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Affecting culture change: Experience from the trenches of Large-scale Education Transformation integrating active learning

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Since November 2021 the Faculty of Information Technology, Monash University has been engaged in a significant large-scale Education Transformation Project with the intention to reshape and reinvigorate the way teaching teams educate, interact with, and prepare students for the future. The goal is to transform Education programs in order to engage students in active learning experiences that encourage deeper learning, prepare students for the workplace through authentic assessment, and build connection and belonging within the community of staff and adult students. This paper reports on the work done to date, reflects on our experiences and learnings, and outlines the plan for the work yet to come. The purpose of this paper is to shine a light on a project in progress as a conversation starter and reference for other colleagues planning a similar project.

Keywords: education transformation, active learning, backward design, creative risk taking, culture change.

Project rationale and approach

The transformation work was motivated by several factors. There were concerns about low student engagement in class, and a desire to better align assessment practices to learning outcomes. Meanwhile, there were opportunities to explore new teaching and assessment approaches yielding deeper learning and active engagement in learning. A new Faculty building with purpose-built flat-floor collaborative spaces, sparked a desire for teaching teams to evolve content-delivery practices and reimagine the purpose of their classes. The project has adopted a co-design process that involves academics, professional staff, students, alumni and industry partners. A series of initial co-design workshops involving the key stakeholders identified the following areas of focus.

Table 1 : Transformation areas of focus

1. Reshape teaching	Reshape teaching, transform the way students engage with content and build knowledge to improve engagement and learning	Unit level focus
2. Reimagine assessment	Rethink and improve assessment practices to ensure authenticity and integrity	
3. Build community	Build community and a sense of belonging in the Faculty and to the profession	Faculty and course level focus
4. Embed professional skills	Embed the development of professional skills in course/unit design including teaching and assessment	

The journey so far: Transformation work undertaken

The education transformation work in the *teaching* and *assessment* focus areas began in late 2021. The primary plan was to enhance interactive and collaborative elements in synchronous teaching activities and asynchronous materials, and make assessments more authentic while reducing the incidence of academic misconduct. This work involved various stakeholders, including the unit Chief Examiners (CEs), Lecturers, Teaching Associates (TAs) and Educational designers.

The transformation process has been managed incrementally, aligned to main semester offerings. In phase 1, an ambitious approach was taken with multiple major changes implemented in one teaching period. The feedback from teaching staff involved suggested such a practice in a single semester was risky, that the workload was challenging and that their teams needed time to reflect on their experiences before enacting further change. The general view was that it is better to plan changes for implementation over two to three deliveries. Consequently, an iterative approach was adopted for later phases. In this new approach, the teaching team identify change

priorities and develop a plan to implement these over multiple teaching periods. The extent of these changes has meant many units have been involved in transformation for several semesters. In addition to strategically identifying units, academics may also self nominate their units to participate in the transformation work.

Changes involved in Transformation

Many unit teaching teams have fundamentally changed the teaching and assessment in their units including :

- unit learning outcomes (ULOs) have been rewritten and mapped to the learning and assessment activities.
- flipped classroom model with interactive pre-class activities have been adopted and traditional lecture delivery format replaced with active learning workshops.
- lecture content has been replaced with short bite-size videos and lesson plans and in-class activities have been refined to better link the pre-class activities to the active learning workshop.
- whole assessment regime has been redesigned to integrate more authentic forms of assessment and moved away from the high-weighted final exams.
- assessment specifications have been revised and detailed marking rubrics written with a focus on assessment clarity and expectation setting for students.

Effectiveness of the Changes

A total of 38 units have been involved in the transformation process to date. In addition to this 47 units have had a brush with transformation given a recent university directive to remove final exams. With the transformations happening over multiple teaching periods and some units run just once a year, fully understanding the effectiveness of these changes will take time, but the following is observed at present. The diagram below shows the student evaluation of the transformed units before and after the transformation works. Iterations with the negative number refer to the semesters prior to the transformation. The current result shows that the overall student satisfaction score increased in the first two iterations, and decreased in the third iteration. Some units have only gone through one or two teaching periods at this point, and the results may not be representative until we have more data.

