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A Design Thinking Odyssey: Measuring and Documenting Graduate Learning Outcomes in the Co-Curricular Space

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ABSTRACT

Co-curricular experiences should be warranted a fair amount of attention in higher education, particularly
for their ability to help students develop real-world employability skills and a platform for them to critically reflect upon and expand their perspectives. These are crucial in developing the future-ready graduate – the type of graduate the Singapore Management University (SMU) strives to nurture. Yet, the authors have discovered that many students go from one activity to another without understanding what they can actually be getting out of these activities and how each activity connects to life after university. This has led the authors to seek to address the problem: "How might we rethink the purpose and delivery of co-curricular learning?" As part of the design thinking odyssey, this chapter details the prototype SMU has embarked on to measure and document students' learning in the co-curricular space.

INTRODUCTION

This chapter outlines the ongoing design thinking journey in co-curricular learning which we have embarked on in the Singapore Management University (SMU). The process entailed a reframing of the purpose and delivery of co-curricular learning, which, in turn, shaped our ideas on how the learning outcomes can be measured and documented.

Established in the year 2000, SMU has consistently placed a strong emphasis on students' character building and holistic development. The University has developed structured programmes in both career development and community service, and a vibrant student life environment including more than 150 meaningful co-curricular activities in the diverse areas of arts, sports and others, for students to engage in learning and development beyond the classroom. These co-curricular components of the SMU education complement the University's academic mission, providing the valuable platform for students to apply their classroom learning, prepare for their future, broaden their passions and contribute to making a meaningful difference in society.

In order to achieve SMU's vision of delivering transformative education for a new generation of graduates (Vision 2025), it is necessary to be clear, as a University, what the desired graduate learning outcomes are. The Graduate Learning Outcomes refer to the university-wide highest learning goals that are important to the University for all undergraduates, regardless of their discipline areas. This set of SMU Graduate Learning Outcomes (See Figure 1) was established as a result of the work of the SMU Blue Ribbon Commission on Undergraduate Education which was formed in April 2017. As a result of the work of the Commission, a set of SMU Graduate Learning Outcomes was established: Disciplinary and multidisciplinary knowledge; Intellectual and creative skills; Interpersonal skills; Global citizenship; and Personal mastery. In short, SMU seeks to develop broadly educated individuals, with depth of knowledge in selected domains, and workplace capabilities required to thrive in the 21st century.

In order for SMU to nurture graduates who are independent in mind and able to think both deeply as well as broadly, graduates will need to have developed intellectual skills of critical thinking and problem solving, as well as creative skills of innovative and entrepreneurial thinking. They will also require personal mastery, being self-directed and meta-learners with resilience and positivity. Graduates who are dependable in deeds will need to have nurtured interpersonal skills of collaboration, leadership and communication. The SMU graduates' strong disciplinary and multidisciplinary knowledge are the bases for deep and broad thinking. Lastly, graduates who create value at home and abroad are those who are able to combine their intellectual skills with a strong sense of ethics and social responsibility, and who appreciate their roles as citizens, locally and globally.

CO-CURRICULUM: TOWARDS A HOLISTIC, FUTURE-READY EDUCATION

Changes are enveloping the higher education landscape in unprecedented respects. Globally, there has been a clarion call from various quarters to urgently address the perceived skills gap of graduates. In fact, many of the gaps identified relate to non-disciplinary-specific skills and attributes which include critical thinking, complex problem solving, communication, collaboration, intercultural competence, ethical decision-making and socio-emotional intelligence (Hart Research Associates, 2015; World Economic Forum, 2016; National Association of College and Employers, 2020). Undoubtedly, the traditional notion of learning being confined to formal didactic instruction and exclusively to the acquisition of knowledge has proven to be woefully inadequate in addressing the needs of the dynamic workplace of today and the future. As such, the value and significance of co-curricular learning in higher education ought to be re-examined.

