods above (A1,3,4,& 5).	20%	II. III. IV. V.	Summative	Collaboration; Communication; Creativity; Critical Thinking; IT; Problem Solving; Self-management; Study skills

a Maintaining a Reflective Journal during the internship is considered central to the assessment of this course; however, the Reflective Journal itself is not directly assessed. Considering the personal nature of such a journal, it is not required to be presented or explained in its entirety or in detail. It anyhow serves as a source of evidence for the achievement of intended learning outcomes and needs to be inspected by the examiners at portfolio presentation (A3). Students are required to submit selected extracts of their own journals as part of their portfolios (A5).

Assessment Type

Most of the graded assessments in this course are of summative nature. The formative assessment is either not directly graded (i.e. the Reflective Journal) or carries little weightage (A1). Performance of the student intern is assessed in an all-rounded way by the coordinating committee, the selected examiners, the Staff Advisor, and the workplace supervisor. Apart from assessing students, the assessments also serve as quality assurance instruments for course delivery and internship providers.

Main Assessment Areas

Holistic Competencies: The pre-internship briefing session makes students aware of the "additional skills they have picked up, or enhanced, during their tenure at the NUS" (NUS, 2018). The intended learning outcomes have identified the importance of generic skills in personal and professional developments (LO III & IV). Holistic competencies are assessed by the internship supervisors in the workplace performance assessment form (A2). Essential assessment items include the ability to learn, initiative taking and creativity, reliability, communication skills, critical thinking skills, leadership abilities, as well as interpersonal and teamwork skills. In the internship report (A4), students are advised to give attention to how skills learnt at the NUS are applied in the workplace. Students are expected to show or highlight how they translate a number of skills into the workplace. In the preparation of the portfolio (A5), students are assessed in terms of how their acquired skills are translated into the workplace, as well as their reflections on skill learning.

Knowledge Integration: The integration of knowledge in professional settings is identified as one of the intended learning outcomes (LO III). This is assessed in the internship report (A4). Employment of technical skills as part of the knowledge of a chemistry degree is assessed in the workplace supervisor assessment (A2).

Reflection: The course learning outcomes have attached significance to reflection (LO IV. & V.). Reflective practices are integrated into the course assessment, through the maintenance of a reflective journal by individual student interns and the writing of a reflective essay in the final portfolio (A5). The reflective component is purposefully designed in the course and is justified by pedagogical studies. The course design is informed by research findings on how reflective writing can sharpen students' learning experience (Biggs & Tang 2011, p. 262).

Assessment Standards/Sample Rubrics

Each assessment approach (A1–6) in this internship course has its own rubric(s) and assessment criteria. This case study selects two sets of rubrics as a sample for the readers' reference. The selection is made given the quality and robustness of rubric design, as well as the assessment weighting in overall grading. The rubrics for performance assessment by workplace supervisors (A2) and the portfolio (A5) are thus chosen.

	Evaluation Dimensions	*Performance Rating*		
		Needs Improvement	*Meet Expectations*	*Excellent*
		1 2	*3 4*	*5 6*
A2 [1]. Supervisor Evaluation	Achievement of Objectives and Deliverables	Accomplished few if any objectives as specified in the internship agreement	Accomplished most objectives as specified in the internship agreement	Met or exceeded all objectives as specified in the internship agreement
	Quality of Work	Work was done in a careless manner and was of erratic quality; work assignments were usually late and required review; made numerous errors	With a few minor exceptions, adequately performed most work requirements; most work assignments submitted in a timely manner; made occasional errors	Thoroughly and accurately performed all work requirements; submitted all work assignments on time; made few if any errors
	Ability to Learn	Asked few if any questions and rarely sought out additional information from appropriate sources; was unable or slow to understand new concepts, ideas, and work assignments; was unable or unwilling to recognise mistakes and was not receptive to making needed changes and improvements	In most cases, asked relevant questions and sought out additional information from appropriate sources; exhibited an acceptable understanding of new concepts, ideas, and work assignments; was usually willing to take responsibility for mistakes and to make needed changes and improvements	Consistently asked relevant questions and sought out additional information from appropriate sources; very quickly understood new concepts, ideas and work assignments; was always willing to take responsibility for mistakes and to make needed changes and improvements
	Initiative and Creativity	Had little observable drive and required close supervision; showed little if any interest in meeting standards; did not seek out additional work and frequently procrastinated in completing assignments; suggested no new ideas or options	Worked without extensive supervision; in some cases, found problems to solve and sometimes asked for additional work assignments; normally set his/her own goals and, in a few cases, tried to exceed requirements; offered some creative ideas	Was a self-starter; consistently sought new challenges and asked for additional work assignments; regularly approached and solved problems independently; frequently proposed innovative and creative ideas, solutions, and/or options

(*Continued*)

	Evaluation Dimensions	*Performance Rating*		
		Needs Improvement	*Meet Expectations*	*Excellent*
		1 2	*3 4*	*5 6*
A2 [1]. Supervisor Evaluation	Character Traits	Was insecure and timid, and/or regularly exhibited a negative attitude; was dishonest and/or showed a lack of integrity on several occasions; was unable to recognise and/or was insensitive to ethical and diversity issues; displayed significant lapses in ethical and professional behaviour	Except in a few minor instances, demonstrated a confident and positive attitude; regularly exhibited honesty and integrity in the workplace; was usually aware of and sensitive to ethical and diversity issues on the job; normally behaved in an ethical and professional manner	Demonstrated an exceptionally confident and positive attitude; consistently exhibited honesty and integrity in the workplace; was keenly aware of and deeply sensitive to ethical and diversity issues on the job; always behaved in an ethical and professional manner
	Dependability	Was generally unreliable in completing work assignments; did not follow instructions and procedures promptly or accurately; was careless, and work needed constant follow-up; required close supervision	Was generally reliable in completing tasks; normally followed instructions and procedures; was usually attentive to detail, but work had to be reviewed occasionally; functioned with only moderate supervision	Was consistently reliable in completing work assignments; always followed instructions and procedures well; was careful and extremely attentive to detail; required little or minimum supervision
	Attendance and Punctuality	Was absent excessively and/or was almost always late for work	Was never absent and almost always on time; or usually reported to work as scheduled, but was always on time; or usually reported to work as scheduled and was almost always on-time	Always reported to work as scheduled with no absences, and was always on-time

A2 [1]. Supervisor Evaluation - Degree-Level Assessment Rubric			
Organisational Fit	Was unwilling or unable to understand and support the organisation's mission, vision, and goals; exhibited difficulty in adapting to organisational norms, expectations, and culture; frequently seemed to disregard appropriate authority and decision-making channels	Adequately understood and supported the organisation's mission, vision, and goals; satisfactorily adapted to organisational norms, expectations, and culture; generally functioned within appropriate authority and decision-making channels	Completely understood and fully supported the organisation's mission, vision, and goals; readily and successfully adapted to organisational norms, expectations, and culture; consistently functioned within appropriate authority and decision-making channels
Response to Supervision	Rarely sought supervision when necessary; was unwilling to accept constructive criticism and advice; seldom if ever implemented supervisor suggestions; was usually unwilling to explore personal strengths and areas for improvement	On occasion, sought supervision when necessary; was generally receptive to constructive criticism and advice; implemented supervisor suggestions in most cases; was usually willing to explore personal strengths and areas for improvement	Actively sought supervision when necessary; was always receptive to constructive criticism and advice; successfully implemented supervisor suggestions when offered; was always willing to explore personal strengths and areas for improvement
Technical Skills	Had difficulty in understanding and applying quantitative methods appropriate to the job; exhibited limited facility with relevant information technology, including word processing, spreadsheet, and presentation software, in the development of work products and the completion of work assignments	Satisfactorily employed quantitative methods appropriate to the job; in most cases, adequately utilised relevant information technology, including word processing, spreadsheet, and presentation software, in the development of work products and the completion of work assignments	Effectively employed quantitative methods appropriate to the job; successfully and proficiently utilised relevant information technology, including word processing, spreadsheet, and presentation software, in the development of work products and the completion of work assignments

(*Continued*)

	Evaluation Dimensions	*Performance Rating*		
		Needs Improvement	*Meet Expectations*	*Excellent*
		1 2	*3 4*	*5 6*
A2 [1]. Supervisor Evaluation - Degree-Level Assessment Rubric	Written Communication Skills	Written work products displayed inadequate organisation and/ or development making the work difficult to follow; the written work products exhibited multiple errors in grammar, sentence structure, and/or spelling; unacceptable writing skills (e.g., weaknesses in language facility and mechanics) hindered readability and contributed to ineffective work products	Written work products exhibited satisfactory organisation and development; written work products were readable and easy to follow with only a few lapses; used good language conventions and mechanics with a few minor errors in spelling, grammar, sentence structure, and/or punctuation; written work products met expectations in this area	Written work products were effectively organised and developed and were easily understood; readability of written work products was enhanced by facility in language use, excellent mechanics, and syntactic variety; used language conventions effectively (e.g., spelling, punctuation, sentence structure, paragraphing, grammar, etc.)
	Oral Communication Skills	Presentations could not be understood because there was no logical sequencing of information; intern used superfluous or no graphics; graphics did not support or relate to work assignments; intern read most or all of the work assignment information with little or no eye contact; intern mumbled, incorrectly pronounced terms, and/or spoke too quietly; presentations rambled, were unclear, and could not be followed by the audience; intern lacked confidence, was uncomfortable, and could not answer basic questions	Work assignments were presented in a sequence that the audience could follow; graphics supported and were related to the work assignments; intern maintained eye contact with the audience with a few minor exceptions; intern read from notes on a few occasions; intern used good voice dynamics and clearly enunciated terms; intern was comfortable for the most part and adequately answered questions; overall, the presentations were delivered in a satisfactory manner and met expectations with respect to oral communication skills	Work assignments were presented in a logical, interesting, and effective sequence, which the audience could easily follow; presentations used effective graphics to explain and reinforce the information presented; intern maintained eye contact with the audience, seldom returning to notes; intern spoke in a clear voice and used correct, precise pronunciation of terms; presentations were thorough, clear, compelling, informative, and professionally delivered; intern was confident, comfortable, and answered questions effectively

