Professional Development for New Classroom Spaces: Extending the Concerns-Based Adoption Model

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ABSTRACT

This article outlines how a tertiary institution designed professional development, during the first year of a long-term building initiative, to support teachers moving into new collaborative learning spaces. The Concerns-Based Adoption Model (CBAM) is used to reflect on professional development strategies employed to support teachers into using new classroom spaces. The stages of the CBAM were useful in considering the value of resources created for teacher development. The paper concludes with a discussion as to how effective the model proved to be in relation to teachers' expressed concerns, and suggests expanding the CBAM parameters to reflect the complexity of professional development design for next-generation learning spaces.

Keywords: new collaborative learning spaces; teacher development; professional development

Introduction

Over the last two decades, many new learning spaces have been developed at higher education campuses (Brooks, Baepler, & Walker, 2014). While much discussion focuses on the setting up of such spaces in relation to design and evaluation, less research exists on how such spaces impact on actual learning and teaching (Brooks et al., 2014; Fraser, 2014b). New spaces with flexible furniture arrangements and the latest technology are only as good as the teaching and learning that happens in them (Lippincott, 2009). The teacher is key to ensuring that good teaching and learning occur in new spaces.

At this stage, there is limited research on what constitutes effective support for academics working in new spaces (Fraser, 2014a). Transforming teaching practice clearly demands time and energy (Olsen & Guffey, 2016; Steel & Andrews, 2012), resources which may conflict with research demands on higher education academics (Carr & Fraser, 2014). Steel and Andrews' (2012) model for academic development in preparation for working in technology-enriched spaces involves teachers making their personal teaching beliefs explicit in order to re-imagine how technological and pedagogical possibilities might be actualised. However, implementing such changes across an entire institution is more demanding.

This article describes the professional development implemented at a large polytechnic in New Zealand, and how strategies and resources mapped to the Concerns-Based Adoption Model (CBAM) and to actual teachers' concerns. This article does not report on a research study, but rather evaluates the value of the CBAM model for planning professional development in relation to preparing teachers to work in new spaces. Feedback from teachers that informed decisions around professional development came largely through conversations, emails and group meetings rather than through formal data collection. An informal mini-survey of teacher users is described in the section 'The concerns of teacher users of new spaces'. While the CBAM's stages of concern suggested further possible ways of supporting teachers in moving to new collaborative spaces, the framework itself needed to be extended to account for the complexity of professional development in new spaces.

Institutional context

Along with institutional restructuring, a major curriculum overhaul was predicated on future delivery models, including highly blended learning, work-based learning and face-to-face active and collaborative learning. This article focuses on the development of face-to-face classroom spaces, which were part of a significant building project to reduce a sprawling campus and create classrooms that were more fit for purpose.

Prototype classroom spaces were designed to enable active and collaborative learning, underpinned by the belief that learning is socially situated in complex conversations that occur inside and out of classrooms. New rooms include moveable furniture (on wheels) arranged in groups of up to eight, with each group having a large-screen Computer on Wheels (CoW). Software installed supports communication, interaction and blended learning opportunities in these spaces.

The challenge for the central advisory unit for learning and teaching was to manage the shift for teachers into new spaces, and support a concomitant shift to pedagogy that would accommodate active and collaborative learning. Rollout was gradual, with two

prototype spaces developed in the first year, and two more the following year, so the number of staff with opportunity to teach in new spaces was initially limited. However, with the intention to have many more such classrooms available over the next three years, it was important to raise awareness of staff across campus generally, as well as to work specifically with teacher users of the new spaces. Professional development therefore focused on these two areas, and two members of the academic advisory team were responsible for supporting a growing community of practice, and creating learning opportunities through generic and specific workshops with self-access resources for all staff. The remainder of this article discusses how these professional development strategies and resources were mapped to the CBAM, and reflects on the adequacy of the model in this context.

Concerns-Based Adoption Model (CBAM)

Change initiated institutionally from a top-down perspective continues to impact individuals' experience over time. The Concerns-Based Adoption Model (CBAM) was developed to chart educational change at the individual stage and has been used to identify teachers' perspectives on innovation in multiple contexts and across different fields and levels of learning (George, Hall, & Stiegelbauer, 2006; Saunders, 2012). The seven stages of the concern-based developmental framework are outlined in Table 1. The types of concern relate to self, task and impact, although it is important to note that teachers may not necessarily move through the stages in order (Hollingshead, 2009; Kwok, 2014).