A distinctive feature of the SMU education is the development well-rounded students through experiential learning via its diverse co-curricular platforms (including student clubs and societies, mandatory internships and community service projects). All SMU undergraduates are required to complete minimally 80 hours of Community Service and a minimum 10-week internship attachment at a partner company prior to graduation. A large proportion of SMU students are also involved in at least one other

Figure 1. SMU Graduate Learning Outcomes

co-curricular activity. As propounded by Wankel and Wankel (2016) and Peck (2017), students gain important employability skills such as critical thinking as well as personal and social skills through co-curricular experiences where they are meaningfully and actively engaged, both cognitively and emotionally, in real-world settings.

As part of SMU's vision of providing a transformative education, concerted efforts have been made to enhance the experiential learning experience and to align learning outcomes from the diverse cocurricular platforms to the University's Graduate Learning Outcomes and career competencies desired by employers. The aim is to produce graduates who possess the skills necessary for the jobs of the future, including those arising from technological trends such as the Fourth Industrial Revolution.

RE-FRAMING CO-CURRICULAR LEARNING USING DESIGN THINKING

Design thinking has gained considerable popularity and attention as a paradigm to address open and complex problems in diverse fields, from healthcare and management to education. In particular, many problems that educators and administrators in higher education face in professional practice are varied, complex and difficult to address (Henriksen, et al., 2017). Such issues may span across teaching and learning, school culture and student development. Given that such problems are invariably multi-faceted and human-centred, they are rarely resolved through linear solutions. In this regard, design thinking can be suitably embraced as an accessible problem-solving methodology where iterative experimentation is adopted to achieve desirable, user-friendly and compelling innovations. Afterall, as Grant Wiggins and Jay McTighe mentioned in their book Understanding by Design, "teachers are designers and an essential part of the profession is the design of curriculum and learning experiences to meet specified purposes". For administrators, design thinking provides a practical approach for thinking through the challenges faced by their institutions.

The catalyst for us embarking on this design thinking odyssey was two-fold. One, due to the unique nature of out-of-classroom learning, co-curricular experiences often provide learning opportunities that may be quite distinct from academic learning experiences. As such, we endeavoured to devise a systematic approach that would facilitate the *generation* and *deepening* of learning from the wide array of experiential learning opportunities that our students embark on. Two, we wanted to be able to meaningfully *measure* and *document* students' learning from co-curricular experiences. The desired outcome was the development of a co-curricular record which students could then use to showcase both their involvement as well as the career competencies which they had developed in the process of participating in activities in the co-curricular space. The intention is that such a record can be meaningfully used alongside academic transcripts to better inform decision-making processes by potential employers, hiring managers, scholarship boards, etc. In particular, we postulate that such a co-curricular record would be of value especially for students who may not have the most stellar academic results, but who are in fact highly career-ready due to their acquisition of skills that would make them highly employable.