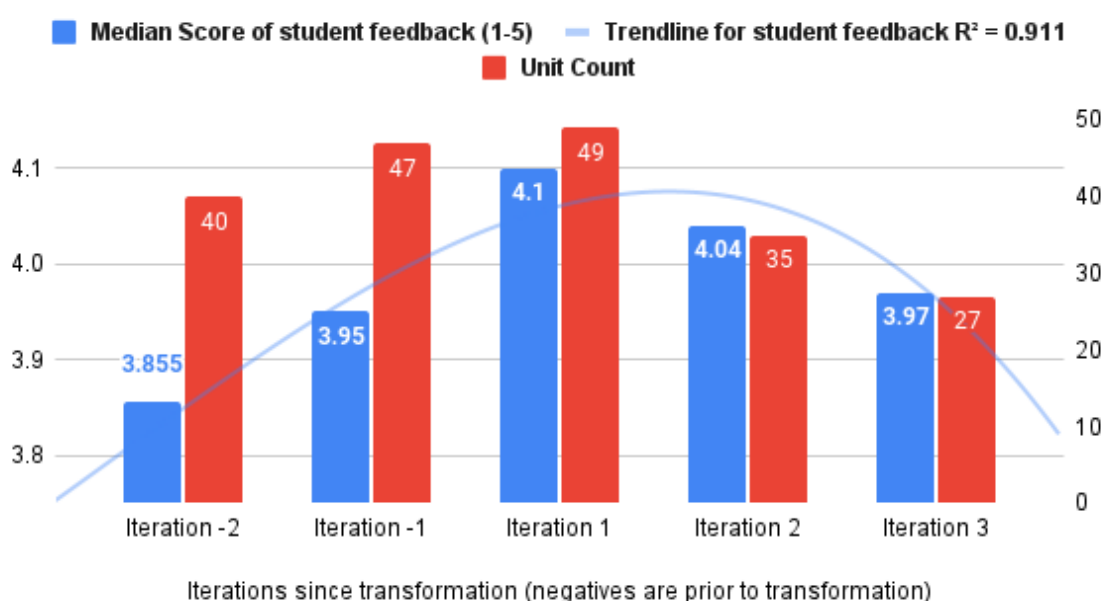


Figure 1: Graph of student satisfaction trends for transformation units.

A number of issues have arisen through the project, but those most relevant to ongoing work can be found in the table below. The supports refer to table 3.

Table 2: Major issues encountered

Issues arising	Consequences	Supports
Students not engaged in or	Low attendance in workshops, teaching staff either feel the need	1,2,5,7,8,9

valuing pre-class activities and being unprepared for active class sessions	to reproduce a summary of pre-work or skip certain activities. Perception from students that the learning is 'more work'	
Students not seeing active learning workshops as valuable and relevant	Some students did not engage in the active learning workshops as they don't see the importance of the activities to their learning. This reduced the effectiveness of the learning activities	7,8,9
Group work introducing new challenges for staff and students	Students unhappy about group work, and staff, concerned by logistical difficulties and student free-riding, plan to remove groupwork assessments contrary to strategic goals	3,4,6,7,8, 9, 10, 11
Limited student engagement in unmarked activities, instead focusing almost entirely on assessed work	Some learning activities are not attempted by students and some subject matter becomes difficult to consolidate as not all content can be covered in assessment tasks explicitly	5,7,8,9
Changes of teaching staff during the transformation process	Workload allocation is complex and often necessitates staff changes, meaning existing work can be slowed down with a loss of knowledge, momentum and buy-in from new staff during handover.	6

We're currently in a transition period between old and new teaching models, and time may alleviate many of the observed issues. Our experience, in line with research by Leithwood et al (2020) and Ishimaru and Galloway (2014), shows us that teaching staff need time to build expertise and comfort working with active learning techniques. A critical mass of units working in the new model is required to affect lasting cultural change to the learning and teaching environment. We have identified the following supports for action from this point forward.

Table 3: Unit, Course and Faculty level actions required

#	Support action Faculty level	Legend: Unit level Course level	Timeframe
Capacity building			
1	Provide guidance for teaching staff around how to manage and support unprepared students in class.		short
2	Provide more professional development (Hallinger, 2011; Leithwood et al., 2020) in running and supporting active learning classes and developing aligned pre-class materials		medium
3	Develop resources to support the introduction, teaching and assessment of teamwork and refine team-based tasks and assessments		medium
Coordination			
4	Work with Course Directors to coordinate introduction, teaching and assessment of team work within courses		medium
5	Coordinate across units to consider student workload holistically		medium
6	Develop a process that effectively manages the succession plan and teaching skills transfer as individuals and teams move on from the transformed units to ensure that the work is not lost.		medium
Communication			
7	Explain to students how all their learning activities are linked and relevant to their learning		short
8	Communicate with students about the changes being made and seek formal and informal feedback		short
9	Develop a culture shift in student mindsets and motivations.		long
10	Communicate with staff about the ongoing vision and need for change, highlight how leadership is role-modelling these practices and our collective role in enacting the vision		medium