Table 1 The stages of concern in the Concerns-Based Adoption Model (based on George, Hall, & Stiegelbauer, 2006)

		Stages of Concern	*What the concern looks like*
Impact	6.	Refocusing	Are there ways to use this innovation that might work better?
	5.	Collaboration	Are there other teachers who might want to work collaboratively with me?
	4.	Consequence	How will my students react to this? Will it help their learning?
Task	3.	Management	What does this look like in the classroom space? Do I have to change the way I teach?
Self	2.	Personal	What are the implications for me? Do I have time and capacity to do something new?
	1.	Informational	What's it all about?
	0.	Unconcerned	I'm not really interested.

As well as being a tool for measuring teachers' concerns with implementing innovation, George et al. (2006, p. 58) identify generally that the CBAM can be used "as a means to develop, focus, and support professional development". Similarly, Saunders (2012) found that the CBAM provides a useful framework to inform or even to assess professional development in the Australian vocational education and training context. However, further research needs to be done to extend understanding of how the CBAM could provide a planning tool for professional development (Khoboli & O'Toole, 2012).

Professional development processes identified

At the institution under discussion, opportunities for professional development for academic staff and teacher users of new collaborative learning spaces were developed by the advisory team, in response to needs identified by teacher users over the initial year with two prototype spaces in use. Support during the first semester was largely in relation to use of technology tools and identifying and exploring the affordances of the new space for learning with the 10 teacher users. Activities and materials to support teacher learning were created, based on needs identified by the teachers themselves through interactions with advisors. Professional development during the second semester, with 30 teachers involved in teaching in two new classrooms, became more formalised with preparatory workshops for new users and observation processes set up. It was towards the end of the second semester of using the rooms that the author became aware of CBAM, and used it as a framework to check whether the breadth of learning opportunities and materials that had been developed would map to the theoretical stages of concern identified in the model.

Mapping our existing strategies for professional development to the CBAM

Strategies for teacher development were mapped to the CBAM (Table 2). The second column in Table 2 identifies a particular emphasis for professional development based on each stage, as suggested by Wenmouth (2014), while column 3 gives examples of the kinds of questions that teachers might ask when faced with having to work in new spaces, a number of which are drawn from actual questions asked by teachers in professional development contexts or after participation in staff events run in the new spaces.

Table 2 Strategies for PD mapped to CBAM

Stages of concern, based on CBAM	Main emphasis for professional development, based on Wenmouth, 2014	Typical concerns expressed by teachers	Professional development strategies for teacher users in new spaces	Professional development strategies for all staff
0. Unconcerned	Raising awareness	What does a new collaborative learning space look like? Why are we changing the kinds of spaces we use? What's wrong with lecturing?	Hands-on demos of technology (CoWs and software) Sessions exploring opportunities for teachers including hands-on practice and access to resources shown	Institutional events held in the prototype rooms deliberately demoing different aspects Departments able to hold staff meetings in new spaces if available Videos sent to all staff, of interviews with key members of planning team describing intended new spaces
1. Informational	Providing information	What do other teachers do in this space? How do I get in? How do I use the technology? What is it like to teach in this space?	Community of practice (CoP) meeting on regular basis How-to resources available on Moodle Personal stories from previous teacher users retold in PD sessions and shared by teachers themselves (online and face to face)	Institutional event with demonstrations of teaching by different teacher users from variety of disciplines Opportunity for all staff to visit classrooms in action Workshop on New Spaces run in the space
2.. Personal	Establishing relationships and support	Who can help me? How will this space affect what I currently do? How much freedom do I have to change room layout? How much time will I need for planning?	Weekly update emails to teachers Individual email interaction with and support from academic advisors based on online reflective feedback Meeting other teachers at CoP Academic advisor focus on one-to-one support and developing relationships	Workshop at institutional event with focus on 'Teaching in new ways in old spaces' – promoting active and collaborative learning before teachers move into new spaces
3. Management	Demonstrating procedures and establishing routines	How do I use the technology? What do I need to know to use the space?	New teacher user induction Routines for students identified Online resources designed for self-access to develop confidence Drop in for hands-on practice	General PD workshops run by academic advisory team offered in new spaces whenever possible – demonstrate routines and possibilities
4. Consequence	Clarifying impact on students and developing effective teaching techniques	How will being in this space impact on my content delivery? What might it be like for me to teach in this space?	Suggestions for teaching and use of specific tools e.g., whiteboard New teacher induction – using student feedback to consider possible changes to practice	PD workshops related to space 1. New Spaces – run for each department with chance to explore possibilities for specific disciplines

