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Successful team-based development of an online course with an external partner: An analysis of the perspectives of academics

Sharon Croxford
La Trobe University, s.croxford@latrobe.edu.au

Colleen Thomas
La Trobe University, colleen.thomas@latrobe.edu.au

Deanna Horvath
La Trobe University, deanna.horvath@latrobe.edu.au

Melissa Buultjens
La Trobe University, m.buultjens@latrobe.edu.au

Emma Stirling
La Trobe University, e.stirling@latrobe.edu.au

See next page for additional authors

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Abstract
Course and subject development teams are increasingly seen in the tertiary online teaching environment and they face a unique set of challenges. The purpose of this study was to synthesise and share learnings of 12 academics involved in the development of subjects with an external partner for a new multidisciplinary online health science course at an Australian university, in order to improve ongoing development within the course and inform new course development. In this case study, thematic analysis of focus group discussions and qualitative survey data identified five key themes related to the development process: time management, setting expectations, communication, the development team, and ownership. Barriers to productive subject development included unrealistic timelines, unclear lines of communication, unmet or unrealistic expectations and lack of recognition of team members' expertise, and lack of support for genuine collaboration. Team-based development of an online course has the potential to be a rewarding experience for academics. In order for the benefits to be realised, approaches to development underpinned by a community-centred framework, observing core values such as collaboration, shared sense of purpose and expectations, would address a number of the issues identified in this study.

Keywords
collaborative online subject/course (individual unit of study) development, subject/course development teams, external education business partner, institutional support/resourcing, expectations of learning design process/platform

Cover Page Footnote
Note that in this paper, "subject" refers to the individual unit of study and course to the larger (degree) qualification. "Content" refers generally to any material within the subject while "content asset" refers to individual components produced during subject development e.g. video, audio, interactive activity. "Subject design" refers to the process of developing a framework for the subject incorporating development of content assets constructively aligned to the curriculum.

Authors
Sharon Croxford, Colleen Thomas, Deanna Horvath, Melissa Buultjens, Emma Stirling, Amy Larsen, Tania Roman Stasis, Jessica Radcliffe, Phil Buultjens, Stuart McDonald, and Adrienne Forsyth

Introduction

Undergraduate online courses are increasingly common (Latif et al. 2016), and as a greater range of digital technologies becomes even more widely available, our domestic and international students expect a high quality online educational infrastructure to support their university studies. High quality online learning environments provide students with a diverse range of opportunities to interact and engage with knowledge, learning resources, teachers and peers. Online interactions are dynamic and allow students to learn at any time, any place and any pace. There has been significant growth in the number of online higher education offerings in recent years, with the Australian market recording a 58 per cent increase in students undertaking external or multi-modal study between 2009 and 2014 (ABS 2014).

Institutional factors clearly dominate in the decision to convert a face-to-face course to an online format (Kampov-Polevoi 2010). The market is becoming highly competitive as more universities move into this sector, and few universities can afford to ignore the potential of online and blended learning design to transform the way their staff teach and how their students learn. Motivations for expanding the course delivery to online format include making courses more accessible to more students, maintaining and/or increasing share of the higher education market and developing expertise in an education model deemed to be increasingly important for tertiary institutions of the future. However, these "top-down" initiatives often result in academics needing to develop learning materials and new skills on top of their existing workloads (Latif et al. 2016).

To date there are a limited number of published studies reporting academic staff perspectives on the process of course conversion from face-to-face to online format (Kampov-Polevoi 2010, Xu & Morris 2007). Undoubtedly, successful transition from traditional face-to-face to online teaching is heavily dependent on the level of institutional support, since online courses call for different pedagogical strategies for engaging students compared to traditional classroom environments. Associated with this is the underlying assumption of equivalence between the different versions (traditional face-to-face or blended vs. online-only delivery mode) in terms of preparation time and associated workload cost by academic staff (Kampov-Polevoi 2010).

Among the several proposed theories of online teaching and learning, community-centred theory offers a perspective from which to view and assess the team-based development of an online course. Collaboration, creation of new knowledge (Anderson 2008), a shared sense of purpose, trust, commitment and expectation (Wilson 1997) underpin a community-centred approach. A natural extension of this collegial approach to development of any subject or course would involve transparent processes, clarity of purpose, expectations and ownership, and unambiguous communication.