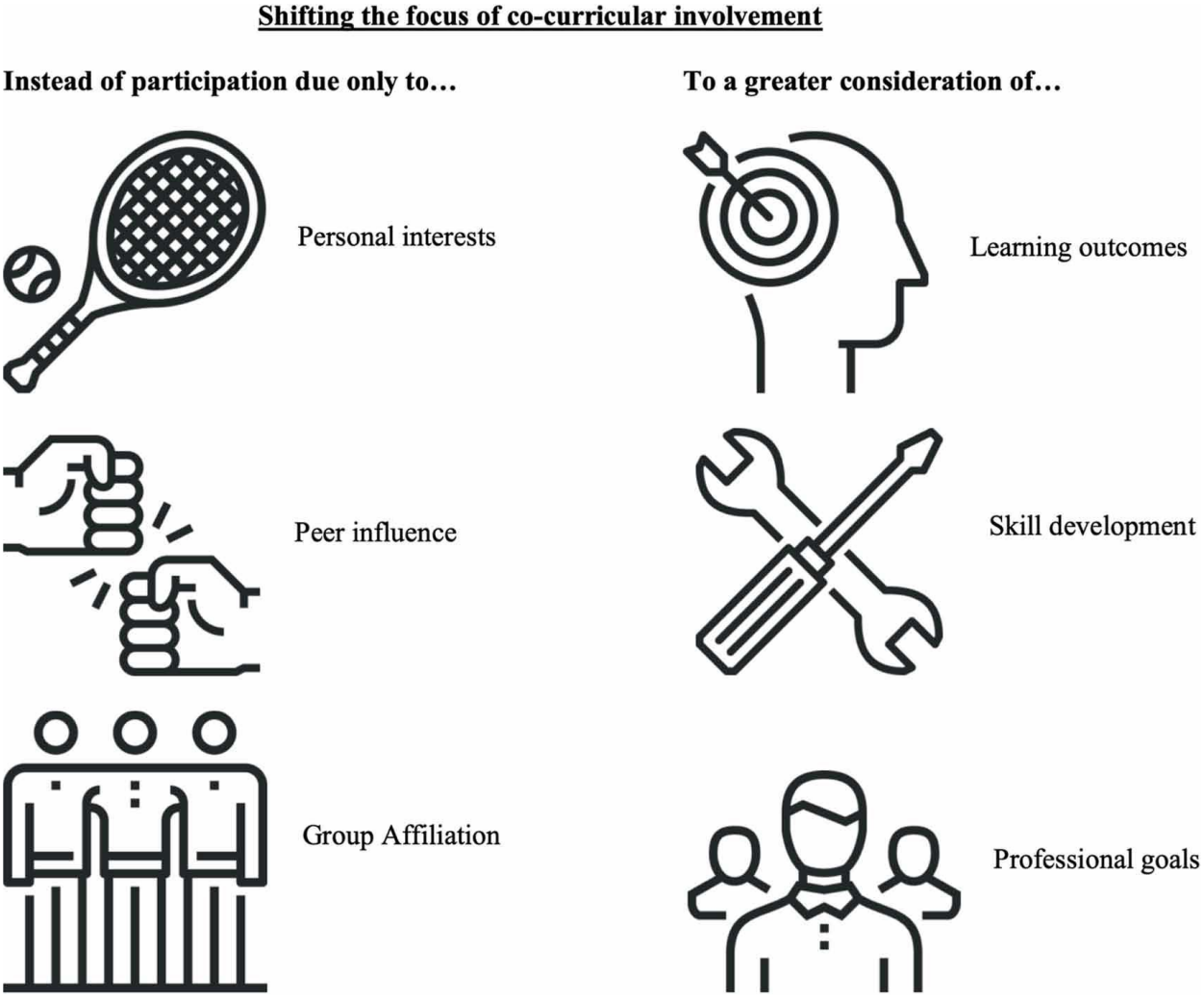
Empathize

The design thinking process starts with empathy and as a framework, it offers us a valuable means to understand the needs and motivations of the various stakeholders, each with their distinct interests and disparate perspectives. Through close observation of and direct engagement with stakeholders such as students, co-curricular educators and employers, we attempted to understand their experiences, motivations and needs. For example, why do students choose to take part in co-curricular activities? What motivates co-curricular educators to design enriching learning experiences? If employers say they value certain competencies and attributes in their hires, how do they go about their selection from a pool of fresh graduates? Empathy prompted us to set aside our own assumptions and instead focus on gaining deep insights into stakeholders and their needs.

Traditionally, participation in co-curricular activities in universities is generally optional and are not part of graduation requirements. Students share their motivations for opting to be involved in co-curricular activities, and these are typically driven by one or more of the following factors: personal interest, peer influence and the need for group affiliation. By having an empathic understanding of the stakeholders needs, desires and priorities, we not only managed to identify explicit "pain points" but were also able

to uncover latent needs that stakeholders themselves may not have recognised. In this instance, many students may go from one activity to another without understanding what they can actually be getting out of these activities, and how each activity connects to life beyond university. Such a situation is a pity, given that co-curricular activities provide unique and valuable out-of-classroom learning experiences, including the development of skills valorized by employers. As such, co-curricular involvement ought to be re-framed with a more learner-centred approach, where the learning outcomes, skill development and professional goals are key considerations (See Figure 2).