A2 [1]. Supervisor Evaluation - Degree-Level Assessment Rubric				
	Analytical/ Critical Thinking Skills	Presented little if any analysis in work assignments; rarely sought out additional information from other sources and/or considered differing perspectives; presented few solutions, alternatives, or options to problems in work assignments, or solutions, alternatives, or options were often inaccurate, inconsistent, and/or not justified; ideas were presented in a vague manner	Adequately assessed and presented information from some sources and perspectives with only minor inconsistencies, irrelevancies, or omissions; satisfactorily outlined solutions, alternatives, or options for some work assignment problems that were logical and consistent; in most cases, developed solutions, alternatives, or options in a clear manner	Accurately and appropriately evaluated and interpreted relevant information from a variety of sources and perspectives; developed and justified multiple solutions, alternatives, or options for a variety of work assignment problems; solutions, alternatives, or options were clear, coherent, well supported, logically consistent, and complete
	Leadership Abilities	Displayed only a limited ability to guide, encourage, and motivate others toward identified goals; focused excessive attention to the task or to interpersonal relations in work groups; asked for ideas, suggestions, and opinions but, in many cases, neglected to consider them; on occasion, showed favouritism to one or more work group members; rarely recognised, encouraged, or involved work group members	Evidenced an ability to guide, encourage, and motivate others toward identified goals; balanced the need for task accomplishment with the needs of work group members; showed understanding and support of work group members; sought and respected others' opinions; sought an agreement with and acceptance of ideas and plans of action; provided recognition of and encouragement to work group members	Demonstrated proficiency on each of the leadership dimensions listed under the 'competent' performance level, plus: listened actively, and acknowledged and built on others' ideas; engaged all work group members; kept work groups on track as needed; intervened when tasks were not moving toward goals; involved work group members in setting challenging goals and planning for their accomplishment

	Overall Performance: Evaluation of Student Intern				
A2 [2]	Outstanding ☐	Very Good ☐	Satisfactory ☐	Marginal ☐	Unsatisfactory ☐
	If a position were available within your company/ organisation, would you recommend this student for employment?			Yes ☐	No ☐
	Comment:				
	Are there any other additional comments you wish to add regarding the student intern?				

Technical Notes: In the actual form of A2[1], there is a box for comments underneath each row of evaluation dimensions as well as an extra column for scores to the right of the performance rating table. A2[1] contains responses to 14 evaluation dimensions and carries a 75% weighting in this assessment. Each evaluation dimension is weighted equally and scores maximally 6 marks, so the maximum mark would be 84. The total score for A2[1] then needs to be adjusted, being divided by 84 and multiplied by 75. For A2[2], it weighs 25% of A2. The answer to whether or not the intern would be recommended for employment is used to moderate the overall performance with a matrix as follows:

	Outstanding	*Very Good*	*Satisfactory*	*Marginal*	*Unsatisfactory*
Recommended	25	22	19	16	13
Not recommended	21	18	15	10	5

	Evaluation Dimensions	*Performance Rating*			
		Excellent (A+,A,A–)	*Good (B+,B,B–)*	*Marginal (C+,C,D+)*	*Unsatisfactory (D,F,0)*
A5. Portfolio	Quality of writing (LO I)	As good, and is written in an engaging manner. Interesting to read.	Clear, readable, prose. Good use of transitions; no problems with spelling, punctuation, or grammar. Clear and logical presentation; good development of an argument; transitions are made clearly and smoothly.	Frequent problems with mechanics of language; occasional awkward sentences and poor transitions; reduced readability. Minor problems of organisation or logic; needs work on creating transitions between ideas.	Major problems with mechanics of language; awkward sentence construction; poor or absent transitions; frequently difficult to understand. Weak organisation; sentences rambling; ideas are repeated.

A5. Portfolio	NUS Skills translated into workplace (LO III)	As good, and recognises several wide ranging skills that were translated into the workplace. Additionally, the skills were generalised to be applicable not just to the tasks undertaken in the internship.	Shows/highlights what skills (more than one) learnt at NUS were translated into the workplace.	Shows/highlights one skill learnt at NUS that was translated into the workplace. Unable to properly recognise skill sets picked up at NUS, or enhanced at NUS which were utilised in the workplace.	Nonsensical relationship drawn between skills learnt at NUS and translated into the workplace, or no evidence that any skills were even recognised at all which were drawn in the workplace.
	Reflection on skills learnt (LO IV)	As good, and evidence of internalisation of what was learnt into a personalised model of good practice. Good evidence of reflection on own performance. Generalises conclusions and what was learnt in new and unfamiliar real-life contexts.	The essay presents a good appreciation of the new skills learnt and how they impact personal and career development and is backed up with relevant and accurate support.	Able to identify new skills learnt, but are not well appreciated and unable to see any significant impacts on personal and career development. Limited reflection appears to have been performed. Weak or poor justification with portfolio items.	The essay either does not address any new skills learnt, or if it does, there is no meaningful indication of how these skills impact the intern's personal and career development. No evidence of serious reflection. Weak or no evidence for claims made.
	Reflect & Improve (LO V)	As good, and able to further generalise self-evaluation beyond the internship. Suggests ways of improving professional performance generally.	Able to use available information to self-evaluate and identify the full range of own strengths and weaknesses. Self-evaluation properly targets an area of improvement which was then attempted to be approved upon. Areas of improvement were specific to the internship. All observations and conclusions are properly supported by items in the portfolio.	Able to use available information to self-evaluate and identify a few aspects of strengths and weaknesses. Little evidence of making any serious attempt to improve on the identified areas. Few ideas on how improvements could be made. Some evidence that the observations are backed up with items from the portfolio.	Able to use available information to self-evaluate and identify limited aspects of strengths and weaknesses. No evidence of suggestions of ways to improve performance. Little if any evidence is used to back up claims from items in the portfolio.

Source: NUS (2018) CM4299 Guidelines.

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8.12 Case 12: Understanding Contexts of Law and Legal Practice – The Undergraduate Legal Internship Programme, University of Wollongong, Australia

The undergraduate Legal Internship Program (LLB397) offered by the School of Law at the University of Wollongong is a compulsory two-credit subject in which students have to complete a 20-day internship under the supervision of a legal professional. The objective of the program is to provide students with an understanding of the human, social and policy contexts of law and legal practice. By integrating the professional experience into the learning process, students can develop an understanding of law in action through observing and perceiving the relevance and application of theory to practice during their internship. Students are expected to reflect upon the values, ethical standards and conduct of the legal profession and develop their own attitudes towards professional responsibility.

Distinctive Features

- Requiring all students to complete a legal internship as part of their law degree
- Application for internship can be arranged by the School of Law or by students themselves, with approval from the School of Law

Expected Learning Outcomes (LO)

I Appreciate some of the practical aspects and social dimensions of legal problems;

II Relate the application of different areas of legal principles to the application of the different skills of research, communication, and practice that different types of legal work require.

Coursework Teaching & Learning Activities

Pre-Internship

- Matching exercise between the Law School, possible internship providers and student applicants.

During Internship

- Internship experience and journal entries (4 weeks/20 days).

Assessment Approaches

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A1	Identification of learning objectives	On the first day of the internship, students are expected to discuss with their work supervisor and to identify a list of learning objectives and work activities for the internship period. This statement of learning objectives will be signed by the work supervisor and submitted to the Law School for approval within the first three days of the internship experience.	-	II.	Formative	Communication; collaboration; self-management
A2	Reflective Journal	Students have to prepare a minimum of four journal entries on work and observations undertaken during the internship experience. Students also have to include a piece of reflection on how the internship has changed their view and/or understanding of the law.	-	I. II.	Formative & Summative	Critical thinking; problem solving; self-management

(*Continued*)

	Name	*Learning Activities*	*Weight*	*Aligned LO*	*Type*	*Generic Skills*
A3	Student internship evaluation	Students have to submit an evaluation form to indicate whether they have met the learning objectives identified at the beginning of the internship.	-	I. II.	Summative	Problem solving; self-management
A4	Signed record of attendance	Students are required to maintain a record of attendance during the internship experience, recording any variations to the agreed attendance schedule for insurance purposes.	-	I.	Formative & Summative	Self-management

Assessment Type

Both formative and summative assessments are employed in the module. Such a combination of methods allows assessment of students' learning progress and outcomes after the internship, prompting students to record and analyse observations and impressions during the internship.

Main Assessment Areas

Values for Reflection: Reflection on performance is assessed in journal entries (A2). Reflection on personal growth and learning outcomes at the end of the internship is assessed in the student internship evaluation (A3). The assessments encourage students to reflect on their actions during and after the internship, whether they have achieved their objectives and what they have learnt in the program.
Self-management Skills: Students are expected to manage themselves throughout the four weeks of internship, setting objectives (A1) and monitoring their own learning progress through completing journal entries (A2) and evaluating themselves at the end of the program (A3). Being required to maintain an attendance record (A4), students are pushed to take responsibility for their own actions. The assessments test students' self-management skills as students have to take initiative in the module, from applying for an internship to submitting the internship report.

Knowledge Application: Aiming to expose students to the law in operation and different areas of legal practice, the programme expects students to apply and relate their internship experience to theories and knowledge learnt in lessons. By recording their experience in journal entries (A2) and reflecting on the experience, students further develop and reinforce skills and understanding of legal problems. Students may also analyse their successes and failures during the internship in the student internship evaluation (A3), reflecting on their workplace competencies and what they have learnt about demands and responsibilities in the legal workplace.

Assessment Standards/Sample Rubrics

A2. Reflective Journal	The journal is marked based on the following criteria: a The amount of effort put in by the student; b The extent to which the student is able to explore and discuss issues encountered; c The quality of writing (e.g. clarity, creativity, diversity of concepts); d Demonstration of learning from the experience in terms of insights and conceptual depth; e Ability to critically analyse the experience; Ability to relate theories learnt at the university to their experience and observations in the workplace.
A3. Student Evaluation	The evaluation form requires students to: a Attach a copy of objectives developed at the start of the internship and comment specifically on whether the student's experience achieved the aims identified, and say why/why not; b State any other general comments about the internship experience.
Internship Report	All components of the internship report (including reflective journal, student evaluation and attendance record) must be submitted within two weeks of completing the internship. The Internship Report will be graded as Satisfactory or Unsatisfactory. The supervisor's evaluation is optional, and if provided, the evaluation does not form part of the assessment.

