Cross-cultural adaptation of educational design patterns at scale

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Abstract

Purpose – Educational design patterns offer practical strategies that can be shared and adapted to address problems in teaching and learning. This article explores how educational design patterns for connected learning at scale at an Australian university may be adapted to a Vietnamese higher education context.

Design/methodology/approach – 12 educational design patterns that address the challenges of active learning and large teaching team management are discussed. The authors then critically reflect on their cross-cultural adaptation for the higher education context, from an Australian to a Vietnamese university.

Findings – Transitioning from passive to active learning strategies and effectively leading large teaching teams present similar challenges across our contexts. Educational design patterns, when dynamically adapted, may assist educators to teach skills that are critical for work and the future. Higher education institutions globally could enhance their practices by incorporating international best practice approaches to educational design.

Practical implications – The Connected Learning at Scale (CLaS) educational design patterns explored in this article offer solution-oriented strategies that promote a more active learning experience. This paper identifies adaptations for educators, especially those in Vietnamese higher education that respect traditional structures, cultural nuances and resource limitations in implementation.

Originality/value – Whilst educational design patterns are well-researched in the Western contexts, few studies analyse design patterns in an Asian, and in particular the Vietnamese context. More research is needed in the cross-cultural adaptation of educational design patterns that joins practice and theory.

Keywords Vietnamese higher education, Australian higher education, Active learning, Design patterns, Cross-cultural adaptation, Learning at scale

Paper type Technical paper

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Introduction

The massification of higher education continues globally, with large classes common in the Australian and Vietnamese universities (Bock, 2000; Huong *et al.*, 2023). Traditionally, education at scale has tended towards passive teaching and learning through large lectures and testing knowledge through exams. Increasingly, educators value more active, experiential teaching and learning, typically associated with smaller cohorts (Kolb and Kolb, 2017; Huber *et al.*, 2023). As a result, many higher education institutions seek to prepare students with the creative, evaluative and relational skills they will need to tackle the considerable challenges of business and society (Vallis and Redmond, 2021).

As a response to the challenge of increasing enrolments, one large metropolitan Australian university has implemented a strategic project, called Connected Learning at Scale (CLaS), which leverages innovative pedagogies and technologies to redesign and transform the student experience in large classes (Wilson *et al.*, 2021). These pedagogies focus on active and self-directed learning in teams, emphasising the complex problem-solving, critical thinking and interpersonal skills needed to engage with such personal, local and global challenges (Wilson *et al.*, 2021). The design principles that underpin the project emphasises on the "the social process of connecting and the social acts of making, doing and sharing actions", rather than the transmission and reproduction of knowledge (Bryant, 2023). The project is supported by a multidisciplinary team of experts to co-design this teaching and learning experience, including business and education academics, students, alumni and industry partners (Vallis *et al.*, 2022).

The need to reform education is also keenly felt in Vietnam. During the last few decades, Vietnam has implemented substantial reforms, aimed at enhancing the quality and accessibility of education nationwide (Tran and Tran, 2023). The Higher Education Reform Agenda (HERA), spanning from 2006 to 2020, encompassed changes in curriculum, teacher training, infrastructure development and a concerted effort to align education in the Vietnam's higher education sector with the evolving needs of both society and the global economy. The initiatives of Vietnam's Ministry of Education and Training were introduced to promote more active, student-centred approaches to prepare graduates for future work (MoET, 2017, 2013). Recently, the Educational Development Strategy 5 (No. 711/QD-TTg, 2011–2020) focused on advancing the curriculum and cultivating Western-style educational methodologies (Nguyen and Lehy, 2015). The Vietnamese Prime Minister announced a National Strategy for the Fourth Industrial Revolution (Decision No. 2289 *(2021)*) to continue to reform higher education curricula and teaching approaches, emphasising science, technology, engineering and mathematics and stronger links to the industry.