The literature shows that academic staff consider collaborative online course development a valuable learning experience, and an opportunity to develop new teaching strategies; in particular adapting course content for different instructional modes (Kampov-Polevoi 2010, White 2000, Xu & Morris 2007). This suggests that elements within the community-centred approach are preferred by academics. Team collaboration has been shown to be essential for the successful development of online courses, with shared values of the team members identified as a key enabler (Hixon 2008, Kang 2001, Ellis & Phelps 2000). Distinct from the academic cultural tradition with teaching staff having substantial autonomy in course development, the team (project-based) model of teaching has been increasingly used in online course development in the last two decades (Alvarez et al. 2005, Shephard 2004, Whale et al. 2014). Online course development teams bring together the experience of a project manager, academic lecturing staff and web instructional designers with expertise in

production of high quality multimedia and interactive resources (Outlaw & Rice 2015). However, it is not uncommon to have a mix of less-experienced instructors and academic staff (Xu & Morris 2007). Bringing together selected members of staff from the university system and an external commercial education partner could be expected to add an extra layer of complexity to successful communication in the team model.

Collectively, previous exploratory studies have detailed the workflow of the collaborative process, presented challenges and issues of the process and responsibilities of the team members (Alvarez et al. 2005, Hixon 2008, Kang 2001, Outlaw & Rice 2015, Shephard 2004, Xu & Morris 2007). Here, we report on a relatively new course development model – online course development with an external commercial education partner. Uniquely, the course was developed using the external partner's own learning management system and technical support. Creating content for a third-party learning management system was new practice for the university and academics involved. Sharing this experience through this illustrative practical case study is an important contribution to the literature. Also, uniquely, this course involved several different disciplines across multiple schools within the university, adding complexity to the development but also to the subsequent learnings from the process.

Aim and objectives

The aim of this study was to examine academics' experiences of the subject development process with an external partner. Specifically we sought to identify:

1. important variables and constructs to successfully facilitate the development of online courses in conjunction with an external partner,
2. pedagogical and technical challenges that academics face in preparing and delivering online subjects with an external partner, and
3. key lessons learned and recommendations for future implementation.

Method

This study took place in an Australian university as part of an evaluation of a new teaching model: the online delivery of an undergraduate program with an external education partner. To better comprehend the process of online subject development in conjunction with an external partner, a two-phase qualitative approach was undertaken to understand academics' experiences of the subject development process.

Creation of high quality and innovative online learning experiences, provision of equitable and effective learning opportunities for students in diverse locations, and fostering of productive internal and external partnerships were drivers in the university's decision to support the development of a fully online degree with an external partner. The three-year online undergraduate multidisciplinary health science course was a new course in the online environment; however, it was based on an existing face-to-face course at the university. At the time of this analysis, the course consisted of 24 subjects, of which 21 were core and three were elective.

The external education partner is a recognised expert in the provision of online higher education. This was the first course from this university to be developed in partnership with the external education partner.

Participants

Participants in this study were recruited using a purposive sampling method. By definition, purposeful sampling is where the researcher specifically seeks participants who meet a set criteria (Carpenter & Suto 2008). All university academic staff members who were involved in subject and content development between mid-2015 to mid-2016 for the new online course were invited to participate. As all participants were involved in subject design, reflexivity was an important consideration. Participants were aware of their biases and addressed these through considered responses to questions.

There were two phases to this study: (1) face-to-face focus group discussions and (2) an online survey. Participants were informed about the purpose, processes and time required to complete both phases of the study. Participants confirmed that they understood the requirements and provided informed consent. A total number of seven academics (out of a possible 16) participated in the focus group discussions and 12 completed the online survey. Participant demographic characteristics, including the number of years of tertiary teaching experience, are detailed in Table 1.

Table 1: Participant demographics

Academic position	Number of years teaching in higher education	Number of years teaching face-to-face	Number of years teaching blended	Number of years teaching fully online	Number of fully online subjects taught	Number of fully online subjects developed	Participated in focus group	Completed online survey
Senior lecturer	6	6	4	2	2	2	X	X
Lecturer	8	8	1	1	1	1		X
Senior lecturer	10	10	5	3	3	3		X
Senior lecturer	3	3	3	1	1	1	X	X
Senior lecturer	18	18	4	1	2	2	X	X
Lecturer	10	10	5	2	1	1	X	X
Lecturer	13	13	4	3	1	1	X	X
Associate lecturer	11	11	3	3	2	2	X	X
Associate lecturer	6	6	3	3	2	2		X
Lecturer	13	13	5	2	2	2	X	X
Lecturer	13	13	3	1	2	2		X
Lecturer	7	7	4	1	2	2		X

X indicates completed study component (focus group and/or online survey)

Study design

A qualitative research design was used to achieve the objectives of the study. This approach allowed for an in-depth exploration of the topic, and for collection, collation and analysis of perspectives across the participant group.

Data collection and analysis

In the first phase of this analysis, focus group discussions with the academics enabled a broad examination of the subject development process to understand the requirements of developing online subjects with an external partner. Challenges and benefits were discussed, any training received by academics recorded, and perceived levels of control over the process also explored. Focus group questions included:

- What were your expectations about subject development with an external partner?
- Were these expectations met? How did your experience differ from your expectations?
- What were some of the challenges you faced in developing your subject with an external partner?
- Were you able to overcome any of these challenges? How?
- What were some of the benefits of working with an external partner?
- What will you do differently if developing an online subject with an external partner again?
- What aspects of the subject development process do you plan to use again if developing an online subject with an external partner?
- Is there anything else that you would like to add about your experience developing a new online subject with an external partner?