		How will it affect my students?		2. Principles of Collaborative Learning (general group work) 3. Collaborative Learning in New Space (examples of group activities)
5. Collaboration	Disseminating ideas and working collaboratively with others	Who else is using these spaces? Who can I talk to?	Weekly update emails to teachers New spaces CoP	Video interviews to give teacher stories
6. Refocusing	Refocusing on new developments	Am I making the best use of the space? Can I contribute to ongoing research about use of the space for learning and teaching?	Evaluation process Observation process Further possibilities given for reading – suggest action research	

Different strategies were put in place for two groups of staff (columns 4 and 5). The first group was the specific teacher users of the new rooms, who needed just-in-time support, while the second group was the wider staff body, including academic and non-academic staff. During the first year, energy was put into communicating with all staff at the initial stages of the CBAM – raising their awareness of upcoming change and providing information about the new classrooms. However, the smaller group of teacher users who were the actual adopters of change needed more in-depth professional development and support for teaching in new spaces. The different ways in which these two groups were supported is detailed further in the next two sections.

Stages of concern 1-3

Teacher users attended workshops prior to the beginning of semester, where they were given hands-on experiences in small groups. Participating in such activities gave teacher users the chance to identify the affordances of the space. The first few weeks of semester were very focused on support and developing relationships. Most classes had an academic advisor present for the first couple of weeks for half an hour as teachers set up for and started their class. Teachers needed to know who they could contact for help with the variety of issues that emerged with weekly use. While functional matters were addressed early on (how to use the teacher-interactive whiteboard; how to share CoW screens), there were ongoing discussions with academic advisors as to the extent to which their existing pedagogical practices worked in the new space. Personal stories of how practice was evolving in different programmes were shared. A community of practice (CoP) was established in the first eighteen months as part of professional development, with opportunity for regular meetings and weekly online feedback. This allowed teachers the chance to express concerns beyond stages 1 and 2.

General staff awareness (column 5) was developed by communications through institutional channels, including video and news updates. Exposure to the space through staff being learners in workshops and by visiting classrooms in action highlighted how the space could be used for good learning and for teaching, and gave opportunity for constructive discussions about active and collaborative ways of learning.

Stages of concern 4-5

As teachers identified specific concerns at these stages, our advisory team responded with regular drop-in sessions for teachers to have hands-on practice with technology. We created videos and 'cheat sheets' for specific technology information, and worked with teachers around expectations of how classrooms/furniture/computers were left for the next class to use. Teacher users wanted resources to use with students and these were developed.

Workshops focused on pedagogical implications of new spaces, particularly on how to implement collaborative learning. As well as offering theoretical models from the literature, student feedback was used for discussion activities to help teachers reconsider appropriate practices in the classrooms.

Stages of concern 6-7

At the end of the first year of using new spaces, considering stages 6-7 from the CBAM helped to inform our future strategies for professional development. We identified how we were supporting teacher user collaborations, and considered further ways in which we could encourage informal mentoring to happen. Few teachers engaged in any depth with the shared online spaces set up for exchanging ideas and experiences. More successful for this purpose were monthly face-to-face lunch-time meetings (the CoP). It was not easy to identify individual staff concerns at the 'Refocusing' stage, although some staff reported informally that they were reconsidering practice in response to their teaching experiences.

While the professional development provided in the first eighteen months mapped very neatly onto the CBAM (Table 2), the model also identified some gaps in provision and was helpful as we considered further ways in which we could continue to provide appropriate support for staff in the future.