This paper explores how educational design patterns developed at the Australian university might be adapted for a Vietnamese higher education context to support active learning approaches at scale. Whilst there are many similarities in teaching large classes internationally, higher education institutions are inevitably bound by the socioeconomic, political and cultural context of their countries (Tran and Tran, 2023). Organisational, social and cultural factors may influence teaching modes more than the question of scale. This study aims to deepen our understanding of the transferability of the patterns into this new cultural context. As one of the authors wrote and reviewed some of these design patterns, the study also contributes to an ongoing process of reflection and refinement.

In order to explore the complexity of cultural adaptation of design patterns in a dynamic and context-sensitive way, we critically reflect on a selection of patterns that are relevant to practitioners in the workplace rather than relying on the pre-existing theoretical frameworks of the traditional research methods (Fook, 2011). This analysis is grounded in respect for all educators, who highly value their own cultural and educational traditions (Tran and Tran, 2023). Our goal is to find a middle ground between suggesting new pedagogical approaches and acknowledging and respecting Vietnam's diverse educational heritage, an area that is yet

to be extensively explored in research. Practical implications for cross-cultural adaptation and implementation are then suggested. This study focuses on the higher education context in Vietnam. However, other universities currently face challenges in education reform may also benefit.

Design patterns

Design patterns have a long history in multiple disciplines (Schadewitz, 2009). Architect Christopher Alexander (1977) first proposed the concept of a pattern language as a way to systematically and coherently document solutions to recurring problems that could be used to solve the same problem in different situations.

Effective design patterns consider a problem's context and the driving forces behind its resolution, to simplify the selection of solutions for a given situation. Pattern languages have since become common in other disciplines such as urban planning and software design. In the early 1990s, software engineers used design patterns to systematically capture and leverage commonly used programming solutions. Design patterns have also proved to be useful in communicating complex artificial intelligence processes (Schoonderwoerd *et al.*, 2021).

In an educational context, design patterns offer practical teaching and learning strategies that can be exchanged amongst teachers, educational developers and instructional designers (Mor *et al.*, 2014). A key affordance of an educational design patterns is that they can be abstracted (Laurillard, 2012), meaning that a pattern originally used in one discipline, could be understood and used in a different discipline. These patterns offer a structured framework for documenting and disseminating solutions to common design challenges in education (Goodyear, 2005). Educational design patterns are based on pedagogical principles, research and expert knowledge that may otherwise be too abstract and complicated to communicate and implement without designer expertise (Lotz *et al.*, 2014). Hence, educational design patterns are crafted to capture and address pedagogical problems with best-practice solutions that are re-useable in different contexts (Nicolettou and Soulis, 2014). However, most of the educational design pattern work to date has focused on their capture and representation rather than their use in practice (Conole, 2013). This paper explores how the existing patterns designed in Australia could be used in Vietnam.

There have been several related studies on the reuse of design patterns in different contexts. For example, in A Timeless Way of Building, Alexander (1979) stresses the significance of formulating patterns as rules that establish relationships between a context, the forces within that context and the configuration enabling those forces to resolve themselves. Voigt and Swatman (2006) delve into the application of patterns across diverse domains like architecture, software development and educational technology design. They emphasise the importance of considering pattern adaptability beyond their original context whilst highlighting the pivotal role of the pattern's context and value system. Anderson *et al.* (2001) discuss a long-distance collaboration project involving faculty members from a South African university and a North American university. This collaboration did not meet expectations because of varying perceptions of the online forum. North American participants viewed it as a low-effort communication mode, whilst those from the South African institution, facing limited experience and unreliable technology, found it significantly more challenging. Salingaros (2000) underscores the need to customise patterns for specific local conditions and to view them as modular knowledge interconnected with other patterns at the various levels of abstraction, a concept best understood through scalar relationships. Bennett *et al.* (2005) also see some of the potential of using a generic learning design as a model that can be adapted from one context to another.

As we demonstrate in this paper, the process of adapting an educational design pattern is complex and nuanced. The language of design patterns is similar to living languages, which

evolve and adapt in response to different contexts. As Mouasher and Lodge (2016) note, design patterns must always be dynamically applied to be engaging and effective. Educators must bring their own experience and intuition to a pattern for it to be effective. In other words, design patterns are not the end point, an entry in a dictionary, but a starting point for a vernacular of educational design.