With consent, focus groups were audio-recorded and transcribed verbatim. Once transcribed, the data was analysed and categorised using thematic analysis. Transcriptions and preliminary data analysis were undertaken simultaneously to check for emerging and recurring themes. Three researchers independently examined each transcript to identify concepts and constructs apparent in the data. Meaning in each sentence or paragraph was given descriptive codes. Coding was a method whereby words or statements pertaining to the study objectives were extracted and similar responses identified using the same code. Following this, the researchers collectively discussed their interpretations and further refined the codes and emerging themes. Data was gathered to include the perspectives of all teaching staff, within nine months of staff finishing their subject development, thus reducing recall bias. To ensure interpretative accuracy, cross-checking of codes and themes was undertaken among the entire research team. Additionally, researchers were able to validate meaning, which allowed the researchers to clarify and prevent potential inquirer bias.

In the second phase of data collection, a short-answer survey was constructed from identified themes and distributed via Qualtrics research software (Barnhoorn et al. 2015). The survey aimed to clarify themes, barriers and facilitators and gather specific examples from participants' experiences. No identifiable data was collected from participants. Questions included:

- Are there any points that you think need further clarification? Please list.
- Please describe barriers you perceive are related to this theme.
- Please describe facilitators you believe are related to this theme.
- If you have any additional points to add to this theme please add here.
- Please provide both positive and negative examples from your experience in developing your subject/s related to this theme (where possible).

Following completion of the online survey, preliminary themes were expanded accordingly and subthemes identified. Comments provided by participants in the online survey have been synthesised and are included throughout this paper.

Ethics

The protocol for this study was approved by the College of Science, Health and Engineering Human Ethics Sub-Committee, La Trobe University, ID S16-227.

Findings

Five key themes were identified and are interpreted below (in no particular order). Issues related to each of these themes were consistently identified by the academics in relation to subject development, and had a large impact on the success of the development process. These themes and related subthemes are presented below as are facilitators and barriers for each theme. Following interpretation of the themes, successes of the course described in this paper are discussed.

Themes

Key themes that emerged from the focus group discussions were:

1. Time management – clarity and consensus regarding time requirements.
2. Setting expectations – transparent, shared and agreed engagement in the process.
3. Communication – commitment to mode and act of sharing information and experience.
4. The development team – facilitation of knowledgeable, skilled team members.
5. Ownership – enabling and empowering academic ownership of subjects.

Time management

Time management emerged as a critical factor in online subject development. As McGill et al. (2014) had previously found in relation to online development, "when teachers and developers felt that they had sufficient time to devote to the initiative, when sufficient training was available to teachers, and when support was a recognised part of the developer's job, the initiative was more likely to [be successful]". During the development of an online course, facilitators for success identified by participants included dedicated, passionate academic staff, experienced learning designers, ability to share experiences of the development process, and access to experienced content asset producers e.g. video developers. Barriers included lack of understanding of activities involved and time required by all parties, unrealistic and unclear timelines, other academic commitments e.g. on-campus teaching and research, and inconsistent and/or inadequate staffing. A community-centred approach with a shared sense of purpose, trust and commitment, along with greater transparency, may have mitigated some of these issues.

The subthemes within the broader theme of time management that were consistently identified by the teaching staff provide further insight into the barriers identified above and are discussed below.

Realistic master project timelines

To create an environment conducive to efficient course delivery, it was deemed vital for both parties to establish realistic timelines at the outset that included action-orientated goals and effective communication of the development schedule. In some instances, however, the external partner appeared to lack appropriate briefing by the university of academic staffing availabilities, workloads during the project, plus peak periods in the university calendar and, therefore, competing demands. In other cases, learning designers were assigned as project leads by the external partner despite lacking appropriate knowledge of achievable timelines. The participants also reported a lack of investment in a formal process to share experiences and best practices across academic subject developers, which would have aided the establishment of realistic timelines and better managed expectations by all parties.

Overall, the actual time required for development of the first eight new online subjects in conjunction with an external partner was found to be considerably longer than the time typically allocated by the university for new subject development (academic time ranged from 436 to 552 hours per subject in this course: more than three times the nominally allotted 150 hours). There was an expectation that the transition from face-to-face to online was not going to require a large investment of time, so academics and university staff with other responsibilities related to the course were unprepared for this substantial time commitment. Of note, subjects that were developed later in the course benefitted from a more realistic expectation of the time required and improved allocation of staff resources, due to better communication and information sharing.

