Reconnecting relationships through technology

Design Patterns for Connected Learning at Scale

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Design patterns make hidden knowledge explicit and shareable. They are a tool to reflect on and communicate practical educational strategies for solving recurring problems. In this workshop we will explore and share educational design patterns for connected learning at scale that use educational technology to help students build connections with educators, peers and purpose. Participants will engage in object-based learning at the Chau Chak Wing Museum to consider and reflect on the nature of patterns and discuss how patterns are present in their educational work. After collectively identifying educational challenges related to 'problems of scale' in teaching and learning practice, we will use a design pattern template to discuss and capture potential technology-enabled solutions to challenges relevant to individual participants' contexts. To support this process, existing design patterns from the University of Sydney Business School's Connected Learning at Scale Project (CLaS) will be shared and discussed, with participant feedback contributing to the further shaping and improvement of these 'live' patterns.

Keywords: design patterns, connected learning, scale, educational technology

Workshop objectives

> *[Design patterns are] a method of encapsulating design experience and research-based ideas, rendering them available for re-use in concrete design problems.* (Goodyear, 2004, p. 343)

Design patterns originated in the field of architecture and urban design. Christopher Alexander (1977) developed a pattern language to solve common design problems in architecture and town planning. From the early 1990s, the software engineering discipline began to use design patterns to capture and build on common programming solutions in a systematic way. More recently, education has recognised the potential of design patterns to communicate practical educational strategies that can be shared amongst teachers, educational developers and learning designers.

Design patterns have been discussed regularly within the ASCILITE community since being introduced by Goodyear (2004), including in recent years by Warburton and Perry (2020) and Shalavin and Huber (2021). They provide a template for documenting and sharing solutions to recurrent design problems in education. This workshop provides an opportunity for attendees to learn more about design patterns and how they can be applied. Aligning with the broader conference theme of 'reconnecting relationships through technology', and touching on all sub-themes of the conference, the objectives of the workshop are for participants to:

- reflect on the nature of educational design patterns using object-based learning
- develop an appreciation of how educational design patterns can be used to share technology-enabled solutions to educational problems
- use a template to capture an educational design pattern relevant to their context
- examine and discuss innovative solutions to the challenges of large cohorts by engaging with and critiquing educational design patterns recently produced as part of the CLaS project

Workshop description and activities

Half-day workshop schedule

The workshop is a half-day (3-hour) workshop that could be run in the morning or afternoon (the schedule that follows has been written for a morning workshop). Participants would have a break for morning or afternoon tea as indicated.

Pre-work

Participants will be asked to read the following short blog post on Design Patterns for Connected Learning at Scale by the workshop presenters prior coming to the workshop:
https://cdrg.blog/2021/09/23/design-patterns-for-connected-learning-at-scale/

Duration	Activity	Resources
15 mins prior to start of workshop	Arrive at the museum for sign in	
5 mins	**Introduction** • Workshop aims • Acknowledgement of Country • Introduction to the Object-Based Learning Space • Introduction to presenters	

10 mins	**Check-in activity**
	
	• Participants record on a small post-it (adding their name in one corner):
	  ○ what a large class means to them
	  ○ one key challenge they have experienced with learning and teaching at scale
	• Responses are discussed in table groups and post-its are collected at the end of the discussion for sorting.
		• Small post-it notes

25 mins	**The nature of patterns** • Participants browse a set of museum objects on display in the workshop room and choose one object to focus on (available objects will relate to technology/tools to link with the conference theme) • Individually, participants draw a pattern that they see in the object and display this on a wall space • Brief reflection conducted: why are these patterns? • Facilitators place one object in the centre of the table and participants asked to look for hidden patterns in the object (reflections captured) • Participants return to original objects for deeper observation, and add further hidden patterns to their drawings • In pairs, participants describe their drawing and share their experience of how they noticed the implicit patterns • Wrap-up of activity and segue into next task	• Collection of pattern-based artefacts chosen by facilitators and curators • 20 pieces of paper and pencils • Bluetac • 2-3 large sheets of butcher's paper and textas
55 minutes	**Design patterns: using the template**	• CLaS pattern example in template form

	Post-it notes from check-in activity capturing participants' challenges in large classes have been grouped by facilitators (during previous task).
	