CLaS design patterns

Reusable educational design patterns have been developed from extensive evaluation and research on redesigned CLaS experiences that address some of the challenges of teaching and learning in large classes. Each CLaS design pattern is intended as an "off-the-shelf problem-solving resource for educational practitioners" that is flexible enough to be used in multiple ways and contexts (Mor *et al.*, 2014, p. 2).

Workshops were held to elicit patterns and develop a process to identify and initiate fitting patterns (Winters and Mor, 2009). The template and structure were inspired and adapted from the educational design pattern work of Iba (2014). Key components of the template include a pattern synopsis, the context, how the pattern addresses problems in scale, the problem, the solution and implementation and the patterns' connection with other patterns. The template also captures how the pattern builds on and/or supports educational theory and recent research. The Iba template was updated to suit contemporary educational designs whilst building on his procedure of identifying solution, problem, context and giving the pattern a distinct name. As can be seen in Figure 1, the design pattern template provides the basis for a systematic and coherent approach to recording design patterns.

At the time of writing, 27 patterns with solutions have been developed, researched and documented in the CLaS design pattern collection. The patterns address a variety of problems that reoccur when teaching at scale and are categorised as follows:

(1) Answering a large volume of questions in a timely manner,

(2) Quality interaction with students,

(3) Authentic learning and assessment,

(4) Quality active learning,

<table>
<tr><td>Pattern name
Give a name to this pattern</td><td>Context and relation to CLaS units.
In what context would this solution be useful</td><td>Scale
How does this solution support L&T at scale</td></tr>
<tr><td rowspan="2">Synopsis
This pattern is concerned with</td><td colspan="2">Problem
Describe the problem to be solved</td></tr>
<tr><td colspan="2">Solution
Describe the solution that address the problem</td></tr>
<tr><td>Implementation
How can the solution be implemented? Describe the steps. Consider teachers, students and support resourses</td><td>Empirical background
What recent research does this solution build on and/or contribute to?

What evidence do we have to support the effectiveness of the solution?</td><td>Connections to other patterns.

Which other patterns are dependent on, or could be used effectively in combination with, this pattern?</td></tr>
</table>

Figure 1.
CLaS design pattern template

Source(s): Figure courtesy of CLaS project https://clasdesignpatterns.com/about/

(5) Fostering a community of learners,

(6) Consistency of the student experience,

(7) Fostering a community of learners,

(8) Leading and managing a large teaching team and

(9) Quality interaction with students

The contextual characteristics of each pattern are described in terms of their level of difficulty, the size of the unit (subject) evaluated, the scope, mode of delivery and resources needed. Related patterns are also listed. Whilst its context is large business subjects, these design patterns may serve as a model for other faculties and universities to respond to similar problems.

Cross-cultural adaptation of CLaS design patterns

Table 1 demonstrates strategies to adapt and implement the CLaS design patterns (https://clasdesignpatterns.com/) in practical ways, including possible content customisation and technology integration, whilst being mindful of the patterns' underlying pedagogical principles and purposes.

From the nine groups of design patterns, we selected quality active learning (QAL) and Leading and managing a large teaching team (LTT). These two groups were selected because QAL is focused on student engagement, collaboration and critical thinking skills, which aligns with recent reforms that the Vietnamese Government is keen to realise. The effective leadership and management of teachers is the key to the uptake of novel teaching approaches and a consistent, high-quality student experience in Vietnam. The researchers then discussed the patterns over several meetings, and in an online collaborative document. We examined the patterns through our reading of relevant research in cross-cultural adaptation and our own lived experiences as educators in Vietnam and Australia. Overall, the process of suggesting adaptations was discursive and creative as the authors surfaced hidden assumptions within the designs that only became apparent through projecting the designs into a new cultural context.