Teacher's Stories

John Littrich, Senior Lecturer, School of Law, the University of Wollongong (UOW)

Professional Engagements

John Littrich was admitted as a solicitor to the Supreme Court of NSW in 1989 and the High Court of Australia in 1990. He practised between

1989 and 2002 in the Illawarra and Shoalhaven regions primarily in the litigation field as well as a year with the NSW Coal Association from 1994 to1995 as an Industrial Relations Advisor. He became an NSW Law Society Accredited Specialist in Family Law in 1999, then began teaching at UOW in 2002. He was appointed as a Lecturer in 2004 and since then has coordinated a range of subjects in the undergraduate LLB program, also undertaking the post of Litigation Co-ordinator of the UOW Graduate Diploma in Legal Practice course. In 2014, John Littrich was appointed to the position of Discipline Leader, Clinical Legal Experience and Professional Engagement, overseeing the Law School's unique Legal Internship Programme and other experiential learning programmes. His co-authored text with Professor Ainslie Lamb, Lawyers in Australia, has been used to teach legal ethics at UOW and other universities for a number of years.

Motivation

In 2008, John Littrich and M.T. O'Brien issued a journal, which wrote "Students learn most effectively (or deeply) when they are called on to participate in activities that engage them in role-sensitive, experiential or contextualised instructional activities that require them to mobilise learning into action" (p. 62). As the academic coordinator of the Legal Internship Program, Littrich believes in the importance of experiential learning and the importance of practicing various skills in the professional field. This echoes the aims and objectives of the Legal Internship Program, which focuses on exposure to the "practical dimensions of legal principles" and "aspects of law which cannot be learned from reading or hearing about it" (UOW 2018, p. 4). The main motivation behind the Legal Internship Program is to provide students with the opportunity to observe law practices and assist them in their future careers. Skills are acquired and reinforced in the experience of professional practice.

Challenges

- As completing an internship is a requirement for the law degree at UOW, it is challenging to build up and maintain contacts with a large number of partner organisations to provide internships. It also takes administrative effort to match students with appropriate internship placements.

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Conclusions

This chapter provides a large database of empirical cases from around the world. As some of the information including videos cannot be shown in text format, I have placed a link here (**https://ar.cetl.hku.hk/EL**) for easy access. There are also more cases on the website and since only a limited number of cases can be included in the book, I invite you to visit the website for more information.

Questions to Ponder

- Most experiential learning courses employ a combination of assessment approaches, but at the same time, more assessment means distraction from meaningful activities, what should I do?
- As mentioned in the book, experiential learning requires support from different levels (particularly the senior management level). The cases shown in this chapter seem to be well-funded and supported. How can I, a teacher with limited funding and support, initiate and implement my own experiential learning courses successfully?
- It looks like feedback is still an after-thought, as most experiential learning cases do not appear to prioritise the use of feedback. Should I spend time integrating feedback into the design of an experiential learning programme? Or should I spend more time on the activities so students will be more engaged?

Personal Reflection

I want to thank all the teachers who have done wonders in their experiential learning courses and projects. I have first-hand experience on how difficult it is to build a successful experiential learning course. It takes time, resources, support, patience and luck. I also thank you for the outstanding work you have done on your assessment. It is through these cases, we teachers, researchers and in turn, students can develop better.

Getting support is always one of the most difficult hurdles for teachers. I have talked to many teachers, and most of them started small. It is always

easier to get support and resources when you have some successful cases to showcase.

If anyone has more excellent cases to showcase, please contact me. It will be my honour to showcase your work on our website.

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9 Assessing Experiential Learning with Technology

> Technology comes and goes, it does not drive learning. Pedagogy should always come before technology.
>
> – Chan, CKY

Introduction

Due to the globalisation and digitalisation of education, technology is increasingly used in various domains of the field, including experiential learning. In recent years, the outbreak of the coronavirus pandemic in 2019 has also unquestionably catalysed the use of technology in experiential learning. Studies have shown that the younger generation prefers working on experience-based projects, enjoys opportunities for collaboration, and expects more interactive, engaging activities that integrate the use of current technologies (Vito, 2013). Technology is widely perceived as an effective tool for experiential learning as it encourages innovation (Murphrey, 2010), supports different learning styles (Beckem & Watkins, 2012), increases students' self-efficacy (Douglas-Lenders et al., 2017), allows students and teachers to communicate outside the classroom settings and promotes the development of holistic competencies (Hu, 2015).

9.1 Role of Current Technologies in Experiential Learning

Technology can be integrated into experiential learning as the main tool for learning, or as a supporting element in the teaching and learning process. When technology is used as the main tool, it is fully integrated into the instructional process with learning activities being planned and implemented around it, such as in simulation-based and digital game-based learning. As a supporting tool, technology is used to supplement learning by providing a means of developing and storing digital resources for self-directed learning, documenting and assessing learning experiences, as well as synchronous and asynchronous collaboration.

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9.1.1 Technology as the Main Tool for Learning

As the main mechanism for experiential instruction in simulation-based learning, current technologies are commonly used in medical and healthcare fields such as dental education (Lemaster et al., 2016), nursing education (Koivisto et al., 2017; Weideman & Culleiton, 2014), and counsellor education (Lowell & Alshammari, 2019) to facilitate the development of students' knowledge, competencies, and attributes in a safe environment without posing potential risks to patients and clients. Weideman and Culleiton (2014) show that by using a virtual pregnancy model, nursing students could monitor a character's virtual pregnancy as it progressed over a specified time period. The virtual pregnancy model had embedded questions and feedback to guide students throughout the process of providing health education to the virtual character. In Lowell and Alshammari's (2019) study, counsellor education students applied the interviewing and diagnosis skills they had learnt in an online 3D role play with patient avatars. These activities provide opportunities for experiential training of professionals in a low-risk environment where errors in diagnosis and clinical decisions do not have any detrimental impact on human subjects but serve as teaching points for future improvements.

Technology-enhanced simulations are also used in other fields such as supply chain management and the science, technology, engineering, and mathematics (STEM) disciplines to allow students to immerse themselves in authentic work processes in a virtual environment that parallels the real-world context. For example, business students adopt different roles in logistics, sales, purchasing, and accounting to participate in a virtual supply chain management process that includes sales and operations planning, inventory control, stock transfer planning, and periodic inventory review (Angolia & Pagliari, 2018). Similarly, engineering students can have hands-on experience of the effect of bank angle and the speed based on the radius of turn as they manoeuvre a virtual aircraft using a flight simulator (Aji & Khan, 2015). With the use of current technologies, it is possible to provide students with such practical experiences which are otherwise too costly and unfeasible to be carried out in person.

Simulations and digital games are closely related and sometimes used interchangeably in the experiential learning literature. In some studies, serious games also known as gamification are integrated into simulation-based learning to provide a motivating way to practise concepts learnt in class (Le et al., 2015, 2016). For example, in Le et al. (2015) study of technology-enhanced construction safety education, the students performed construction tasks using motional avatars to identify and correct potential risks in a simulation game. The virtual scenarios were designed to closely resemble real-life construction sites to help the students gain practical on-site safety experiences in a safe environment. An advantage of simulation game-based learning is that it offers a stimulating and engaging approach for encouraging collaborative and experiential learning in a close-to-reality virtual environment (Le et al. 2015, 2016).

9.1.2 Technology as a Support Tool in the Learning Process

In its role as a support tool for learning, technology sometimes acts as a digital repository for information and learning resources. Online learning management systems such as Moodle, Canvas, and Blackboard are learning platforms that store course content and learning materials, host discussion forums and blogs, and allow easy and accessible messaging by students anytime and anywhere. In the flipped classroom approach, lecture content videos can be uploaded to an online learning platform, so that students can watch the videos in advance to equip themselves with fundamental concepts before attending a face-to-face class or experiential learning activity (Peisachovich et al., 2016). In addition to videos, other types of content such as cases, exercises, data, and pictures can also be provided in a virtual classroom to stimulate online discussions (Le et al., 2015).

Technology provides a means through which learning experiences and artefacts are recorded and documented in a range of digital formats. At the University of Hong Kong, law teachers teaching tort law are capturing pre-recorded videos at different locations to bring students out of their classrooms. Teachers may also ask students to step outside to their neighbourhoods and find torts of different types in their everyday lives. The use of videos and photos is becoming more popular, with cameras in mobile devices being readily available. Teachers need to provide clear criteria for the assessment of these new approaches, as video and photo editing, sizes and length of videos, and submission approaches are challenges that need to be considered.

In the art, creative, and technology disciplines, students are encouraged to use editing software to compile audio files, images, motion graphics, and video clips for an e-portfolio of their internship experience (Mirrer, 2010). E-portfolios allow students to document their learning process, share their experiences with a specialised learning community, and present their competencies to potential employers in a digital form (May et al., 2016). Also, the history of students' communication and work processes that are documented on web tools or online learning platforms can be analysed to evaluate learning and programme effectiveness (Hu, 2015; Le et al., 2015; Mundkur & Ellickson, 2012). Students can also reflect on their own performance by reviewing the learning artefacts they have produced and preserved digitally (Mattera, Baena, & Ureña, 2014), this is elaborated in Section 5.6 on *rework reflection*. The use of current technologies such as videocasting tools, learning management systems, and virtual classroom software makes it possible for students to focus on key elements of their learning experience.

Both synchronous and asynchronous web tools are useful for collaboration. Synchronous web tools, such as virtual platforms, support real-time discussions, editing of work, and presentations to enhance a sense of belonging to a learning community and prevent feelings of isolation (Mundkur & Ellickson, 2012). On the other hand, asynchronous web tools – which are not time-sensitive – allow

flexibility in communication and collaborative work at a time and place that is convenient to the users. Examples of such tools are email, online forums, blogs, and wikis. Wikis are particularly useful as mass authoring tools that enable students to work collaboratively in an online editorial process to support experiential learning (Pardue et al., 2013). In addition, digital media products such as movies or video clips that students have created for an experiential learning project can be published online on platforms such as Facebook (Meta), YouTube, and Flickr for their classmates to view and facilitate discussions asynchronously to encourage collaborative learning (McCormick et al., 2010). In experiential learning programmes that involve external stakeholders, off-campus internships, or geographically diverse participants, the use of communication technologies supports online discussions and timely feedback sessions (Chilton, 2012; Lackéus & Middleton, 2018; Mettiäinen, 2015; Zettinig et al., 2015) to ensure that the programme goals are achieved.