	(Ishimaru & Galloway, 2014; Leithwood et al., 2020)	
11	Acknowledge that transformation work involves creative risk taking (Henderson et al, 2022). In order to foster a Faculty culture of creative risk taking in the unit design/development process staff need to be supported in feeling safe to take those risks (Hallinger, 2009; Leithwood et al., 2020)	medium

The road yet to come: Moving into the course level space

Methodology and plan

While unit level transformation work is ongoing, we are currently moving into course-level work on focus areas 3 (Build community) and 4 (Embed professional skills). The Faculty has identified the following professional skills and values-based competencies as of strategic importance. Teamwork, Communication, Indigenous perspectives, Equity-Diversity-Inclusion, Ethics, and Sustainability. We have selected teamwork skills and Indigenous perspectives to focus on initially and will work with selected courses to refine the following approach for application across the faculty. The proposed design methodology is based on the principles of backward design (Wiggins and McTighe, 2005) and constructive alignment (Biggs and Tang, 2011) and borrows heavily from the Kaospilot Vision Backcasting methodology (Kaospilot, n.d) Building on work by von Konsky, Jones and Miller (2013), it is designed specifically to incorporate the Australian Computing Society accreditation requirements to ensure compliance with our accreditation obligations.

Identifying professional skills as the ‘hidden curriculum’ and values-based competencies as the ‘red thread themes’ of the course, we will start by defining and illustrating the desired skill and competency set for a graduate. From that we will develop year level personas that illustrate progress towards the identified competencies, then we will design and map each course guided by those personas and conforming to accreditation level standards. The project plan, which again will be a co-design process involving a range of student, industry, academic and professional stakeholders. All stakeholders will be involved in the initial stages in defining and describing the goals. Those external to the faculty/university will then form a reference group for consultation and reporting on the later stages as internal stakeholders execute the agreed plan. Based on observations from the unit level work the project requires changes to administrative processes, thus faculty administrative and governance staff will be involved. Each step of the process will be accompanied by a communication campaign to the Faculty, and a plan for evaluating the efficacy of the process.

Opportunities & challenges

Our primary purpose with this project is to produce graduates with stronger communication and work ready collaboration skills combined with the necessary values-based competencies (e.g. demonstrating commitment to equity and sustainability in their work) to succeed in a rapidly changing global industry. In order to achieve this we need to make staff aware of their role in students’ competency development and how their work contributes to the course(s) as a whole, and we need to cultivate a more collaborative unit and course design culture. This will give the faculty a better oversight of course content and the strategic ability to modify and embed meaningful changes where necessary, supported by standing mapping processes. These standing course maps can then be leveraged for accreditation purposes, saving an enormous amount of staff time in accreditation years. As always in a multi-year project of this size and ambition, many challenges present themselves, both anticipated and unanticipated. The project must be flexible enough to absorb these situations as they arise. Some of the biggest challenges currently facing the project are:

- Securing the budget to complete the transformation work with the change of Faculty situation
- Carving out sufficient academic and Course Director availability to enable meaningful development
- Incorporating new directives from the university into the project operations
- Adjusting to the unanticipated movement of critical unit teaching staff.
- Designing to manage significant physical space limitations, exacerbated by a rapid growth in student numbers, and prevalence of tiered lecture spaces that are unsuitable for accommodating an active learning model.

In addition to these the following administrative and leadership supports need to be put in place to enable the change.

- Adjusting faculty administrative procedures that don’t currently support a course-level view over unit

design.

- Managing staff knowledge transfer and succession planning to ensure momentum and work is maintained. This affects staff workload planning and may require changes to current faculty processes.

Affecting widespread uplift in staff awareness and commitment to issues that they don't currently see as relevant to their units. This is particularly true for Indigenous Perspectives, Equity and Sustainability.

Conclusions

This paper has outlined some of the more noteworthy experiences and learnings from the current unit-level design, and the expected challenges and opportunities for the upcoming strategic work across a faculty-wide transformation of education practice. Currently the unit level transformation work is ongoing, and we continue to monitor the results and iterate based on feedback received. Moving into part B of this project we have the opportunity to support and consolidate the cultural change in the teaching model introduced in part A, and to address some of the structural issues that are hampering change efforts at a course/faculty level. To support this iteration, more in-depth investigation into students' perception of their performance and satisfaction with their learning experience needs to happen. As such, we continue to collect feedback from students for immediate action and future changes, and will analyse the aggregate feedback once a sufficiently longitudinal data set has been collected from the transformed units.

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