In Tables 2 and 3, we summarise our critical reflections on our professional practice (Fook, 2011). We reflect on how the QAL and LTT patterns may be adapted to the Vietnamese

Group	Pattern
Quality active learning (QAL)	1. Introducing design thinking online
	2. Real-world projects for large classes
	3. Learning through multimodal assessment
	4. Meaningful engagement with course readings
	5. Peer feedback on group work
	6. Object based learning at scale
	7. Students collaboratively choose topics
	8. Interactive online workshops at scale
	9. Reflection at scale
	10. Student-generated data
Leading and managing a large teaching team (LTT)	11. Shared learning assets
	12. Connect: In workshops
	13. Single-day workshop scheduling

Source(s): Table created by authors

Table 1. The CLaS design patterns

Pattern 1	*Introducing design thinking online*
Overview	Students work through a self-paced online resource before attending tutorials, where they join groups (in virtual rooms or on-campus). Students follow a design thinking process to collaboratively design and refine a simple artefact, using a digital whiteboard to externalise and document their ideas and reflect on their process (Vallis and Redmond, 2021)
Alignment	• Design thinking is becoming popular as a methodology for work skills such as creative problem-solving, teamwork and creativity • Institutions like the Hanoi University of Science and Technology (HUST) have flipped and blended classrooms for larger classes. Students learn from resources on the learning management system (LMS) before attending in-person classes (Nguyen *et al.*, 2021)
Challenges	• Not all classrooms are well-equipped for collaboration. Teaching equipment is often restricted to a single blackboard, projector and screen and basic sound system. Power outlets may not be available for recharging devices or only available to teachers • Students in Vietnam may be hesitant to participate in group work without teacher supervision (Pham and Renshaw, 2015b)
Suggested adaptation	• Divide large classes into smaller groups of 10–15 students. Over the course of several sessions, rotate the groups so students interact with a variety of peers (Nguyen *et al.*, 2021) • Ask students to turn to each other and form smaller groups in inflexible spaces • Designate a leader of each group to facilitate discussions and share ideas with the larger class • Teacher provides more scaffolding for conducting the group activities
Pattern 2	*Real-world projects for large classes*
Overview	Flexible designs with different levels of engagement with industry are described which may simulate real-world business problems and projects in large classes
Alignment	• Developing students' practical skills in real workplace is important to Vietnamese higher education reforms, but a lack of authentic assessment tasks has been reported (Tran and Tran, 2023) • Many HUST training programs require students to complete a full-time internship (lasting a minimum of 8 weeks) at an industry site
Challenges	• Industries have limited capacity to accommodate students for internships. Teachers may not be able to find industry partners or community organisations for project opportunities • At HUST, industry interaction may be limited to half-day field trips or industry talks on campus which are extracurricular, and not embedded in specific courses
Suggested adaptation	• Identify courses where the industry talks and field trips align with learning objectives and may be integrated directly into course curricula • Leverage technology to bridge the gap between academia and industry. Engage with industry via virtual tours, webinars and online forums when physical visits are not feasible (Cerimagic *et al.*, 2022) • Empower students to seek out the industry contacts and organise events. Student-led career fairs, workshops or panels enrich learning and the curriculum (Milner *et al.*, 2016)
Pattern 3	*Learning through multimodal assessment*
Overview	Students are asked to reflect on their personal goals and progress through formative in-class activities. Students present multimodal representations (e.g. posters, portfolios and podcasts) to peers in brief sessions. Guided self and peer assessment helps students develop evaluative judgement (Kearney, 2013) and eases the teacher's workload
Alignment	• Young Vietnamese people are increasingly comfortable using multimedia technologies

Table 2.
Design pattern adaptations of quality active learning

(*continued*)