Zhu et al. (2016) proposed a framework for designing and evaluating a storm drain mapping project that required the use of GPS devices in an undergraduate introduction to management information system course. Formative evaluation was done through verbal checking of students' concept understanding, whereas summative evaluation was conducted through face-to-face interviews with students regarding their assessment of their project design and understanding of GPS before and after the project. In addition, the students completed a questionnaire consisting of scale items and open-ended questions on the perceived authenticity, challenges, competencies, and level of autonomy in the project. The students commented that the project had improved their understanding of GPS technology, helped them acquire relevant technical skills for using GPS devices to collect data, and increased their interest in information technology. In another study, Mendez-Carbajo and Davis-Kahl (2019) reported their comparison between assessment of traditional scholarly capstone research projects and technology-enhanced service capstone research projects in an undergraduate economics programme. The traditional scholarly approach involved students searching library databases, assessing data sources, and producing research outputs in the forms of written papers and oral presentations. The service-learning approach, on the other hand, required students to work in partnership with local government agencies, share data on residential foreclosures via geographical information software (GIS), and analysed economic impacts using the Impact Analysis for Planning software. The research outputs were an independent research project and presentations at a regional scholarly conference. Based on the assessment of 85 research projects, the researchers found that those with a service-learning focus showed a stronger mastery of empirical methods and visuals than those with a traditional scholarly focus. Overall, the service research projects appeared to be, while only marginally, more competent than the scholarly research projects.

9.2 Effects of Current Technologies on Experiential Learning

9.2.1 Positive Effects

Various studies have shown that the use of current technologies has a positive effect on experiential learning. Murphrey (2010) investigated the effects of interactive technologies on student engagement in experiential learning activities and concluded that technology encouraged students to be innovative in their work and to take ownership over their ideas (Murphrey, 2010). Besides, Mundkur and Ellickson's (2012) study shows that technology-supported experiential learning provided opportunities for individual as well as collaborative learning and application of learning to real-world contexts. Based on the participants' feedback, reading peers' postings on the discussion boards encouraged self-reflection as it inspired the participants to think about their own work and enriched their perspectives on the issues discussed. In Weideman and Culleiton's (2014) simulation-based research using a virtual pregnancy model, the students were able to learn and apply appropriate obstetrical concepts in the virtual clinical scenarios they encountered. The students perceived that working with the virtual pregnancy model increased their competency in clinical judgement, clinical inquiry, caring practices, and as a facilitator of learning.

The attractive colours, graphics, audio, and in-built tutorials in gamified learning tools add a fun factor to experiential learning (Murdoch, 2019), motivating and engaging students in the learning process (Catalano et al., 2014; Le et al., 2015; Le et al., 2016). In digital game-based learning, students tend to focus fully on the game, which is the learning task itself. Failure to complete the game can be considered as an opportunity for the facilitator to evaluate together with the students how their decisions have led to failure in the game, either during the game or post-game debriefings (Catalano et al., 2014).

Apart from enhancing student engagement, virtual simulations support the development of holistic competencies such as presentation and communication skills (Beckem & Watkins, 2012). In Douglas-Lenders et al. (2017) study, the research participants reported a higher level of work-related self-efficacy after undergoing simulation-based training in occupational health and safety. The use of virtual groups is becoming a standard practice in international corporations, and the ability to collaborate virtually is therefore an important soft skill of the 21st-century workforce (Leonard et al., 2011). In addition, the integration of information and communications technology (ICT) in experiential learning has been found to increase students' willingness to take risks (Bandera et al., 2018) and encourage the development of self-regulated learning competencies, comprised of communication competencies, computing competencies, analytical competencies, creativity, and team competencies (Mattera et al., 2014). Apart from holistic competencies,

research has also shown that current technologies have a positive impact on student attainment of subject-specific learning outcomes in experiential learning (Aji & Khan, 2015; Geng & Alani, 2018).

9.2.2 Negative Effects

The use of current technologies in experiential learning is not without its critics. Some writers have cautioned against the uncritical use of current technologies in outdoor experiential learning as they believed that current technologies, such as smartphones and tablets, have the potential of distracting students from totally immersing themselves in the natural surroundings, unfamiliar culture, and authentic interactions with the local community (Hills & Thomas, 2019; Shultis, 2012; Smith et al., 2018). Interaction within the physical and socio-cultural contexts of a place is an important aspect of experiential learning that cannot be replaced with technology.

In the study conducted by Smith et al. (2018), the participants in a study abroad course in New Zealand recounted their experience of being separated from technology as one that afforded them valuable quiet moments for genuine self-reflection while being totally immersed in the rural settings. To explore the concept of sustainable development in tourism, Schott and Marshall (2018) trialled a virtual field trip using a software-based virtual Pacific Island and virtual reality headsets involving six university staff members and five students. Although the participants reported a great sense of immersion in the virtual environment, they were deprived of opportunities to have active, meaningful interactions with the local community in the simulation. Such shortcomings may limit the potential of technology to enhance experiential learning outcomes. Bursztyn et al. (2017) compared the learning of geoscience concepts between students who were taught in a traditional curriculum and students who participated in augmented reality field trips using a pre-test/post-test design. The results show that there was no significant difference in the learning gains attained by both groups. The findings from these studies inevitably cast doubt on the extent to which current technology use positively impacts experiential learning outcomes.

Hills and Thomas (2019) argue that the decision to use or not use digital technologies in outdoor experiential learning should be carefully examined from three aspects: pedagogical considerations, affordances of digital technology, and consequences of decisions. In a similar vein, Wang (2011) warns against integrating virtual technology in higher education programmes without a sound pedagogical basis. He questioned the transferability of experiential learning from the virtual world to the real world due to the sometimes unrealistic virtual settings and the often-predictable causality of interactivities in virtual simulations, which differs greatly from the complex cause and effect relationship in natural human behaviour.

9.3 Case Study Using Technology

With industrial revolution 4.0, there is an increasing number of technology-enhanced learning tools. When selecting a suitable technology tool to use in supporting and assessing experiential learning, teachers should consider the justifications of their integration into teaching and learning and should always place pedagogy first before technology. In the following case study, I will demonstrate a technology platform purposely designed for out-of-classroom learning activities and holistic competencies. This platform is created in a way that is student-centred. Its features are based on many pedagogical theories and innovations and has many features such as rubric templates for competencies, validated and reliable instruments for measuring student competencies and various prompt feedback options. Using this platform, both direct and indirect evidence can be recorded and collected for assessment and other quality assurance requirements at ease. The platform can also provide an alignment report (in pdf format) between programme, course and competency learning outcomes as well as assessment as shown in Figure 9.1. The software platform supports web-based usage and is available on both Android and iOS devices. The name of the platform is YOCLE (https://yocle.net).

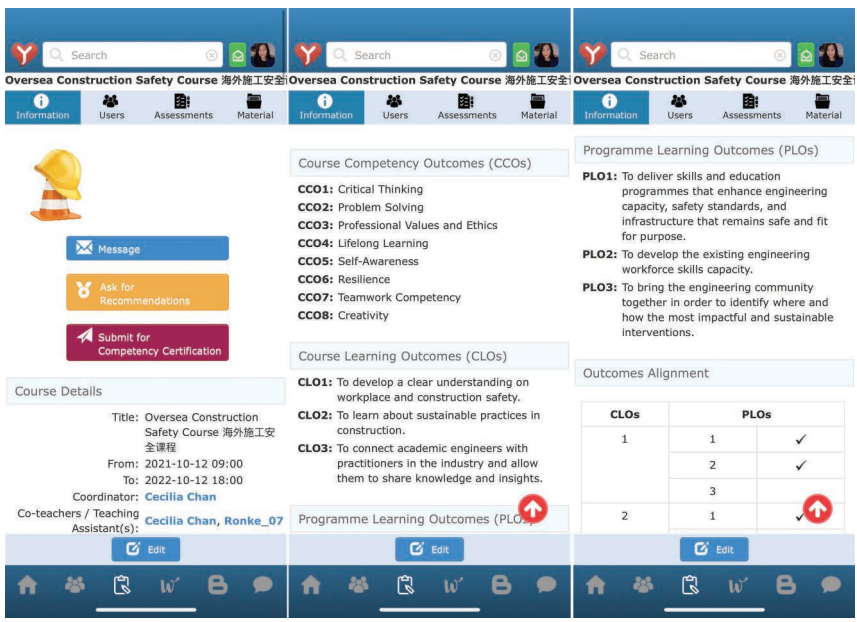

Figure 9.1 YOCLE course showing Programme, course and competency alignment.

9.3.1 Case Study – Overseas Construction Safety Course

For constructions to proceed smoothly and efficiently, safety always plays a foundational and significant role. This course is designed to prepare student engineers, surveyors and architects to gain a comprehensive understanding of workplace and construction safety before they enter the workplace in their designated field. Students in this course travel to Southeast Asia and work with industrial and community partners where they develop and apply safety knowledge, skills and competencies on projects in building sites. Students must complete the video online course and pass all the quizzes and short questions prior to their field visits as shown in Figure 9.2. Most of the projects are located in poorly funded areas in Southeast Asia where safety in construction is not a priority. With scarce human resources, students are expected to be involved in diverse tasks, and will therefore be given plentiful opportunities for hands-on experience as they help the community partners deliver projects. Not only will this course allow potential students to learn more about safety in the construction and engineering contexts, but it will also act as a platform to connect students with engineering practitioners in the industry as they are given the opportunities to share their experiences and insights.