> *One academic found that after developing an early subject in the course in a very short time period, and thus understanding the requirements of the complete process, requests to senior managers at university and external partner level for an earlier commencement for the next subject (i.e. increasing the development time) were not met. This left the team with a 12-week development schedule to build a very large subject from fully face-to-face with practicals/tutorials and lectures to fully online.*
>
> *In another subject, the academic found that with a 6-month development schedule lack of time was not an issue.*

Inflexible timelines

During the subject development phase, a standardised model appeared to be applied to establishing master timelines with a lack of "fine tuning" to reflect subjects that required more extensive development than others. An example of this was applying the same master timeline to develop a fully face-to-face subject with a high practical component to the new online platform, as was applied to transfer an existing online subject or one with an existing blended component. At times, academics were faced with considerable workloads to meet inflexible project critical dates and uphold quality standards, as insufficient lead times had been established. This was particularly noted for subjects requiring extensive development, or subjects that required application of newly acquired skills and technology during development, such as animation and video production.

> *The same development time was offered regardless of whether the subjects were transitioning to online from a fully face-to-face, blended or online subject. Also, no consideration for subject complexity on timelines for projects. Creating fully online lab tasks takes much longer than developing material that is not practical in nature.*
>
> *Despite the long duration of the development phase in [one subject] (6 months), the timelines provided for video content production were inadequate.*

Timelines for sub-activities

Unrealistic allowance for time to completion of sub-activities within the master timeline was the third subtheme to become apparent. An example of this was the scheduling of a practical video production into the master timeline, without any time allowance for associated sub-activity including script development, rehearsal, equipment and materials preparation, as well as location set up. In other cases, academics were completing new tasks for the first time and could not draw on prior knowledge to guide or set typical timeframes, which often resulted in significant underestimation of necessary inputs. Academics consistently found that there was insufficient time devoted to the end-stage quality assurance processes which often had extreme time pressures due to accumulative project delays from both parties, and complicated final steps involving multiple departments, auditors and communication points within the external partner environment.

> *The actual time required to produce video content was not fully understood and timelines provided were impractical, particularly when academics had extensive teaching/research workloads outside of this development work.*
>
> *The time required for multiple rounds of quality assurance was lengthy and made far more complicated and paperwork-intensive than it needed to be. Some of this time could have been saved through giving academics editing rights to documents and the learning management system.*
>
> *Inefficient quality assurance processes increased stress and frustration at having to spend a large amount of time with the process, which once editing access was granted could easily be fixed on the spot by the academic.*

Management of delays

A lack of flexibility, fluidity and adaptability within timelines was also reported by some academics with little regard for contingency planning if there were delays from either party. Unanticipated delays in many cases related to wait times for production of high quality assets and quality analysis of materials developed. In some cases, the external partner had prearranged additional contractors, such as a video production crew, well in advance, which locked in critical dates. In other cases, academics felt tied to working in a pre-set methodical or chronological order established by the external partner, not necessarily in priority order, which was out of step with more familiar polychronic project planning approaches. This prevented some academics capitalising on quieter periods in workloads if there were timeline delays.

Planning, tracking and accountability tools and processes

A range of tools and techniques were introduced by the external partner to assist with time and project management including Gantt charts, action lists, shared cloud file storage, and project planning meetings. The academics reported a lack of consistency with the application of these tools between learning designers, and the use of personal approaches as opposed to shared, co-ordinated and structured procedures. Some academics reported that the project management tools were far too extensive and superfluous, whereas others experienced a laissez-faire environment. This finding may be partly attributable to varying levels of seniority, curriculum development experience and preferred project management styles within academics.

Key lessons learned and recommendations for the future:

1. Establish budgetary provisions at the time of partnership contractual agreement to include 500 hours of academic time for development of new fully online subjects.
2. Draw on analysis of all available time input data and use published literature to inform and set realistic and detailed timelines in all other instances (i.e. existing subject transformation).
3. Include contingency plans and accountability for delays by either party, as an agreement between the external partner and the university, for all subject development.
4. Allocate staff and resources to commence subject development at least six months ahead of subject commencement.

Setting expectations

Desire for shared expectations of the academics, external partners, learning design process and learning platform was clearly identified as a major theme. Several facilitators for successful online course development related to setting expectations were identified and included subject design and mapping sessions with education designers, buy-in from whole team within discipline for support and completion of work, and allocation of one learning designer dedicated to each subject. In contrast, numerous barriers were recognised by the academic development team. These barriers were related to subject design (lack of best practice examples for subject design linked to lack of overall goals for subject design in the online space, setting unrealistic expectations regarding possibilities for design and content assets, reliance on a single format (e.g. video for developing content assets), academic experience and availability (lack of recognition of academics' teaching experience and understanding of student learning experience, variable online teaching experience e.g. lack of experience for some academics, and lack of acknowledgement of academics' availability), budget (lack of transparency regarding development budget), inconsistent approaches within education and production team, and finally lack of agreement on definition of "flexible" delivery and the impact on student experience. As identified in time management above, agreeing an approach at the outset, where team members have shared and clear expectations, would likely have minimised these barriers.