Challenges	• High workload can limit students' time for intensive formative assignments that do not contribute to final grades • "Saving face" is important to many Vietnamese students who may feel embarrassed answering questions in front of a large group or class or participating in debates and fear making mistakes (Truong and Hallinger, 2017). Vietnamese students tend to be shy when expressing themselves in a second language
Suggested adaptation	• Balance the design of assignments to provide students with opportunities for meaningful learning without overly burdening them • Create a supportive and inclusive learning environment that respects students' communication preferences (Pham and Renshaw, 2015b) • Encourage alternative means of participation, such as written reflections, online discussions or peer feedback, so students can contribute in a way that feels relevant, meaningful and comfortable
Pattern 4	*Meaningful engagement with course readings*
Overview	Teachers establish clear instructions around prescribed readings, carefully selected to meet learning objectives. Readings are accessed from an LMS which has a consistent template or structure for reading tasks
Alignment	• Students often struggle and do not engage with course readings. Vietnamese students often have limited awareness of different reading strategies, such as skimming, reviewing and the benefits of these strategies (Ho, 2016). Reading critically is also a common challenge for Australian students (Nguyen and Henderson, 2020)
Challenges	• None
Suggested adaptation	• This pattern can be adopted directly without modification
Pattern 5	*Peer feedback on group work*
Overview	Students are supported to take ownership of their learning by developing their ability to evaluate their own and others' performances and processes. The feedback students receive may complement feedback received from teachers
Alignment	• The majority of classes in Vietnamese higher education require that students collaborate in groups or teams to some extent
Challenges	• The value of incorporating peer feedback into teaching and learning is not always understood. Vietnamese teachers and students may not be accustomed to the process of giving and receiving feedback from peers
Suggested adaptation	• Provide students with private feedback sessions, peer assessments or anonymous participation options to reduce the fear of judgement • Reassure students that mistakes are opportunities for learning (Pham and Renshaw, 2015a) • Provide educational resources on the value of peer feedback that are curated or tailored for Vietnamese teachers and students
Pattern 6	*Object Based Learning at Scale*
Overview	Digital objects are used to facilitate deep observation, analysis, reasoning, communication, retention of knowledge and to draw conclusions based on an examination of evidence. Using object-based learning (OBL) as pedagogy may help shift student perspectives (Wardak *et al.*, 2021)
Alignment	• OBL as a pedagogy supports future work skills such as teamwork and skill development in empathy, analysis, deductive reasoning, problem-solving and creative and critical thinking
Challenges	• Teachers typically use an LMS but have limited or no access to additional online tools • Finding online resources, especially museums, tailored to specific subjects can be challenging

(*continued*)

Table 2.

Suggested adaptation	• Consider using free online tools, where it is not possible to provide institutional licenses and link to them from the LMS. • Organise workshops to help educators identify existing online resources for teaching. Students may be guided to critically engage with digital objects in open collections such as the British museum, for example
Pattern 7	*Students collaboratively choose topics*
Overview	Students are encouraged to reflect on their learning needs, explore potential topics collaboratively, and then choose and share their topic in the LMS. Students discuss how they came to their decisions and review them
Alignment	• This may be more suited to postgraduate learning in the Vietnamese context. In the last year of undergraduate courses at HUST, students choose their own topics and project work
Challenges	• Designing and developing the decision-making scaffold into the LMS may be resource-intensive for time-poor teachers who have not the benefit of educational design support
Suggested adaptation	• The basic learning design structure could be followed in the classroom. The key is to support students to engage in and responsibility for their own learning (Cook-Sather and Luz, 2015) • Implement class discussions for topic sharing and peer engagement. Stress individual responsibility and ownership of topics linked to personal needs and interests, fostering active engagement and self-directed learning
Pattern 8	*Interactive online workshops at scale*
Overview	Online workshops are designed to encourage reflective, hands-on learning (Harvey *et al.*, 2016). Students also enhance their skills in information and digital literacy by interacting with teachers and classmates online
Alignment	• At many Vietnamese universities, traditional face-to-face teaching has resumed post-COVID-19. Blended classrooms, combining in-person and self-paced modules are prevalent; however, synchronous online teaching is far less common
Challenges	• Reliable Internet and laptop or desktop computer are not always available (Huong *et al.*, 2023) • Lectures and tutorials, rather than workshops, are the dominant delivery mode in Vietnam. In engineering and science subjects, tutorials often are in laboratories with equipment
Suggested adaptation	• The basic workshop structure of orientation, groupwork, then review and reflection, could be adapted for face-to-face tutorials without the online component
Pattern 9	*Reflection at scale*
Overview	Students are asked to reflect on their learning at key points in the course which contributes to a final reflective assessment
Alignment	• Teachers and students are accustomed to learning from lectures and textbooks where questions and answers are provided
Challenges	• Teachers' high workloads limit time for formative feedback and feedforward • In fields such as engineering which traditionally focus on solving technical and mathematical problems, teachers and students may perceive less value in reflective activities • Teachers typically use an LMS but have limited or no access to additional online tools
Suggested adaptation	• Students can record reflections in available tools. At HUST, MS Teams is already used for reflection • Introduce reflection as an experiential learning strategy (Harvey *et al.*, 2016). Adapt introductory web resources on reflection, rubrics and exemplars for relevant disciplines
Pattern 10	*Student-generated data*
Overview	Students participate in a survey on a local or global issue, generating a dataset for learning data analysis skills. It supports student skills in formulating hypotheses, designing experiments and practising various statistical methods (Smith, 1998)