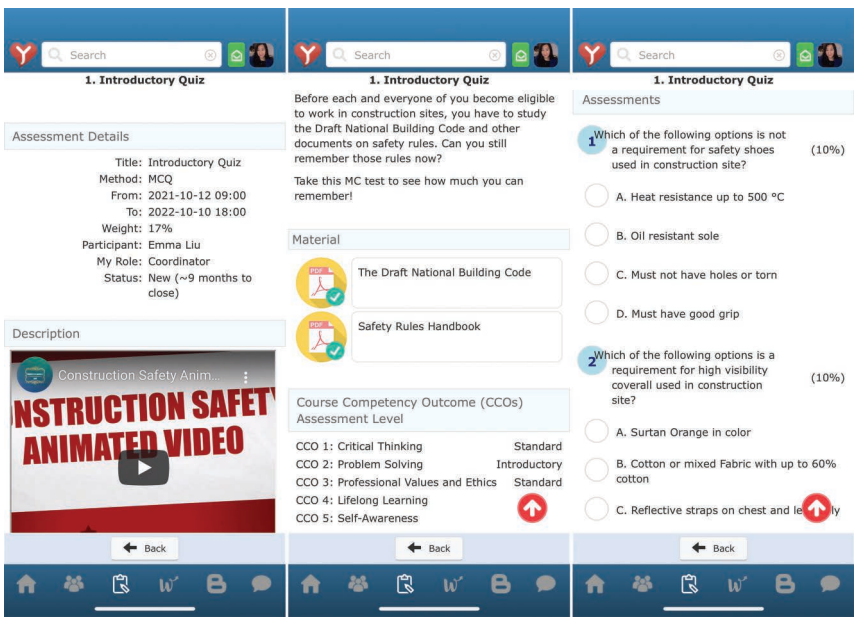

Figure 9.2 Screenshots showing video and course materials. Videos and course materials can be integrated onto the platform for the course. MCQ quizzes with automatic correction is available for quick answer checking.

The overseas construction safety course lasts three weeks and includes an online video course with quizzes and short answer questions. Students will need to fill in a self-assessed validated evaluation of their holistic competencies at the beginning of the course to promote their self-awareness regarding competencies. Figure 9.3 shows a student profile, along with their competency scores and a sample of the self-assessed evaluation.

Apart from the self-evaluation, students will also need to complete their learning contract as shown in Figure 9.4. Students can fill in the learning contract anytime in the system and as you can see, it supports multiple languages. More on learning contracts are described in Chapter 4.

In accordance with the course learning outcomes and the competency outcomes, the course encompasses a wide variety of assessment tasks, ranging from multiple-choice questions which test participants' understanding of their course content, to reflection which encourages deeper thinking on their learning experience and holistic competencies development as shown in Figure 9.5. Through different learning and assessment tasks, this course aims at equipping participants with a total of eight holistic competencies which are believed to be essential for students to excel in their studies and work in the future.

Students will need to manage their own time in fieldwork, allowing time to conduct field research by direct observation and interaction with the environment. Direct input on the worksheets via smartphones or tablets makes life really

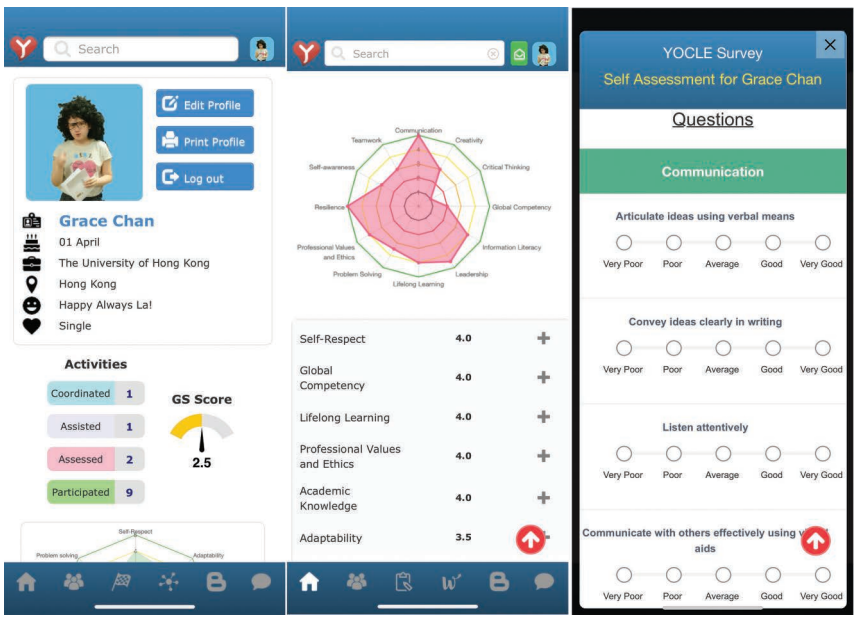

Figure 9.3 Student profile and validated self-assessment on holistic competency.

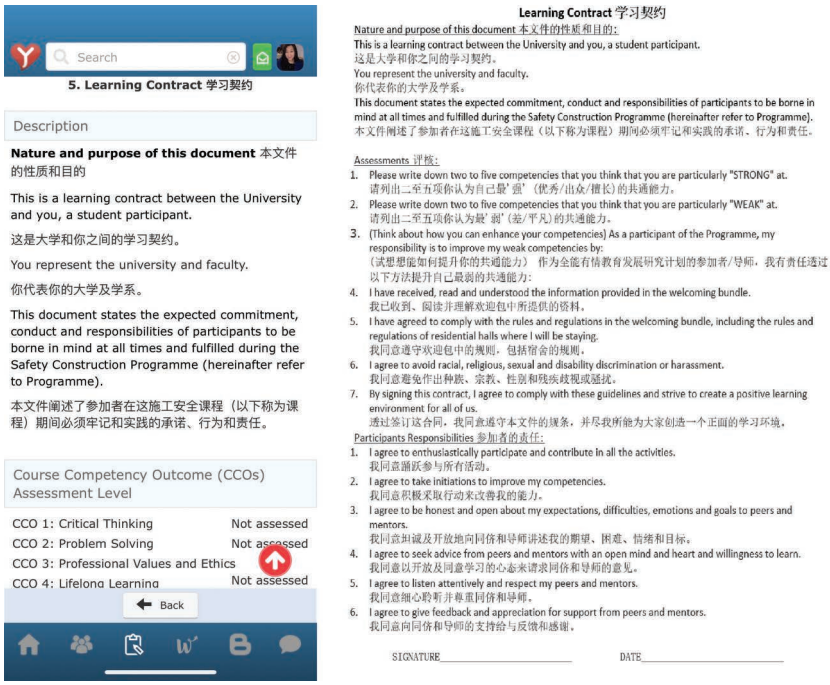

Figure 9.4 The YOCLE system showing the learning contract.

easy for students. Figure 9.6 shows different formats of answer input. A short field worksheet is designed to help them summarise their learning experience, and grading standards/rubrics are developed and given to students before the trip (see Figure 9.7).

Any assessor can provide feedback. And there are multiple approaches of feedback to choose from, for example, Dictaphone typing, audio and written comments. General comments, images or pdfs can also be attached via the message chatbox and can be sent to the whole class, a group or an individual student. Figure 9.8 shows a written feedback and an audio feedback.

Using technology for assessing experiential learning activities and programmes can bring many advantages. One of the benefits is the convenience for teachers and community or work supervisors to assess multiple students using the same system, hence allowing transparency, collection of evidence, and communication. With a system like YOCLE, information about students is automatically shared with the community supervisors once the review forms are filled in, and they can then be shared through the platform with the teacher and the students themselves. It is also more convenient for students and the teacher to access the reviews, as they have immediate access to review forms or assessment submissions. Another advantage is that systems as such allow for feedback in various

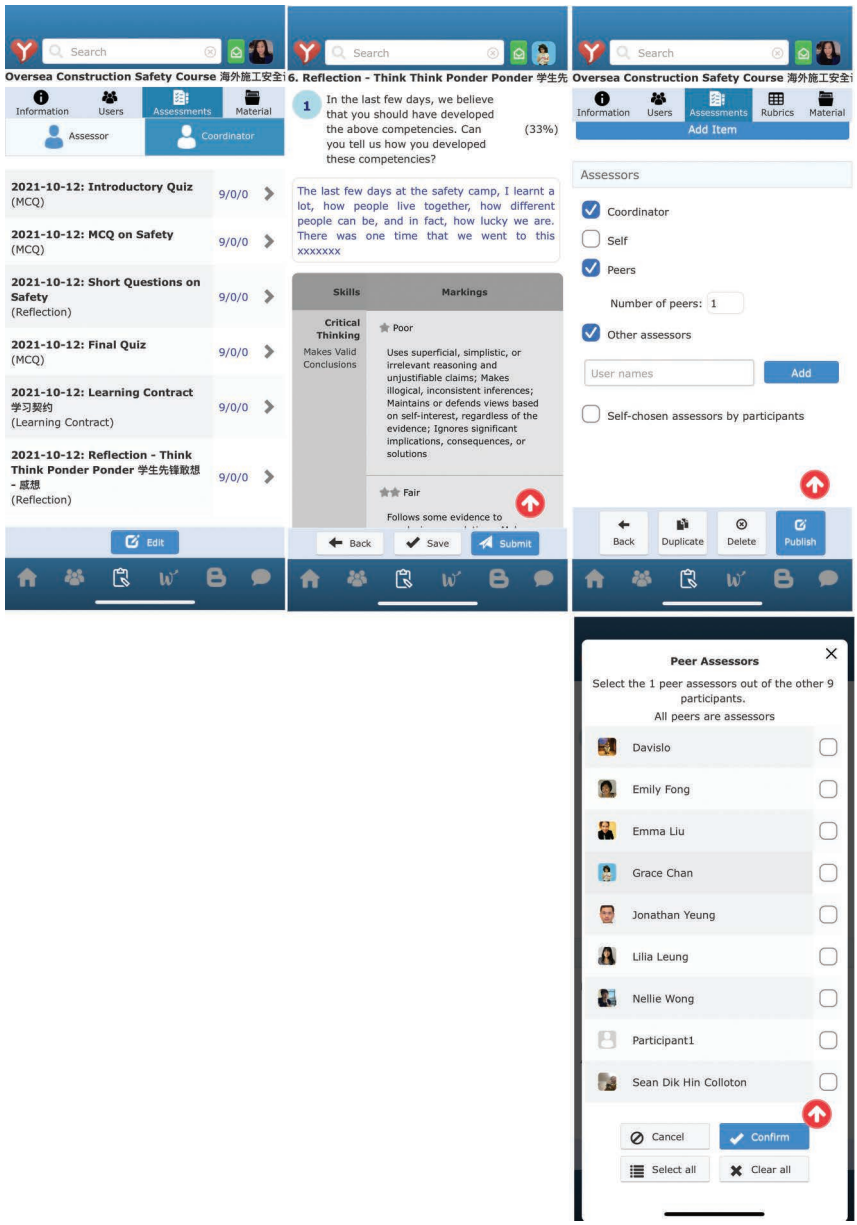

Figure 9.5 A list of assessment tasks and a sample of the student response in the reflection exercise. The teacher has the option to choose different assessors to mark the assessment. The options include the teacher, student self, peer students and other external assessors.