Analysis of further data collected from the online survey identified several subthemes which are discussed below.

Consultation during the design process

A consistent message to emerge from the analysis was the lack of consultation with academics regarding design of subjects in the online space. While meetings between key staff involved in the design process were held, there was a general sense that these were directed by the external partner with minimal opportunity for input from academics. Lack of acknowledgement of the academics' experience and understanding of online teaching/learning was identified by several academics, although it was also recognised that experience in online teaching/learning within the academic group varied greatly.

> *Many academics perceived a clear message that the only option for the design was that proposed by external partner.*
>
> *For many of the academics involved, this was the first time they had developed a subject with an external partner, and for some the first time working in a wholly online space and this limited their vision of what was possible.*

Realistic expectations

Initial subject design meetings were regarded as both creative and positive, yet proved mostly aspirational rather than realistic. The external partner worked with academics with the intention to identify a number of potential design elements and learning materials and activities that were exciting and innovative. Some positives related to the design process identified by academics included having one learning designer dedicated to each subject, and viewing the initial subject design meetings as an opportunity to reflect on their subject and clearly map learning outcomes with learning and assessment activities. However, a lack of understanding of what was achievable became apparent with academics reporting they had a number of assumptions and unrealistic expectations about the subject design process and the role and capabilities of the external partner.

> *In a number of subjects, several key assets that were identified as important for development during the initial design processes were not subsequently developed, resulting in a less interactive student experience.*

> *It was great in the initial meeting to get a clear map of the subject and link all the activities (and content assets) and assessments to the learning outcomes in a very clear way. These subject maps are really useful when trying to get a big picture view. Some of these elements have since been used when inducting new facilitators to the subject.*

Expertise in subject design

A third thread was associated with the capabilities of the external partner. Participants identified, a lack of "best practice" for designing and delivering learning materials and activities, as well as subject platform designs that were difficult to navigate and unwieldy to manage, and a lack of consistent information from teams within the external partner and approaches to design and delivery of materials.

> *In one subject, mastery quizzes were proposed as an assessment method, yet when academics asked the external partner to provide examples of how these were designed and worked within the learning platform, it became clear that these had not been tested or used.*

> *Many of the subjects were science-based with large practical components and the external partner had little experience or samples of best practice in translating these practical components into online formats.*

> *The learning management system of one early subject in the course development rollout contained multiple forums with no closing dates or central forum management page. This meant students were posing questions, often unrelated to the forum topic, at any time within the subject delivery. The academics needed to check up to fifteen forums each day.*

Budget and resourcing

A fourth and strong thread to emerge was the lack of transparency regarding resources for development of content assets. Academics' views regarding priorities for functional or useful learning assets conflicted at times with the external partner. Priority was given to production of video content, leaving insufficient funds for development of other assets that would have arguably enriched the student learning experience.

> *In one subject, budget was allocated to make-up and hair-styling prior to filming which was considered unnecessary and an extravagance by the academics.*

Key lessons learned and recommendations for the future:

1. Declare capabilities, experiences and expectations; agree on a vision for the subject and then clearly define roles and responsibilities of each member of the subject development team.
2. Identify limitations impacting on subject development (resources, staff availability, capability of the learning platform, and time required to develop learning materials and activities) at the beginning of the development process and communicate these clearly to all parties involved.
3. Prioritise elements of the learning design at the outset of the development process to ensure that the most relevant and preferred materials can be created within the time and resources available.

Communication

Effective and efficient communication in the development of online education is imperative to successful and timely outcomes of the delivery. Clarke (1999) discusses some of the key factors involved in project management success, highlighting the importance of communication throughout the project. The complexity of the present online course development, with a central university team, the external partner and subject matter experts (usually the academic and can be read interchangeably in this paper) all playing distinct roles in the course and subject development, created particular challenges for communication.

Academics identified elements of good communication during the subject design process that were both facilitators and barriers. Continuity in the design team was a facilitator while changes to design team staff and/or project manager with poor transition/handover to new staff were a barrier. This suggests that agreeing to processes or agreeing to expectations regarding how changes in the design team are managed would moderate potential obstacles and improve communication. Multiple other facilitators related to communication were identified and included experienced facilitators in the design team (with the ability to clearly outline what will be required, especially if the subject matter expert was new to online subject design), use of project charting, face-to-face meetings alongside online, email and phone communication, and efficient quality assurance processes. Within the academic team, adequate numbers of dedicated staff along with opportunities for sharing experiences within the team, especially to identify useful tips for ongoing subject development, were identified as communication enablers. Further facilitators included clear and timely communication related to subject development including timelines for upcoming new subject development, updates from the project team regarding changes in timelines, expectations of each of the project team including lists of responsibilities, and "go-to" people. Barriers to the successful development of subjects related to communication included multiple points of communication, issues related to lack of awareness/understanding of academic staff time commitments outside of new development, and lack of transparency regarding hours required for development. With exploration of each of the themes, it appears increasingly apparent that the first steps in the subject development process

requires identification of the development team and then agreement of a shared sense of purpose, commitment and expectations prior to commencing subject design.