Table 2. (*continued*)

Alignment	• Large classes for foundational quantitative courses are common
Challenges	• Teachers and students are accustomed to learning statistical methods from lectures and textbooks where questions and answers are provided • The initial set-up, collection and distribution of student dataset is time intensive (Once the survey is set it can be reused semester after semester)
Suggested adaptation	• Invite teachers and students to formulate questions that are personally interesting and authentic to their contexts • Encourage students to participate in the entire process of generating a dataset with the tools available • Use tools that teachers and students know well. In HUST, for example, many teachers prefer MS Teams

Source(s): Table created by authors

Table 2.

Pattern 11	*Shared learning assets*
Overview	Collaboratively develop learning assets that can be shared and adapted across multiple courses
Alignment	• Foundational competencies, basic knowledge and skills need to be addressed consistently across many academic disciplines
Challenges	• Development teams often operate within their respective disciplines and cross-disciplinary workshops to explore potential overlaps or synergies are uncommon • Educators might hesitate to share their work with others in case there are mistakes and to "save face"
Suggested adaptation	• Organise interdisciplinary events around research to start conversations • Involve teacher private feedback sessions or anonymous participation options to reduce the fear of judgement
Pattern 12	*Connect: In workshops*
Overview	Diverse stakeholders, including teachers, students, industry partners, alumni, and educational experts, address common course development issues, strategies and solutions together
Alignment	HUST has adopted a Curriculum Design/Implementation (CD/IO) approach, with multiple meetings of students, teachers, and industry representatives at the outset of program development. This approach shares similarities with the principles of CLaS (Huber *et al.*, 2023)
Challenges	• Not all Vietnamese universities have embraced the CD/IO or other similar international quality assurance strategies • Workshops are typically conducted at the program level, with less frequent application at the unit/cohort/course development level
Suggested adaptation	Establish clear channels of communication and collaboration between development teams, faculty and relevant stakeholders. Regular meetings, shared documentation and feedback mechanisms help facilitate this collaboration (Vallis *et al.*, 2022)
Pattern 13	*Single-day workshop scheduling*
Overview	Multiple workshops or tutorials in a large subject are scheduled and conducted each week on the same day to ensure a consistent student experience and to simplify timetabling
Alignment	• In some university settings such as HUST, timetabling software is used to allocate physical classrooms to every class at the beginning of the semester. Once the timetable for a semester is set and announced, it is rarely changed during the semester
Challenges	• Adaptation may require substantial investment in physical resources
Suggested adaptation	• None

Source(s): Table created by authors

Table 3.
Design pattern adaptations of leading and managing a large teaching team

context. For each pattern, a summary of the pattern is provided, followed by how the pattern aligns with Vietnamese students' learning culture (Pham and Renshaw, 2015a). We then note potential challenges and adaptations to support the translation of the pattern to that new context.