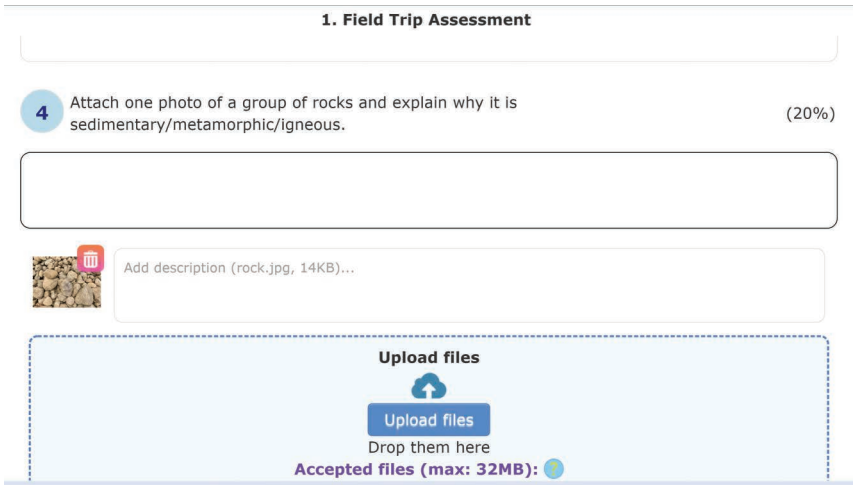

Figure 9.6 This shows the system allowing flexible submissions in various formats, such as pictures, videos, audio and PDF documents.

Figure 9.7 This screenshot shows a rubric template. YOCLE consists of over 850 rubrics templates for different competencies and they are fully customisable. The system allows teachers to choose from 3 to 6 Likert scales, which can be used to assess each skill and produce evidence of student learning.

forms. In the YOCLE system, supervisors can submit scores according to rubrics and also share personalised comments with the students. The support of various forms of feedback allows for more insights, and as they can be provided at any time and from any location, it is particularly useful for students who may sometimes feel isolated in a foreign land. During the COVID pandemic, students were not able to travel to Hong Kong, and the feedback, messenger and podcasting functions from YOCLE were able to help students to build peer-to-peer relationships.

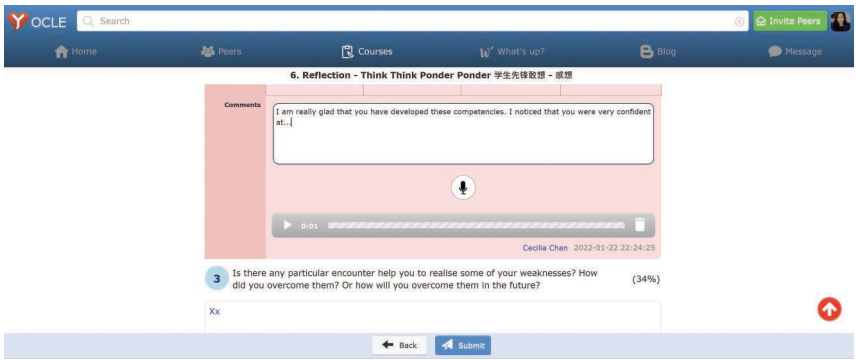

Figure 9.8 Assessor feedback via multiple approaches e.g. Dictaphone typing, audio and written.

Conclusions

One of the biggest challenges in relation to technology use in experiential learning is students' and teachers' lack of technical competence to cope with the new tools. Students often need technical training in technology use and clear instructions from teachers in order to enjoy the benefits of using current tools in learning (Murphrey, 2010). It means that students have to put extra effort into learning new skills (Le et al., 2015), and this may add to the academic burden they already face. Teachers, on the other hand, need to acquire special skills that are necessary for utilising technological tools and creating virtual learning scenarios (Jarvis & Dickie, 2010; Le et al., 2015). Moreover, the creation of tthe use of some technological tools incurs high costs (Angolia & Pagliari, 2018; Beckem & Watkins, 2012). Before a technological tool is integrated into teaching and learning, teachers often need to do some preparation in advance, for example, setting up accounts, creating virtual groups, familiarising themselves with the tool, and giving students an orientation to the tool/programme (Leonard et al., 2011). Such preparation work can cause an increase in teachers' workload.

As technologies are fast evolving, it is challenging for teachers to keep abreast of the latest developments in the field (Mathews & Flynn, 2018). In lesson planning, the type of technological tools and their versions need to be carefully selected to avoid the risk of obsolescence and system incompatibility (Sandlin, 2014). Effective integration of technology necessitates prior piloting of tools and planning for alternative methods by the teacher. As Rawlins and Kehrwald (2014) put it, "there is a need to reconceptualise approaches to create learning environments which make the best use of the available technologies" (p. 215).

Despite its potential to facilitate learning, technology can segregate students who have to work with a slow Internet connection or those who have limited

access to technology. In synchronous activities involving students from different locations, those in remote locations may not be able to participate in some activities, and thus feel excluded from the learning experience (Mundkur & Ellickson, 2012). Therefore, whether technology should be used and the extent to which it should be integrated into experiential learning are decisions that require careful consideration.

The question of whether technology enhances learning and to what extent it does so remain a topic of ongoing debate. Most of the studies that assessed technology-enhanced experiential learning tend to depend on students' self-reported experiences, with very few exploiting course examinations and objective tests for the measurement of learning attainment. While positive learning experiences have been widely reported (e.g., Lowell & Alshammari, 2019; Marriott et al., 2015), empirical studies that measured students' learning attainment have yielded mixed results. Such inconclusive findings indicate the need for more rigorous empirical research into the assessment of technology-enhanced experiential learning, and the impact of technology on experiential learning.

Questions to Ponder

- Why are you using technology for the experiential learning assessment?
- Does technology actually help deliver the expected outcomes? How?
- Are you burdening the students and the partners by using technology?
- Are you able to support diversity, equity and inclusion?

Personal Reflection

We, humans, can be so stubborn; we don't like changes. Unless there is a world-shattering situation that drives us to it. The COVID-19 pandemic is one example, I guess. We have been trying to encourage teachers to adopt technology in their curriculum for over a decade, but it is not until the pandemic that teachers have had to change, and they have begun to adapt. But once they started to adapt, they are back to that stubborn state again. So now that most teachers use one particular video platform, for example, Zoom, introducing them to another video conferencing platform would be almost impossible.

That is why it is important to choose your technology wisely. Once a decision is made, we can be too stubborn to change it. Always consider your pedagogy before your technology.

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10 Quality Assurance and Evaluation in Experiential Learning

> An oversight: Some may believe a large sample of quantitative data is a better representation for evaluation but sometimes a deep meaningful case study may be a better indicator to inspire.
>
> – Chan, CKY

Introduction

Experiential learning programmes and activities do not traditionally follow the usual learning path in a degree programme, and often require more time and funding resources. Thus, teachers need to provide rationales and justifications for why this learning pedagogy is effective and efficient, and worthy of continued support.

Monitoring and evaluation of experiential learning programmes are vital, and they provide funders, management, teachers and students with information on the programme's rationales, relevant recommendations and quality assurance. These evaluation processes help determine whether the programme works for the target student group, refine programme delivery, identify any ongoing concerns, and provide evidence and justification for the continuing support of the programme.

10.1 Evaluation Questions

Evaluation questions, similar to research questions in academic research projects, provide the purposes, and in turn, guide the methods used to collect data to understand the problem under investigation. There are four categories of evaluation questions for experiential learning programmes, namely: Needs evaluation; Process evaluation; Impact and outcome evaluation and Economic evaluation.

Needs Evaluation

Needs evaluation – this identifies the targeted student group for the experiential learning programme, the rationale for such programme and the actual needs fulfilled by the programme for this group of students.

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Sample questions related to this category

- What are the characteristics of this targeted student group?
- What are their needs?
- Why is experiential learning programme suitable for this target group?

Process Evaluation

Process evaluation – this examines whether the experiential learning programme was implemented according to plan and whether the target student population was reached.

Sample questions related to this category

- Were your programme's activities put into place as originally intended?
- Did the programme address the challenge or the needs of the programme? How?
- Was the target student population adequately reached and involved in the activities?
- How did the target population interact with the programme?
- How was the programme functioning from administrative, organizational, and teacher perspectives?

Impact and Outcome Evaluation

Impact and outcome evaluation – this determines whether the programme has brought about a change and successfully achieved the expected outcomes.

Sample questions related to this category

- Have the programme's outcomes, objectives, and goals been achieved?
- Is the programme beneficial to the target student population?
- Did the programme produce or contribute to the intended outcomes in the short, medium and long term? How?
- What unintended outcomes (positive and negative) were produced?

Economic Evaluation

Economic evaluation – this evaluates the cost effectiveness of the programme

Sample questions related to this category

- What has been the ratio of costs to benefits?
- Does the value or benefit of achieving the programme's goals and objectives exceed the cost of producing them? This may include time, staff and other non-monetary costs.
- What is the most cost-effective option?
- Are there alternative pedagogical approaches that could achieve the same outcomes at a lower cost?

Depending on the reason why evaluation is needed, for instance, intentions such as documenting programme progress, demonstrating accountability to the different stakeholders, or identifying ways to improve the student learning experience, the evaluation purposes and questions will guide the choice of methods used.