Within the broader theme of communication, more specific issues consistently raised by participants in this study related to communication processes and volume of communication as discussed below.

Communication processes

Lack of agreed formal processes for who and what was communicated, which in turn related to a lack of clarity around roles and responsibilities regarding course and subject administration matters was identified as a subtheme of the broader communication theme. Prior to and throughout the subject development process multiple communication points and processes arose, frequently adding duplication and confusion. Communication at times was not clear, with academics' preference for face-to-face meetings. Decisions were made that affected the subject development process that were not effectively communicated to the course and subject development team, and in particular the relevant academics. Clear and timely communication of changes, identification of who handles which points, and keys points of contact were lacking.

> *Email and telephone were modes of communication that often led to information being lost in translation on important subject development matters.*
>
> *When communication was "clear and quick" there were no perceived issues with communication.*

Volume of communication

A further general concern was the inconsistent use and variety of methods for communicating and sharing documents (Google Drive, Dropbox, Office360, email, printed hard copy documents) along with equitable access for all of the development team. Others have recommended the use of online modules as a central point of contact with designers and the education team, and also as a place to collaborate and share (Kukulska-Hulme 2011). Coupled with the multiple modes of communication was the volume of communication and multiple formats for the planning and development of different aspects of subjects.

> *The use of platforms for synchronous sharing and editing, when working and when all documents are placed in the one place, was helpful.*
>
> *In some subjects, there was too much ineffective communication with one subject overloaded with Gantt charts.*

Key lessons learned and recommendations for the future:

1. Agree on a mode of communication and develop a communication schedule at the outset of the development process.
2. Identify key areas of shared knowledge to communicate such as budgets and timelines, and ensure that all parties have access to this information as early as possible.
3. Develop an online space for all members of the subject development team to collaborate and enable effective and efficient communication throughout the subject development phase.

The development team

The development of this course involved the collaboration of a large number of individuals each with a specialised role and function, reflecting the trend identified in the literature above (Alvarez et al. 2005; Shephard 2004; Whale et al. 2014). Contributing academics were selected based on their subject matter expertise; in many cases they were also the subject coordinator of an equivalent "on campus" face-to-face/blended/online delivery mode subject. Within the university, academics liaised with the education team around subject approvals and requirements, with the library staff around learning resources, and with a range of student support and administrative services to ensure that appropriate messages were being communicated to students. The university's learning and teaching unit acted as the main liaison between the university and the external partner. There were a number of roles and services of the external partner involved in subject development, most notably learning designers, content producers, technical support team and student support team.

Facilitators identified for a successful development team include staff willingness to upskill in the use of learning management systems and related technology, expertise in subject matter, learning design and technology, knowledge of subject content and university processes, and development of individuals and teams over time to build expertise within the team. Barriers included turnover of participating staff, limited knowledge of subject matter, learning design or technology, lack of university teaching coordination experience (and thus lack of insight into subject requirements), isolation of development staff, lack of an active project manager to provide on overall consistent vision for the course, and greater demand for experienced staff than for available expertise.

Allocation of roles

Within the development team theme, one of the key subthemes identified by participants in this study was that when there was large team involvement, it was difficult at times to know who was responsible for the various components in the design and implementation phase.

> *Allocation of roles was unclear at times and academics expressed that they found themselves taking on roles that they believed the external partner was responsible for, such as sourcing images.*

Online designers scope of expertise

An additional important subtheme highlighted the importance and value of having expert online learning designers as part of the development team. Academics reported that the learning designers' knowledge of online learning and their innovative ideas on how to teach in the online space greatly benefitted the subject design process. In some cases, a learning designer was involved in the development of sequential subjects, and this was very valuable as they developed subject knowledge and had great insight into how subjects could build on previous learning and provide a consistent learning experience. Individual learning designers were found to bring a range of different skills and experiences to the subject development process. However, academics also reported that where different learning designers were involved, there was a lack of consistency between subjects that may impact on students' overall learning experience.

> *Having an external partner gave the development structure and provided fresh eyes for the development process, and this was viewed as an advantage over keeping the development process in house.*
> *The external learning designer had the expertise in online learning and teaching necessary to ensure that the appropriate resources and formats were used for all components of the subject.*

Academics also felt that some learning designers brought great expertise in online learning design, but lacked an understanding of subject content, and often had limited insight into appropriate teaching and learning strategies for the relevant student cohort. Academics in the initial subjects of the online course roll-out felt compelled to follow the recommendations of learning designers rather than rely on their personal experience and insights into learning design, and were dissatisfied with the experience and developed product as a result. In subjects where the learning designers felt they had a degree of content knowledge, they modified content based on their perceived understanding of the subject matter to employ more engaging language, and inadvertently changed the meaning across a number of scripts, assets and assessment tasks.