New classrooms: Business as usual

As the number of new classrooms increased, and teacher users represented a bigger proportion of academic staff, it became harder to sustain the community of practice. Due to many staff being unable to attend initial introduction sessions to new spaces, we created a virtual introduction around the functional use of the space, covering teacher and student use. Teachers seemed more ready to discuss pedagogy when they were several weeks into the semester and felt comfortable with managing the space. We adjusted our workshop schedules to accommodate this, and to engage teams of teachers working in spaces to share practice that is often quite discipline specific, rather than holding workshops for all-comers.

As numbers increased, our advisory team could not keep up with the demand for one-to-one functional support in classes, particularly at the beginning of semester. Instead, we devised a system whereby teachers could request support from 'eLearning' students, who had been taught in the new spaces the previous semester and who were familiar with the technology tools available and how they worked. Students received some training and could be booked to be present in a class for the first hour in the first three weeks of new teacher use. They were paid internally. Outsourcing functional support in this way meant that academic advisor input could be more focused on pedagogy in discussions with teachers. We are considering ways to engage teachers more in virtual spaces such as live conferencing, as well as suggesting a mentor system within departments for experienced staff to work with new users.

Initially, professional development strategies related largely to teachers' concerns for self and for task. The stages of concern in relation to impact (i.e., consequence, collaboration and refocusing) seemed to represent a deepening engagement with the new spaces. Considering how teachers might range along this continuum and being aware of different aspects of concerns around working in the new spaces enabled our team to develop strategies for targeted professional development, as well as to consider further the kinds of resources that were available for staff.

Mapping resources created to the CBAM

The CBAM proved helpful when considering the nature of online resources that we developed for teachers. Resources were accessed through a Moodle course, into which all staff users of new spaces were enrolled, and into which any staff member could self-enrol. All professional development with teacher users made use of this self-access Moodle.

As with the strategies for professional development, the stages of the CBAM proved an effective check as to the value of materials in addressing teachers' concerns. Table 3 gives examples of the different kinds of resources developed in response to each stage. Note that in tables 3 and 4, I have conflated the CBAM titles for each stage with Wenmouth's (2014) titles for further clarity in relation to the content of each line.

Table 3 Resources for PD mapped to CBAM

Concerns-Based Adoption Model level: Professional development focus	Examples of resources created to support different stages of concern
0. Unconcerned: Raising awareness	Photos of new learning spaces with rollovers (created in ThingLink) suggesting affordances Videos about new space and possible uses
1. Informational: Providing information	Affordance sheet given in more detail than photo above Video for students about new spaces Links to websites/articles about new spaces created in other institutions How-to interactive self-induction created in Captivate – demonstrating procedures through interactive activities
2. Personal: Establishing relationships and support	Moodle forums encouraging teachers to share experiences and concerns Teacher stories of personal experiences shared as narrative

Concerns-Based Adoption Model level: Professional development focus	Examples of resources created to support different stages of concern
3. Management: Demonstrating procedures and establishing routines	'Cheat sheet' for using screen-sharing tool (laminated and placed on teacher CoW) Info sheet/pyramid for students in centre of each group with information about procedures
4. Consequence: Clarifying impact on students and developing effective teaching techniques	Headlines from student feedback Links to resources about active and collaborative learning Resources created in response to problems observed in the space
5. Collaboration: Disseminating ideas and working collaboratively with others	Timetables published so teachers could see who was teaching in the space Teachers invited to add their own stories of personal experiences
6. Refocusing on new developments	Annotated bibliography for further research/reading

Some of the resources in the table were developed in response to teachers' requests for information. Teachers asked for hard copies of online 'cheat sheet' instructions to help with using new tools, so printed sheets were laminated and placed in each room to support basic screen sharing. In Semester 1, teachers identified that students also needed information about the room, particularly in regards to ways of learning that were not lecture-oriented. A group of students in the filmmaking course developed an introduction video for students, covering routines and explaining the purpose of collaborative spaces for learning.

Other resources were developed to address specific issues for teaching and learning noticed by advisors during observations. Drawing on positive ways that some teachers used whiteboards or managed group feedback, suggestions were given to all teachers for creative ways to conduct these activities more effectively in new spaces.

Our teachers' concerns mapped to CMAM

The concerns of academic staff in general

Raising awareness of all staff across the institution was a crucial part of our first year. All academic staff had the opportunity to book a visit to a classroom and observe students in action in new spaces. Voluntary informal feedback on visits was received from 43 staff (37 of whom were academic staff) between April and November. Concerns raised related generally to technology use, to the physical space itself, and to how to create good learning and experiences for students.