10.2 Evaluation Methods

The methods employed depend on the evaluation purposes and questions, and the common methods are quantitative, qualitative and mixed methods. Quantitative methods involve the collection of numerical data, which can be used to investigate the who and what of the experiential learning programme, such as the number of people who participated and the number of participants who completed the programme. Quantitative data can be collected via surveys, pre-tests and post-tests surveys, observations, or reviews of existing assessment, documents and databases.

Qualitative methods involve a collection of qualitative data which can be used to gain a more in-depth understanding of the processes, behaviours, feelings, actions, environments and relationships of the social and cultural aspect of the programme, i.e., the why question. Unlike quantitative evaluation methods which can test clear-cut hypotheses, qualitative evaluation methods can reveal unexpected outcomes through observations, case studies, face-to-face individual or focus group interviews, and projective techniques such as photolanguage (Bessell et al., 2007). Photolanguage makes use of photos or pictures to help participants to stimulate communications.

10.3 Literature Review on Evaluation of Experiential Learning Programmes

As summarized by Gosenpud (1990), evaluation of experiential learning can be carried out either by comparing experiential learning with other pedagogical methods on certain criterion variables, or comparing changes regarding the criterion before and after the implementation of an experiential learning programme. This latter falls under a category referred to as "straight evaluation study." Using straight evaluation study, scholars have conducted evaluations on the influence of experiential learning on cognitive learning, attitudes and behavioural change/skill acquisition (Gosenpud, 1990). Depending on the purpose of evaluation, different criteria can be used to evaluate experiential learning programmes. Ways to measure three common criteria are listed below:

- Cognitive learning: comparison of exam grades/ objective tests;
- Attitude change (attitude towards course/ enjoyment/ feelings of accomplishment/ benefits of class): questionnaire;
- Behavioural change/skill acquisition: open-ended questions to co-workers or supervisors/self-reports/examination on acquired skill/co-worker rating or observation.

It should be noted that studies have supported the use of both qualitative and quantitative methods for evaluation, as the two types of methods can complement each other, and when used together, strengthen the evaluation process (McLeod & Craig, 2004). It is also common for studies evaluating the effectiveness of experiential learning programmes to adopt mixed methods, i.e., both quantitative and qualitative measures, or for surveys to have open-ended questions to collect qualitative data on top of quantitative items (Hanneman, 2013; Mak et al., 2017; McLeod & Craig, 2004; Weinberg et al., 2011).

10.3.1 Surveys

As reflected by a series of recent studies on the impact of experiential learning, surveys or questionnaires are one of the most common instruments used for evaluating experiential learning programmes (Hanneman, 2013; Kruger et al., 2015; Mak et al., 2017; McLeod & Craig, 2004). Each study administers questionnaires differently. For some studies, both pre-test and post-test are conducted to obtain comprehensive data over time, while some only conduct post-test due to various reasons and constraints.

The evaluation conducted by Hanneman (2013) analyses the effectiveness of an experiential environmental programme in the USA in fostering long-term personal responsibility and awareness about ocean pollution. The investigator developed a survey instrument for the research that consisted of four sections: a sociodemographic and field trip experience section, a question and drawing section which inquires students about their concepts of ocean pollution, five Likert-scale response questions, and two open-ended questions. As this study is intended to be a long-term study, the evaluation was conducted with participants of the programme for five years.

Savage and colleagues (2015) utilised a multipart self-assessment survey to examine 32 students' perceptions of their confidence and competence before and after a sustainability leadership certificate programme. A pre-survey and a post-survey were conducted, which contained 15 questions each that required the participants to rate their confidence and competence levels on a scale of one (disagree) to four (agree). The post-survey also included qualitative questions for the participants to explain the increase, decrease, or lack of change in their scores. The results show an increase in the participants' perceived confidence and competence. In addition, from the analysis of the qualitative data, the participants appeared to be able to describe their learning outcomes in line with the programme design.

In McElwain et al.'s (2016) study, a pre-test and post-test to evaluate programme effectiveness were administered to the service recipients, instead of the undergraduate students who carried out the service-learning project. A total of 1,005 adolescents who received the relationship education sessions taught by the college student facilitators responded to the pre-test and post-test comprising of three components: demographic questions; knowledge of social science and items that were designed to measure depressive symptoms, individual empowerment, conflict management, attitudes towards marriage, faulty relationship

beliefs, and dating aggression. Although the study yielded positive findings, the researchers argued that an analysis of the undergraduates' reflection journals would have provided better insights into the effectiveness of the programme. In addition, continuous feedback from the undergraduates and the supervising faculty members was said to be gathered for programme improvement, but the instruments and methods used were not explained and reported in detail.

Apart from conventional paper-form surveys, researchers also utilize online platforms to facilitate their studies. The study conducted by Kruger, Kruger and Suzuki in 2015 made use of online surveys to evaluate the effectiveness of experiential learning in a free clinic run by students majoring in Physical Therapy, Health Education or Health Administration. The survey was conducted online via Qualtrics, and the URL of the survey was distributed through mass email to all volunteers at the free clinic. The survey was also distributed through Facebook posts on the free clinic Facebook page, as well as individual emails to the Board of Directors of the free clinic (Kruger et al., 2015). The survey consisted of 18 five-point Liker-scale statements belonging to four categories: Preparation and Fit, Quality of Volunteer Experience, Skill Development, and Community Impact. The survey examines students' self-reported experiences volunteering at the free clinic in the above four aspects.

Ickes and McMullen (2016) conducted an online survey of student health coaches' self-perceived knowledge, skills, and self-efficacy using a pre-test/post-test design. All the student health coaches in a health behaviour course were invited to participate in the study by e-mail, and the pre- and post-surveys were administered through an online survey software, Qualtrics. The pre-survey and post-survey contained 33 and 36 questions respectively, all aimed at measuring students' gain in knowledge and self-efficacy as reflected by their self-ratings on a four-point Likert-type scale. Improvements in the scores show that the experience-based health behaviour course was effective for developing the necessary knowledge, skills, and self-efficacy for a health coach.

10.3.2 Objective Assessment Results

Examination grades can be a direct indicator of student performance, especially cognitive and academic performances. By comparing examination grades or results of certain objective tasks, it is possible for researchers to know whether experiential learning is effective in terms of enhancing cognitive development. Nonetheless, it should be noted that grades as measures of academic achievement are challenged for their questionable validity and objectivity. In other words, academic grades do not always reflect students' level of academic achievement accurately (Allen, 2005). In the case of experiential learning, teachers' grading of assessments such as the reflective journals can be highly subjective and, to a certain extent, biased (Brail, 2016). This poses even more problems on the use of exam grades as criterion variables, for example, if a student obtains a higher grade after completing an experiential learning programme, it is possible that the higher grade comes from a biased judgement of the supervisor, instead of an improved academic performance.

10.3.3 Peer/Supervisor Observations and Ratings

Observation or rating by peers or supervisors are the most common ways to document behavioural changes or the acquisition of new skills. This mode of evaluation is especially popular in clinical placements in which supervisors observe performances of medical trainees as a component of assessment (Kogan et al., 2009). During clinical placements, medical trainees have the opportunity to interact with actual patients. Through observing and assessing medical trainees with patients and providing feedback, instructors can effectively help students acquire new skills and improve on their weaknesses (Kogan et al., 2009). Apart from clinical placements, observation and rating are also adopted in the HAVE, U Can Programme (programme mentioned in Chapter 4), which aims to enhance holistic competencies and virtues, including consideration, leadership, manners, resilience, self-confidence and teamwork. Through daily observations, mentors grade student participants according to the above aspects and document whether improvements have occurred. Mentors' close and trusting relationships with the mentees and prompt feedback via observation facilitated behavioural changes in students.

To evaluate the pedagogical outcomes of a client-based capstone course in a healthcare administration programme, Dominguez et al. (2009) reported the use of a survey completed by course professors at the end of the course. The survey contained items on 12 competencies such as communication, change management, collaboration, and professionalism. Course professors rated their students' abilities in the 12 areas on a nine-point Likert-type scale ranging from one (well-below expectations) to nine (well above expectations).

10.3.4 Multi-method Approaches

Some studies have reported the use of a combination of quantitative and qualitative methods to triangulate data from multiple sources in order to evaluate the effectiveness of experiential learning programmes. Kassabgy and El-Din (2013) investigated the impact of a service-learning course component on students' academic enhancement, civic engagement, personal growth as well as the attitudes and perceptions of the campus community. In the service-learning project, the students provided English language tutoring to the custodians, security guards, and housekeepers who worked for the university. The impact of the project was evaluated through an analysis of the students' reflection papers, their responses to an online questionnaire, as well as the data from focus group interviews with the students and university workers respectively. The findings show that the service-learning project helped the students achieve the intended learning outcomes of the course, enhanced their civic responsibility, and promoted positive attitudes and personal skills such as tolerance, self-confidence, and communication skills. As a result of participating in the project, the university workers reported a desire to continue learning English and that they would recommend the course to other university workers.

In another study, Boneck et al. (2014) examined the effects of service-learning projects within the Voluntary Income Tax Assistance (VITA) programme in accounting education based on the data collected from the students and tax clients who participated in the programme. The students were asked to rate statements about their competencies before and after the programme on a scale of one (strongly disagree) to seven (strongly agree) in four areas: interview effectiveness, intake form proficiency, software proficiency, and completion competence. In addition, the students were asked to describe their perceptions of the service-learning programme before and after the activity. The third set of data was the tax clients' participation experiences in the programme, gathered from their written statements in an exit survey. The analysis of the quantitative and qualitative data shows that the VITA service-learning experience helped students develop professional skills in accounting and a positive attitude towards community service, at the same time providing quality tax services to the community.

Rodriguez (2018) employed a mixed-method approach to collect data from student participants, teachers, and other participants in 15 projects in architectural education. The data analysed included students' individual and focus group feedback; peer feedback; feedback from the community partners, users, and advisors; teacher observations; and materials produced by the students such as logbooks, videos, photographs, and drawings. Based on the data from multiple sources, she found that the projects provided opportunities for the students to work on real-life design problems, enabled them to achieve the intended learning outcomes, and increased their intrinsic and extrinsic motivation.