Technical expertise and support

Many of the academics felt that they would have valued more support from the learning designers and technical support teams to develop interactive learning activities. They reported barriers to accessing expertise in this space, which led in many cases to the development of more traditional learning activities such as readings, videos and workbooks. In other instances, academic staff spent time up-skilling to be able to develop more innovative online activities themselves.

> *Some of the ideas promised were too pie in the sky and could not be delivered in the production space.*

Technical support and capability of the learning management system were often reported as limiting factors in subject design and development. In some cases, creative ideas were developed by academics and learning designers but could not be implemented due to a lack of technical capacity or expertise. In other instances, the content production team lacked sufficient subject matter expertise to develop requested assets.

> *There was varied expertise in the external partner team that caused issues in development. For example, major errors occurred when they attempted to reproduce and to create chemistry images.*

> *Some academics found that the external partner team setting up the learning management system struggled to follow instructions for programming quizzes and forums and academics needed to explain their requirements several times.*

Sharing expertise and learning

As course development progressed, new academics involved in subject development found it particularly helpful to learn from academics that had been teaching into the new course. The academics with more experience teaching in the fully online space were able to communicate challenges about teaching in this environment, and were able to provide direction on aspects of subject design such as the use of forums, synchronous sessions and various assessment methods, and to describe the unique learning needs of this cohort of students. This was found to be so valuable that, as a formal process, an experienced online teaching academic was included as part of the subject development team for further new subjects developed in the course, a practice consistent with other online course development (Xu & Morris 2007) .

Overall, academics felt that subject development worked best with small teams consisting of subject matter experts as well as online learning and teaching experts. This is important to encompass the range of relevant expertise, encourage greater generation of creative ideas in learning design,

provide more accurate and higher-level quality review of content, and also to provide coverage in times of staff absence and ensure that subject development is not reliant on only one staff member. Creativity in learning design and teaching modalities is particularly important given the vast range of student learners with varying capabilities and learning needs (Mupinga et al. 2006). The planned subject coordinator for delivery of the subject should also be considered as part of the development team. This will help them to have input into the subject design and take ownership of the subject.

Key lessons learned and recommendations for the future:

1. Ensure the development team is familiar with design elements and content of prerequisite subjects.
2. Ascertain what technical expertise will be required to develop all planned learning activities and develop strategies to access this technical expertise in a timely manner.
3. Provide forums for open discussion between new academics involved in subject development and academics with more experience teaching in this space.

Ownership

Individual teaching staff approach subject design differently (Bennett et al. 2011), and often do not conceptualise their work in design terms (Bennett et al. 2017). For this online course, the learning designers guided academic staff through a number of interrelated steps to develop or redevelop subjects for online delivery. Initial scoping sessions allowed for the whole subject to be viewed within the context of the overall degree and then for mapping of each of the elements required to build a successful subject. Intended learning outcomes for the subject, and also for the degree and/or graduate, are situated at the foundation as a constant reminder of the purpose of the planning. Content and content assets are developed to enable the attainment of the intended learning outcomes and assessments to measure this. Organisation of content and assessment occurs concurrently with mapping the engagement and communication strategy between teachers and students. The development process is completed by embedding all of this within a learning management system. Quality assurance occurs at each step.

A key consideration when developing subjects with a partner external to the main teaching team is to ensure that the academic staff responsible for the subject still maintain a degree of ownership over the intended learning outcomes; content development; and its presentation, assessment, and modes of engagement and communication with students. This concurs with Ellis and Phelps (2000) who identified that staff ownership of both online subject materials and technology was critical in online subjects and courses.

Several enablers for facilitating academic ownership of the product were identified and included academics' willingness to upskill themselves in the new platform/technology, involvement of academic staff in the subject design process to increase investment and ownership of the subject, academics' willingness to increase their knowledge of third party and university processes, and their ability to access the learning resources/assets for use in their on-campus teaching. Barriers to academics feeling ownership over the subject design and content related to the use of the partner's learning management system and technologies. Academics felt limited training was provided in the use of the platform/technology, that multiple staff were involved in programming the learning management system content, communication with the learning management system team was indirect (through education designers), and they lacked of editing rights for the learning management system. Lack of ownership for academics was also related to lack of clarity around who was responsible for undertaking certain tasks in the design process, for understanding third party processes, and for knowing who to contact when they require assistance.

Further exploration of some of these points, identified as subthemes, follows. Commitment to a community-centred framework with its collaborative and shared approaches would see clarity around ownership, again minimising the challenges identified by academics.