Figure 2. Shifting the focus of co-curricular involvement



In addition, in relation to the hiring process of fresh graduates, employers share that given that they typically do not have information beyond what is stated in the candidates' resumes and their academic transcripts, the shortlisting process is invariably and disproportionately informed by candidates' academic performance. This is in spite of how many employers say having people who can draw on their integrated skills and knowledge and who can perform well from the moment they join the organization, are more important than how a person has fared academically. Hence, the information gathered at this stage also enabled us to gain insights into employers' needs and the problems that we can strive to design solutions for.

Define

After consolidating and synthesising all our findings from the Empathize phase, we formulated our problem statement, framed from the stakeholders' perspectives, as follows: "Undergraduates need purposeful co-curricular learning experiences in order to develop and demonstrate skills and attributes valorized by employers".

The problem statement crafted during the Define stage helped steer the design process by forming the basis of our ideas and potential solutions. Indeed, whenever we got somewhat carried away or overwhelmed with implementation intricacies during the design thinking odyssey, it proved helpful to return to the problem statement which we had defined, which enabled us to refocus on the 'big picture'.

Ideate

The third phase in the design thinking process consists of generating ideas – or ideation. Based on the problem statement, brainstorming sessions were conducted with teams comprising staff members from various units overseeing various co-curricular activities. Ideas generated spanned from how the purpose and delivery of co-curricular learning can be reconceptualised to how the learning from co-curricular activities can be meaningfully assessed and documented.

The ideation process may sound straightforward, but was, in reality, a time-consuming process riddled with challenges. Inevitably, given the large number of both internal and external stakeholders involved, there was a great variance in the belief for the extent of change needed to be made from existing practices, or if there was even a need to make any change at all. For example, some were sceptical about the significance hiring managers would accord to the co-curricular record. There were also concerns about the ability of staff members to carry out reliable evaluation of learning in the co-curricular space. We also had to tackle challenges pertaining to Information Technology systems and integration. What we found helpful in moving us forward was that the very concept of prototyping used in design thinking implies that nothing is cast in stone at the onset; and that the prototype can (and will) undergo iterations and enhancements to address the various concerns that might surface along the way. In a way, this provided stakeholders more reassurance in getting them on board to experiment. In addition, we found ourselves regularly going back to the problem statement we had defined to keep us centred on what it was that we wanted to address as a University.

Through the process of ideation, it became evident that due to the unique nature of out-of-classroom learning, co-curricular experiences often provide learning opportunities that may be quite distinct from academic learning experiences. These, in turn, warrant different ways of measuring and documenting learning. The next section expounds on the idea which is currently undergoing prototyping and testing at the time of writing.