In our analysis of the ten QAL design patterns, we found that only one pattern (Pattern 4) needed no adaptation. Reading the prescribed texts is essentially a self-directed and private activity that presents similar challenges to all students. However, most of the design patterns could be creatively reframed to suit Vietnamese cultural values and learning and teaching practices. Patterns with specific resources or infrastructure requirements (e.g. Patterns 1, 6 and 8), may be adapted if educators know what alternatives are available in the target institution. Patterns that depend on reliable and fast Internet connectivity, such as Pattern 8: "Interactive Online Workshops", need a significant modification to ensure that all students can participate.

Tables 3 and is a summary of our discussions and reflections around the three LTT patterns.

Reflecting on cross-cultural adaptation

Many Vietnamese educators are already innovating their teaching to better prepare students for the evolving demands of the modern world. Teachers are incorporating a wide range of pedagogical strategies such as blended learning, flipped classrooms (Huynh and Nguyen, 2019), peer feedback (Van and Duong, 2022) or fostering teacher-student interactions (Nguyen, 2009), the modern assessment techniques (Tang *et al.*, 2022) and the integration of technology into the classroom environment (Ha *et al.*, 2023; Tang *et al.*, 2022). However, as in the Australian universities, changing teaching practice may be slow and incremental and needs skilled leadership and planning (Mantai and Huber, 2021). Transitioning to active, student-centred learning, in any country presents a fundamental shift that may be met with resistance. Appreciating different learning cultures is essential for effectively implementing educational designs such as the CLaS design patterns. Within the Vietnamese context, some education reforms in student-centred learning, which are initially well received, may fail in the classroom contexts where cultural nuances are not sufficiently understood and integrated (Pham, 2010).

For active, student-centred approaches to be successfully adopted, educators need to consider the following cultural predispositions. Confucian values in Vietnamese culture emphasise respect for authority and the wisdom gained from elders and ancestors. This respect extends to the classroom, where students may be hesitant to question or challenge their teachers openly (Truong and Hallinger, 2017) or to participate in peer group-discussions without teacher supervision (Pham and Renshaw, 2015b). Many Vietnamese students look to their teachers for guidance and expect structured learning environments with well-defined goals. Traditionally, in Vietnam's education system, teachers are the primary source of knowledge and students are expected to memorise and recite information (Hang and Van, 2020). Differences of opinion and conflict in groups, sometimes seen as creative and necessary in the Australian context, may be avoided. Group harmony and cohesion take priority over asserting individual opinions in the Vietnamese society (Huong, 2008). In addition, the prevalent examination-oriented culture in Vietnam (Pham, 2021; UNESCO, 2018) places a strong emphasis on standardised testing and academic performance, and educators are concerned that changes from established curricula may negatively impact test scores.

The importance of "saving face" in Vietnamese culture and its impact on educational methods highlights the sensitivity that must be used when adapting design patterns for different cultures. Design patterns need to nurture a safe space for learning from mistakes without the fear of embarrassment. Within the Vietnamese context, integrating private

feedback sessions, confidence-building strategies and guidance for delivering feedback with care are suggested. Understanding these cultural tendencies is especially important in collaborative learning activities, where students and educators actively provide feedback to peers. This cultural adaptation differs from Australian approaches, which often assume universal readiness for active participation. At the same time, the authors note that many Australian universities have large cohorts of international students so that being aware of diverse cultural needs is essential. A cultural perspective on design patterns may help us develop more effective learning experiences for all.

Some of the design patterns are reliant on resources, both physical and virtual. For example, teamwork activities pose several challenges in the Vietnamese context, including accommodating larger class sizes and coping with immovable furniture that restricts flexibility. Therefore, the CLaS design patterns might be improved by modifying or adding more characteristics, such as noting some viable alternatives to the facilities and infrastructure required. Notes on the cultural values imbued in an activity may also be useful. Nevertheless, many design patterns may be adapted in the Vietnamese context to enable diverse peer interactions for all students. Similarly, integrating industry involvement into the curriculum in Vietnam requires careful consideration. Existing practices, such as industry talks and field trips, are one step closer to more work-integrated learning practices (Milner *et al.*, 2016). The student-led industry participation would empower students and constitute a rich design pattern of itself, linking more directly into programs and promoting their pedagogical value.