Teachers felt challenged by the demands of using technology in the new space. Concern was expressed over the size of rooms and the ability of a single lecturer to engage effectively with all groups/students. Sound quality and the distributed layout of groups were also seen as a problem, and teachers were not sure that microphones could be used effectively. They were also concerned that students would become disengaged – for some this was conjecture, while for others it was based on observation. One of the main concerns related to the fact that lecturers were still considering how the room would be used for current teacher-centred learning.

Overall, despite these reservations, academic staff generally seemed confident that it would be easy for them to teach in one of the new classrooms (63% agreed with this statement) and that they would enjoy teaching in these spaces (68%). Even with minimal professional development, staff seemed confident that they would be able to implement the affordances of collaborative learning spaces, echoing a similar finding by Evans and Cook (2014).

The concerns raised in this informal evaluation with a small number of interested staff, who had chosen to spend an hour observing a class in a new space, were very similar to the initial concerns of teacher users identified in the next section.

The concerns of teacher users of new spaces

Teacher users of new spaces initially identified concerns across Stages 1-5 of the CBAM. In the first week of using the space, teachers filled in a brief informal questionnaire that asked four questions-:

- What do you think you will need to do differently in this learning environment?
- What will be easy?
- What are your biggest concerns?

- How can the institution best support you in this endeavour?

The prevailing concern at the beginning of semester seemed to be about using the technology appropriately. Below, concerns are identified in relation to stages of the CBAM.

General awareness of value and use of new spaces (Stage 1)

Teachers' positive and wide-ranging responses to the question 'What will be easy in this space?' demonstrated that they had a general awareness of the space and how their classes might work in here.

Needing information (Stage 2)

The main issue for teachers was knowing that technology would work. Most teachers appeared to distance themselves from the problem by expressing abstract fear that the technology would fail, or let them down. Their comments suggested that technology was an abstract issue that could get in the way of the business of teaching – that it could be 'unpredictable'. One teacher expressed concern about technology problems intruding on teaching. Another said that she was concerned about small problems detracting from activities, such as flat keyboard batteries or microphones not working. Another was concerned about getting clickers to work with the technology in the room. Only a few teachers owned specific technological aspects that they needed to work on personally to ensure the smooth running of presentations to students.

Personal concern (Stage 3)

Teachers were concerned about being able to learn about the new space. One teacher felt she might not sufficiently understand all the possibilities the technology could offer. Time was clearly an issue identified for learning about the new space generally and, more specifically, reservations were expressed about having time to develop and prepare new activities and tasks.

Other concerns were even more personal, for example, not having a sense of 'belonging' in the space; or related to teachers' own high expectations of the space, that they might try to achieve more than was actually possible. Teachers also expressed nervousness about students' reactions to learning in the new space. They were concerned that students might feel they were part of an 'experiment', that students might not engage sufficiently or that the course might not feel cohesive for students.

General procedures and establishing routines (Stage 4) and effective teaching techniques (Stage 5)

Minimal concern was expressed initially about management (Stage 4) other than for using technology. However, a number of teachers discussed concerns about consequences (Stage 5). Teachers were concerned about supporting group work effectively as well as how they would need to change their style of delivering content. Stages 6 and 7 did not appear in the initial concerns expressed.

Evaluating CBAM in relation to planning professional development for new classroom spaces

CBAM proved useful as a guide to the academic advisory team to help consider a range of teacher attitudes to new developments, and to acknowledge that individuals may have very different concerns, and that these could change over time. Identifying the kinds of questions, based on the stages of concern (see Table 2, column 3), that teachers might ask coming into new learning spaces seems an excellent starting point for creating professional development experiences and appropriate resource material. Not only does the CBAM encourage broader provision of PD and resources, but it also situates the knowledge from the vantage of the teacher rather than a more usual 'what the user should know about this space' perspective. Concerns were similar whether teachers were working in new spaces or simply developing an awareness of the learning space initiative, and related generally to Stages 1-5 in the CBAM. Using the model helped us to identify gaps in our provision of resources and encouraged us to consider how we could provide for further teacher support around the final stages of concern - collaboration and refocusing.