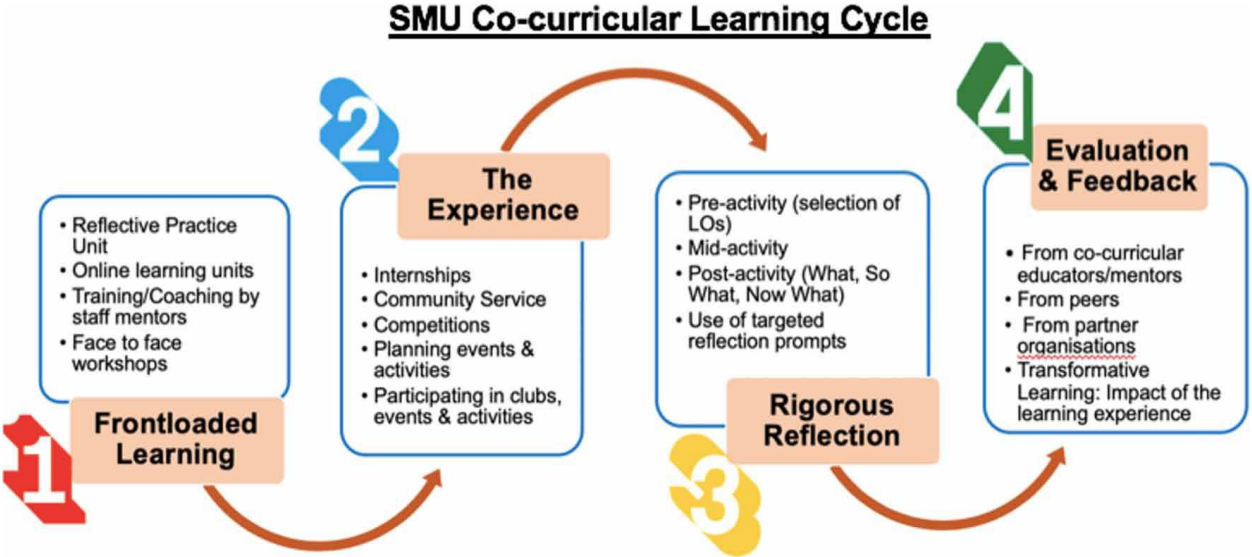
CO-CURRICULAR LEARNING AS A PURPOSEFUL AND SELF-DIRECTED JOURNEY: A PROTOTYPE

At SMU, we recognize that learning from co-curricular involvement does not occur automatically; neither should learning be left to chance. Instead, the learning has to be carefully and intentionally designed. As such, we strive to render visible the learning outcomes from co-curricular activities

through the deliberate curation and design of learning experiences that map to established learning outcomes. For example, all co-curricular activities – from student clubs to internships and community service projects – have explicit learning objectives, which are in turn aligned to the Graduate Learning Outcomes of the University. The goal is so that each co-curricular experience becomes a purposeful journey for students.

With the aim of making each co-curricular experience a purposeful and self-directed one for students, the four-stage co-curricular learning cycle (as depicted in Figure 3) has been introduced and adopted in SMU as a prototype.

Figure 3. Co-curricular learning cycle in SMU



Frontloaded Learning

The learning objectives for each co-curricular activity are set out at the onset so that students know what skills and competencies they will potentially be exposed to through their participation in the activity. All learning objectives are aligned to at least one of SMU's Graduate Learning Outcomes. This ensures that learning from co-curricular activities is not incidental or left to chance. Rather, the learning is intentional and carefully curated.

With the learning objectives in mind, the co-curricular educator in charge of the activity then designs and curates suitable learning opportunities for the students. The front-loaded learning can take on various forms, including online modules (e.g. Community Service Units1; Internship Readiness Modules2), face-to-face workshops (e.g. leadership and communication skills workshops) and mentoring or coaching sessions. At SMU, all incoming freshmen have to complete an online Reflective Practice Unit as part of the University's efforts to nurture self-directed life-long learners to future-proof our graduates' skills. The Reflective Practice Unit underscores the value of critical reflection, as well as provides guidance to students on how to carry out meaningful reflection.

The Experience

In this phase, students go through the experiential learning itself – be it the actual internship, planning and executing the event or community service project, managing the weekly student club activities or preparing for and taking part in a competition. Depending on the nature and type of co-curricular activity, the experience phase can span anything from a few weeks to a year. Frontloaded learning can still be taking place at any time during the Experience phase.

Rigorous Reflection

Osterman and Kottkamp (2004) make the important link between learning and reflection when they state: "While experience is the basis for learning, learning cannot take place without reflection" (p.24). At SMU, we believe that without reflection, learning from the direct experience cannot be assumed.

Each co-curricular experience actively engages students cognitively as well as emotionally. As such, each learning experience is a self-directed, and potentially transformative, journey. Every student's co-curricular experience is unique and what he/she takes away from it is also highly individualised. SMU promotes the culture of meaningful reflection to generate, deepen and document learning, so that students hone their ability to discern and make meaning from what they learn, make integrative connections, and articulate their areas of personal growth. Reflective writing grants students the agency to learn about themselves, by themselves, and to include themselves in their own learning process, thus enabling knowing to fuse with doing (Sánchez-Martí, et al.,2018).

This pedagogy draws from Mezirow's (2009) Transformative Learning theory in that students would encounter "disorienting dilemmas" throughout their co-curricular learning journey. The reflection process in Stage 3 of the SMU Co-Curricular Learning Cycle is designed to provide students the opportunity to truly invest themselves in the learning process and to critically (re)think themselves, (re)question own assumptions, beliefs and/or perspectives and (re)engage themselves in what they have been taught and what they are experiencing.