Control of subject design/content assets

A consistent issue identified by academics in this study was that while academics acknowledged the expertise of learning designers with regards to the overarching approach to online subject design, they also identified feelings of frustration with the overall design of subjects and their lack of control during this process. Indeed, some academics, while deemed subject matter experts, and in many cases with extensive experience in delivery of the subjects involved in the online development, perceived a lack of value of their experience and contribution in the subject development process. There was a sense that subjects needed to conform to the external partner's ideas of structure and content and this could create tension between academics and learning designers that was counter-productive.

> *Lack of academic staff input into the subject design, especially around strategies to engage students and scaffold assessment tasks and other learning activities, resulted in staff feeling like they were required to stick to the third party "rules".*

An additional concern for academics was the lack of control over the decisions regarding which content assets were to be produced, and this has already been discussed in the "setting expectations" theme.

Editing rights

While it was thought that having the external education partner deliver the course content via their learning management system, and be responsible for amendments, would decrease academic workload, the reverse was actually true. If an update or amendment was required, a "job ticket" had to be raised by staff that were unfamiliar with the intricacies of the subject layout and thus a significant amount of effort was required to clearly explain the nature of the error and where it was found within subject content. Academic staff were unable to simply take action to rectify the error on the system themselves. This process also required academic staff to monitor all the tickets that had been raised, and often there was no notification of the timeframe in which the error would be fixed or notification of when the ticket had been resolved.

Over time, academics were granted additional access and editing rights and as a result were able to take greater ownership over their subjects. Subject coordinators with a greater sense of ownership of their subjects have been more motivated to make improvements to enhance student learning outcomes and experiences.

> *Lack of capacity for subject coordinators to manage their subject and limited editing rights in the learning management space led to a sense of lack of ownership and helplessness.*

> *Staff were offered minimal training in the external partner's learning management system, and were unable to contact the learning management system team directly for assistance as all communication was required to be through the e-designers.*

Key lesson learned and recommendations for the future:

1. Ensure that collaborative processes for subject development enable and empower academics to drive the process and perceive ownership of their subjects.

Measures of success

The course described in this paper completed roll-out in mid-2018. Many of the academics who participated in this study continued to be involved in the development of additional subjects and continue to be involved in the delivery of these subjects. Traditional measures of success for an online course would include successful delivery, high enrolments and student satisfaction, student progression and completions. Enrolments for individual subjects and the course have surpassed all expectations. In 2018 there were over 6,600 subject enrolments in the course placing it in the top five courses by enrolment in the partner's portfolio. The course consistently achieves high student satisfaction and student success when benchmarked against overall partner scores. Several of the subjects have been recognised formally as the partner's Top Performing Units by student satisfaction. In 2016 academic staff received a *La Trobe University Staff Award* related to the success of the course. The first graduates of the course are being accepted for post graduate dietetics study at several institutions around the country.

Conclusion

To the best of our knowledge, this is the first description in the education literature of the experience of online subject development in conjunction with an external partner. In particular, we reported the perspective of 12 academics involved in the early development of the course and identified key considerations for further subject development within this course, and for others contemplating similar activities.

In general, we suggest that before commencing with subject development, a number of factors should be considered, with many related to acknowledging and allowing adequate time for planning, not just of the subject content specifics, but of associated elements within the broader subject development process. A realistic approach to the time required for development of individual subjects, the time required to develop and ensure the quality of resources and content assets within subjects and then realistic timelines for completion of any work is critical to ensuring subjects are developed to a high quality for positive and productive student experiences, as well as for academic workload management.

The shared vision for the subject should be one of the first elements of subject development, and this should be discussed and proposed as soon as the development team is identified and in the initial planning phase.

Inventories of the proposed team capabilities, experiences, limitations and expectations should be considered prior to starting content development and will facilitate identification of any upskilling requirements for the development team, both academics and learning designers, identified as a positive component of the experience in this study. Further suggestions for success include clearly defining roles and responsibilities and establishing agreed and distinct communication processes. As part of the communication plan, a central, open-access online repository with consistent documentation and a way to share knowledge gained during the design and development process should be made available to all in the development team.

Lastly, but an overarching principle of the whole development process, is the acknowledgement that the process is collaborative and that academics need to retain tenure of the product, the developed subject. This requires ownership and direct involvement in the decision making about all aspects of the subjects and specifically content asset priority and production.

The development of an online subject within a development team has the potential to be a rewarding experience. Importantly, team "rules of engagement" should underpin the process where a community-centred approach guides individual involvement and drives mutually beneficial outcomes. Many of the barriers identified in this paper would be moderated through the early adoption of such a framework. For academics, the process can be an important professional development activity at the same time as meeting the requirements of teachers' daily work. It is hoped that the learning from this experience will inform others considering similar ventures.

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