Moving into a new space makes complex demands on teachers. In using new spaces, it is important to work with teachers on identifying their beliefs about teaching and learning as Ertmer and Ottenbreit-Leftwich (2010), and Steel and Andrews (2012) suggest. Existing understandings of pedagogy underpin each of the different types of concern identified in the model: self, task and impact. While our teacher users were confident about their ability to teach in new spaces, being more explicit as to how particular technology tools might support their pedagogical priorities could have reduced some of their general anxiety around technology.

Contextual factors are also integral to implementation of broad-scale changes, and Kwok (2014) suggests that the CBAM does not entirely account for all of teachers' concerns about the adoption of an innovation. Although initially, teachers' concerns appeared to be largely around technology, informal discussions and feedback suggested that over time and with working in the space, teachers' concerns were not just about using new tools, but related to how to translate practice that worked for them and their students in one environment into different learning spaces, dealing with the affordances and constraints of physical space and technology in relation to supporting effective teaching and learning. The Pedagogy-Space-Technology Design and Evaluation framework (Radcliffe, 2009) acknowledges the inter-relationships between these three areas in designing and evaluating the effectiveness of new learning spaces. Teachers' concerns at our institution did indeed relate to different aspects of space and technology, but concerns about pedagogy were also crucial to the way teachers used new spaces. The table below demonstrates how the stages from the CBAM could be expanded to include pedagogy, space and technology, with suggested questions that signify possible teacher concerns.

Table 4 Questions that teachers might ask based on concerns about pedagogy, space and technology

Concerns-Based Adoption Model level: Professional development focus	Pedagogy	Space	Technology
0.Unconcerned: Raising general awareness	What kinds of learning might occur in this space?	How does the layout of this space affect what I usually do?	What do these new technologies actually do?
1. Informational: Providing information	What do I need to know to teach in this space?	What functional affordances/constraints do I need to be aware of – lighting, aircon, sound, flexible furniture? Do I need to use the microphone?	How does the teacher CoW work? What PD or resources are available to support my learning about technology?
2. Personal: Establishing relationships and support	How does this space work for my existing way of teaching? Are there aspects of my teaching that won't work in here? Who can I talk to about teaching in this space? How much time do I need to give to planning in the first semester?	How much do I want to change the layout? Do I need to use the microphone?	What are my expectations of student technology use in class? Where can I get help if technology fails in the class?
3. Management: Demonstrating procedures and establishing routines	On what basis do I organise groups? Will students self-select where they sit? What are good ways of communicating with students in this space?	What routines around the space do I need to establish? How do I manage groups in this space? How do I account for student diversity e.g., in relation to breakout spaces? Do students need to use the microphones?	What routines around technology use do I need to establish?
4. Consequence: Clarifying impact on students and developing effective teaching techniques	What collaborative activities would support student learning? What is the best way to ensure course content is covered? What do students need to know about their learning in this space? How do students feel about learning in this space?	Am I using the whiteboards to enhance learning and teaching?	Is technology enhancing pedagogy in this space? Could I use the CoWs more effectively?
	How does this space relate to student learning outside the classroom?		
5. Collaboration: Disseminating ideas and working collaboratively with others	How can we share the workload of preparing and facilitating the class? How can I share what I've learned with other teachers?	How do we work as a team (e.g., three teachers) moving around this space?	Who is the best person in the team to manage technological questions/problems?
6. Refocusing on new developments	Are there further ways I could support my students and their collaborative learning?	Are there further ways I could modify the layout to suit my students and their learning?	Are there further ways I could use the technology to suit my students and their learning?

For academic advisors supporting teacher users, Table 4 offers a useful overview to ensure that our ongoing provision of professional development and resources for teacher users of new space identifies as wide a range of potential teachers' concerns as possible.

Conclusion

In conclusion, new spaces may be deliberately designed to encourage active learning and (as in our institution) collaborative learning to occur. However, teachers' uptake of the possibilities offered may depend on their individual concerns, and addressing these is crucial to successful implementation. We found the Concerns-Based Adoption Model a useful starting point to consider our provision of resource material and experiential teacher learning. However, the model could be extended to account for aspects in relation to pedagogy, space *and* technology.

Biography

Karen Haines is an academic advisor at Unitec, Auckland, New Zealand, working with staff on curriculum development with a focus on technology integration.

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