Evaluation and Feedback

As part of the learning process, it is also important that students receive timely feedback from anyone who is involved in their co-curricular experience – co-curricular educators, employer mentors, beneficiaries, project partners and even peers. Feedback can be solicited and shared with students through a variety of means, including one-to-one/small group mentoring sessions and eventually through an integrated online platform (the use of an online platform is currently at the pilot stage at the time of writing).

Rather than solely assessing the competencies demonstrated by students through their involvement in each co-curricular activity, SMU strives to also evaluate the impact that the learning experience has on the student in relation to specific predetermined Graduate Learning Outcomes. This reinforces the notion of self-directedness in the experiential learning journey, and also takes away the challenges of competency-only assessment given the wide range and nature of co-curricular activities that take place in SMU.

Hence, the evaluation of students' learning outcomes in co-curricular activities in SMU is based on two distinct dimensions: (A) **External demonstration** of behaviours, competencies and/or attitudes; and (B) **Internal demonstration** of values, attitudes and/or motivations through critical reflections as they encounter "disorienting dilemmas" (Mezirow, 2009).

In other words, the transformative learning approach is adopted where we strive to measure is the impact of the learning experience (in terms of attitudes, mindsets, skillsets) rather than assess the knowledge and skills of the student. As such, the focus of evaluation is on the student's learning that is 'caught' (as opposed to what is 'taught') from participating in the co-curricular experience.

As part of the prototyping phase, we have also developed different versions of the co-curricular record which document students' growth and achievements in the co-curricular space, organised according to each of the Graduate Learning Outcomes. These prototypes are being tested on real users (in this case, students, employers and co-curricular educators), allowing us to gather feedback before the final design of the record is developed. The intention of involving the stakeholders is to create stronger buy-in and solicit ideas in order to develop the strongest and most meaningful solution.

CONCLUSION

Given the importance of co-curricular experiences in equipping students with career-ready competencies that will enable them to thrive amidst technological trends such as the Fourth Industrial Revolution, it behoves administrators in higher education to pay some attention to not just ensuring that a vibrant student life exists on campus, but more importantly, to the value of purposeful and self-directed co-curricular experiences that render visible the learning outcomes. Ultimately, it is the students who stand to benefit most from such a shift in approach as with more seamless integration of learning between the curriculum and co-curriculum, they will not only be better equipped to move through university into the workplace, but also have a higher likelihood of success in their future workplaces.

Like any odyssey, this design thinking journey which we have embarked on at SMU has been peppered with numerous 'ups' and 'downs'. This design thinking odyssey in measuring and documenting Graduate Learning Outcomes has by no means come to an end. Rather, like design cycles, it has been an iterative and experimental process where results from the testing phase reveal new insights about users, which in turn have triggered refinements in our ideas and the development of revised prototypes.

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KEY TERMS AND DEFINITIONS

Assessment: The measurement or evaluation of learning.
Co-Curricular: Learning experiences that focus on beyond-disciplinary aspects and that do not necessarily yield formal university credit upon completion.
Co-Curricular Record: A document that serves as a testimonial of a student's involvement and learning in co-curricular activities.
Competencies: The knowledge and behaviours that lead one to be successful at a job.
Employability: Possessing the knowledge, skills and attributes that make one more likely to gain employment and be successful at it.
Experiential: The process of authentic learning through concrete experiences.
Reflection: A systematic enquiry to make sense of an experience in order to improve and deepen one's understanding.
Student Learning: The process in which students acquire skills and knowledge as well as develop attitudes through study and/or experience.
Transformative Learning: The process of deep, constructive learning in which learners consciously make meaning of one's experiences to construe new perspectives and/or understandings that guide future undertakings.

ENDNOTES

[1] These units cover Service Learning knowledge such as critical needs analysis and asset mapping.
[2] These modules cover topics such as resume and cover letter writing, job search strategies and interview skills.