To evaluate the success of a programme introducing quality improvement in nursing education, Kyrkjebø et al. (2001) implemented a two-part questionnaire that a group of nursing students completed before and after a two-day theoretical introductory course on the topic to measure their understanding of the concepts. In addition, the group reports submitted by students at the end of the experiential programme were analysed to examine how they had applied the quality improvement tools and techniques in specific situations. The results from the quantitative and qualitative analyses revealed that the intervention programme could raise students' awareness of quality improvement and provide them with the necessary skills and knowledge to integrate quality improvement in their future professional practice.

10.4 International Holistic Competency Foundation (IHCF) Quality Assurance for Holistic Competency Outcomes – Upcoming Future Standards

Throughout the book, I have repeatedly emphasised the holistic competency outcomes that can be developed in experiential learning. Experiential learning has become the solution in higher education in recent years to promote the development of holistic competencies with the aim of enhancing graduates' employability. This is of course, very difficult to evaluate objectively and with

clear evidence of student learning. As part of my research and practice, I have been working with a large number of universities, communities and industrial partners, and have set up the International Holistic Competency Foundation (https://www.ihcfoundation.net/)

The International Holistic Competency Foundation (IHCF) is an initiative to promote the recognition of holistic competency development in programmes through formal certification. There are 12 competency outcomes covered by the foundation's certification system: communication, creativity, critical thinking, global competency, information literacy, leadership, lifelong learning, problem solving, professional values and ethics, resilience, self-awareness, and teamwork competency. Figure 10.1 shows the 12 competencies that are currently being certified.

Courses that wish to join the certification scheme have to satisfy four criteria (see Figure 10.2 for the process):

1 The course must have clear competency outcomes;
2 The competency outcome(s) must be one or more of the twelve competencies identified by the International Holistic Competency Research Partners;
3 Appropriate assessment approaches (formative and/or summative) must be employed to provide evidence on each competency outcome; and
4 All courses certified will use the holistic competency validated instruments to help students reflect on their holistic competency and enhance their self-awareness.

Courses applying for the holistic competency certification will be reviewed by the credential committee consisting of educational experts, industry leaders, and community partners. Upon approval, the course will receive an internationally recognised certificate that is valid for two years, after which quality assurance procedures

Figure 10.1 The 12 holistic competency certified badges.

Figure 10.2 The certification process of the IHCF.

will be carried out. Students taking the course will be given a transcript summarising their achievements in each certified holistic competency as shown in Figure 10.3.

The International Holistic Competency Certification can serve as a useful tool for quality assurance of experiential learning programmes. There is an increasing demand for quality assurance and accountability in higher education. As a result, colleges and universities have to demonstrate to students, parents, employers, accreditation agencies, and any interested stakeholders that their programmes meet the needs of society and that their outcomes are aligned with industry expectations and national standards for quality education. One of the indicators of quality education is the employability of their graduates, or in other words, the extent to which their students can demonstrate holistic competencies as job-ready graduates. In light of this, formal certification of competency attainment serves as portable evidence that students can present to potential employers about the attributes they possess and their ability to succeed in the workplace. Chan and Luk's (2021) study involving 2,150 undergraduates and 215 academics from six Hong Kong universities shows that both academics and students are in favour of formal assessment and record of holistic competency development. In another study, Chan and Yeung (2021) found that students perceived formal assessment of holistic competencies as appropriate in general. Despite the consensus among researchers and practitioners concerning the importance of assessing holistic competencies, there is very little research on how holistic competencies are certified, and the current process of documenting, reporting, and certifying holistic competencies in higher education appears to be less than satisfactory (Chan & Chen, 2021).

The International Holistic Competency Certification is an effort to advance the recognition of holistic competencies in education. It also provides a means

Figure 10.3 A sample competency development report.

for ensuring that the assessment of holistic competencies is aligned with intended programme outcomes and that student achievements are properly translated, documented, and recognised in the form of an official transcript. Since experiential learning is increasingly adopted by institutions of higher learning to promote holistic competency development, the International Holistic Competency Certification Scheme offers a useful tool for quality assurance of experiential learning programmes by ensuring that certified programmes have clear competency outcomes, utilise appropriate assessment approaches, and document competency outcomes correctly. As highlighted in Chan and Chen's (2021) systematic review on holistic competency recognition, there is an urgent need for standardised reporting of holistic competency attainment and a shared discourse between higher education and industry.

Conclusions

This final chapter concludes by providing various evaluation methods and a review of the type of evaluation that has been commonly used in experiential learning. I also introduce the International Holistic Competency Foundation and its quality assurance process for holistic competency which I believe will be an important

requirement for experiential learning programmes and extra-curricular activities in the near future. The International Holistic Competency Foundation aims to enhance university-industry-community engagement by making explicit the competencies assessed in educational institutions, clarifying what those competencies mean, and incorporating the views of industry and community experts in the certification process. Hence, the certification scheme ensures that certified programmes meet industry and public expectations and that students who have undergone the programmes are well-prepared for the employment market and society.

Questions to Ponder

- What is a world without quality?
- What is a world with too much quality control?
- How do you ensure you do not focus too much on quality assurance and lost sight of the meaning, fun and challenge embraced in experiential learning?
- Your university only puts emphasis on quantitative data, particularly on the number of students registered, but it is difficult to manage a large number of participants in experiential learning activities, what should you do?
- It feels wrong to ask the students for their story for the sake of quality assurance, how should that be done?

Personal Reflection

What makes experiential learning powerful is often the involvement of the community. This authentic experience gives rise to many humanistic factors that students have to encounter. Students invest personal emotions into dealing with the social, cultural and economic challenges and sensitivities that occur, and these are the true jewels of experiential learning.

So, for my last reflection, I want to remind generous funders, systematic administrators and strict policymakers who may pick up this book. I have been trying to provide multiple perspectives from different stakeholders throughout the book as it is important to see from others' point of view. Experiential learning assessment and evaluation may be unconventional, the quality assurance and control processes may be messy and cloudy, but it is exactly because of the authentic, ill-defined, unknown nature of experiential learning that helps our students to develop creativity, teamwork, empathy and many more in this unforeseen future. Do not give in to mediocrity because of something we are not familiar with.

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The Final Conclusion

This concludes the ten chapters in assessing experiential learning. I enjoyed the process of writing this book, particularly the last months of it.

There are a few chapters that I find most interesting, as I researched and learnt more and more about the nuances. I particularly enjoyed Chapter 5 on reflection, as I see how much we depend on it, yet how little we know about it. There is more work to be done, and like that drawing by Sean Colloton portraying Hamlet's "To be or not to be, that is the question," I see myself having the same struggle when it comes to reflection – "to assess or not to assess." Efforts are needed to improve reflection literacy for both teachers and students.

I also enjoyed researching for and writing Chapter 7 on ethics. The cases that I developed were so useful and eye opening for my team and myself that I am already planning my series of professional development workshops around this topic. I like the drawing of the teacher portraying the Lady Justice, and as teachers, we need to role model this act of ethics. Research on this topic is still very scarce, and this will be an area of research that I anticipate more as upcoming development in the next few years.

Feedback in Chapter 6 is an important topic in its own right. I emphasise a lot on the relationship of the assessors and the socio-emotional aspects of it, as I think this aspect of feedback is particularly important for experiential learning. Of course, if students can develop evaluative judgement ability to assess themselves in holistic competency, the above issue will lessen. Thus, I anticipate the research study and instrument being developed by my student, Jiahui Luo, who specialising in this area will be of significant importance in the future to come.

I am also particularly glad that I introduced the International Holistic Competency Certification in Chapter 10 for quality assurance purposes, as this is the beginning of an imperative era in experiential learning programmes and holistic competency. Holistic competency is far too important to ignore, as we need to shift the mindsets of teachers so that our students will be ready for the future and be able to embrace the rapidly changing society.

With the ongoing challenge of the coronavirus disease pandemic, more different innovative teaching and learning activities have emerged and will continue to do so, and we are beginning to see the emergence of new assessment

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approaches and technological tools in this area. Massive Open Online Courses (MOOCs) and other online education courses have evolved with the advances in technology. These courses are catalysed by the pandemic when previously, learners' mentality and perception towards online education were still infantile and full of distrust. Online education set up by international industries is entering the post-secondary education market as an influential force in order to possess a market share of the neoliberal education industry. International corporations such as Google and Alibaba believe university degrees may be a distant past (Bariso, 2020) and that they can readily prepare a workforce for their industries in a matter of months by providing intensive courses. Some multi-national industries such as Apple, Ernst and Young (UK), and IBM have dropped the requirement of a degree as a criterion for graduate recruitment as they found "no evidence that success at university is linked to achievement in professional assessments" (Havergal, 2015). There seems to be an oversight that the purpose of post-secondary education is simply to prepare someone for a specific job – the end outcome; while other purposes of the post-secondary education are forgotten, particularly the learning journey – the process itself. Maybe universities have indirectly lost sight of this learning process, too, with constant external scrutiny and traditional mindsets and approaches assuming that students are only there to gain disciplinary knowledge. We need to ensure that a student's learning journey is planned at the forefront. Post-secondary education provides students the opportunities to build their characters, their holistic competencies, their resilience, values and morals, and these are all equally important for the society. We need to think of post-secondary education beyond mere job preparation, and we need to help students, their parents, and the public see beyond that as well.

In the future, universities MUST work collaboratively with the community on research and teaching. Curriculum needs to be designed with partners in the community to allow students to experience meaningful, ill-defined, authentic projects and environments, which will add value to the students' learning experience and at the same time, reestablish the purposes of university education. Thus, experiential learning will continue to have a considerable role to play in education.

Finally, I want to reiterate the quote used in Chapter 4:

> Assessment in the future may not be the kind of assessment that you and I traditional grew up with. The word assessment may mean something completely different. Or new term may need to coin for the type of assessment deems suitable for experiential learning.
>
> (Chan, CKY)

Whether the term – assessment (or any new term) is used to grade, evaluate, provide feedback or maybe to badge in the future, it requires us to be literate and insightful in experiential learning assessment. Assessment of experiential education is only in its infancy. This area needs to grow and develop, and more research and scholarships for teaching and learning will make it possible.

As the way forward, I foresee new research studies and teaching practices in the assessment of experiential learning will transpire. I hope that I have provided teachers and researchers food for thought in the various areas of experiential learning.

Thank you for taking your time to read it.
Yours sincerely,
Cecilia Ka Yuk Chan

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