Uneven technical infrastructure and Internet access within institutions create accessibility issues. At the same time, mobile devices in higher education are becoming ubiquitous, even if mobile data is not. Technology can no longer be separated from pedagogy; technology is entangled in everything we do (Jandrić *et al.*, 2018). Rather than designing for a base level where no technology is assumed, patterns might provide examples and alternatives of modifications of the pattern structure. These could be progressively added as exemplars for other educators as they are implemented. For example, Pattern 6 "Object Based Learning at Scale", may be adapted by suggesting alternative technologies or resources for the recommended activities (such as digital virtual museums).

In our analysis, it became evident that adapting CLaS design patterns for the unique context of Vietnam, and specifically HUST, necessitates thoughtful consideration and discussion of cultural factors. Design patterns need to be a good fit for their local environment and cultural context (Alexander, 1977). Some patterns may be highly effective for certain age groups, individuals or learning environments but less so for others. As not all patterns suit all contexts, educators must exercise discretion in selecting and adapting patterns to ensure they align with their specific teaching situation.

Our process of cross-cultural collaboration in adapting the original patterns to a new context was illuminating. More collaboration with international universities would be helpful in creating educational design patterns, to increase their global impact. The CLaS design patterns are documented online to facilitate discussion and so that educators may contribute their views.

As CLaS design patterns were developed at a well-resourced Australian university, we acknowledge that there may be unintentional cultural assumptions in the patterns. Two of the three authors of this paper, work at the Australian university where the design patterns were developed, which may potentially bias our views, despite our awareness of it (Montgomery, 2014). Although one of the authors has lived experience as a teacher in Vietnamese higher education, we do not claim that our findings represent the full diversity of Vietnamese teaching and learning. Gathering more educator, student and other stakeholder views, where the patterns are implemented in the real context of Vietnamese classrooms, would extend our study and yield further insights.

In general, more research and reflection is needed on the cross-cultural adaptation of educational design patterns. The authors found that most relevant studies are centred on the Western contexts and found little research that could be applied to an Asian, and in particular a Vietnamese context that joins practice and theory. Yet understanding how these patterns can be effectively applied in diverse cultural contexts may potentially enhance global education's inclusivity and effectiveness.

In addition, we recommend considering the importance of both physical and virtual meetings to address issues related to cultural adaptation and potential misunderstandings, whilst maintaining an open mindset for learning. For instance, during our writing of this technical paper, two authors were unaware that the order of names is flexible in Vietnam, which can impact citations. In essence, adapting design patterns in this research required individuals to adapt and question cultural assumptions and an additional time allowance was ideally made for this purpose.

Conclusion

Maintaining the quality of learning experience whilst teaching at scale is a challenge and educational design patterns provide a coherent and systematic approach to providing proven solutions to recurring educational problems. As the patterns are guidelines rather than prescriptions, they are intended to be adjusted to fit different contexts. The authors' reflections on how to adapt CLaS design patterns contribute new knowledge by surfacing assumptions and considerations for cross-cultural adaptations of patterns developed in Australia for the Vietnamese context.

At the outset, we noted cultural and material differences in teaching and learning between our two contexts that factor into how design patterns are implemented or modified. Nevertheless, as we researched together, we found that university teachers may have more in common than might be expected and that cultural factors are not necessarily the most important aspect that impacts educational design patterns and pedagogy. For example, CLaS was designed to tackle challenges comparable to those currently faced by Vietnamese higher education. Despite more resources, shifting traditional teaching practice to more active learning is equally an ongoing challenge in Australian universities. This suggests that regardless of cultural variations, there are more shared issues and opportunities in higher education that can be addressed through the thoughtful application of adaptable design patterns.

The landscape of higher education is changing in response to the need for more future-oriented and work-applied skills and shifting from traditional to active teaching methods. Nuanced cultural adaptations acknowledge resource and infrastructure constraints and challenge traditional pedagogies without completely dismissing them.

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