	• Facilitators introduce the activity focusing on the question 'Why write up patterns? The common challenges (from post-its) are read out and participants form groups based on shared challenges (5 mins).
	• Participants are provided with a pattern template, plus examples of existing CLaS patterns.
	• Participants attempt to sketch/draft a new pattern that addresses their common problem using the template. [Even if participants don't flesh out the details, they are encouraged to discuss the elements that would make up a pattern] (30 mins)
	• Groups share their patterns with a neighbouring group and discuss (15 mins):
	  o What the pattern is about
	  o How they approached working with the template
	  o Any challenges they experienced working with the template
	• Wrap-up (5 mins)
		• Blank pattern templates

30 minutes	**Morning tea** • Morning tea in Museum café area (20 mins). • Participants browse the museum freely (10 mins) (particularly the section on patterns) before returning to the workshop room. Participants take a photo of one pattern that caught their attention.	• Participants phones for taking a photo
10 mins	**Check-in [post-break]** Participants share photos taken in table groups and discuss why the pattern caught their eye.	• Participants' phones/photos for sharing back

35 mins	**CLaS design patterns**
	
	Participants are introduced to the CLaS design patterns (each group is given one pattern that has technology embedded in the solution to connect with the conference theme)
	• Participants discuss (25 mins including 5 mins individual reading time):
	  o How they would adapt the pattern to implement it (or support others in implementing it) in their practice context
	  o Aspects of the pattern that are helpful
	  o What is missing from the pattern
	• Whole group discussion conducted to help participants link their discussion to the pattern they drafted in the previous activity (10 mins):
	  o What have you learned from going through this process?
	  o How does this apply to your pattern?
	  o How could you use this discussion to further develop your pattern?
		• CLaS design pattern examples (one per group)
		• Post-its and pens
		• CLaS patterns

10 mins	• Participants asked to record their reflections / key insights from the workshop (5 mins) • Workshop evaluation (5 mins)	• Small post-its • Evaluation survey

Intended audience

The intended audience for this workshop is academics, educational developers, learning designers, academic developers, leaders and administrators who are:

- interested in how educational design patterns can be created, shaped and reused to make educational knowledge explicit and shareable (including in a community of practice or as an approach to capability development) and/or
- looking for design solutions to enhance connected learning at scale with the support of educational technology (including both teaching solutions and educational support solutions)

No prior knowledge of design patterns or experience of teaching large cohorts is assumed. The scaffolded process and resources in the workshop will allow those with differing levels of experience to participate.

Room and technical requirements

We propose running the workshop in one of the Object-Based Learning Spaces at the Chau Chak Wing Museum at The University of Sydney (having previously worked with the museum and Academic Engagement Curators). OBL is an experiential learning approach involving the active integration of objects in the environment that aid in the acquisition of transferable skills (Chatterjee & Hannan, 2015). The process engages participants in deep observation as they construct meaning through interaction with objects that link to complex abstract concepts. This will allow participants to engage with museum objects for the purpose of exploring the nature of patterns. These objects will be selected by the facilitation team prior to the workshop and set up by the museum's Academic Engagement Curators. This object-based learning activity is considered an important pre-cursor to the remaining workshop activities which are intended to help participants collectively explore educational design patterns. Further resources required are noted in the proposed workshop running sheet above. Participants will not need to bring any specific materials or technology for the session.

Maximum number of participants

The maximum number of participants for this workshop is 20. This is the number of people that can be accommodated in the Object-Based Learning Space at the Chau Chak Wing Museum. As the workshop will involve handling museum objects, this number will also allow museum staff to monitor the safety of the objects. The workshop will be run with a minimum of 8 participants.

References

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