TEACHER DESIGN TEAMS: BUILDING CAPACITY FOR LEARNER-CENTRED COURSE DEVELOPMENT

Linglingay P. McDermott
University of the Philippines Open University
linglingay.padolina-mcdermott@upou.edu.ph

ABSTRACT

Blended Learning is a popular means of introducing distance e-learning. Fostering learner-centred course design that includes a wide variety of learning activities, enable schools to utilise learning resources more efficiently while allowing students greater learning flexibility. Thus, there is now a need to train the teachers on how to design their courses for blended learning. This paper focuses on the design and development of a Blended Learning programme and the skills development of the teachers involved, using Teacher Design Teams. This paper explores the techniques and processes employed by a university in the Philippines to ensure that the blended learning courses are learner-centred, flexible and aligned with outcomes-based education goals. Instructional designers and educational technologists were employed to help the course developers/teachers design their courses. A quality assurance team was also put together for each course in order to ensure that all aspects of the course (content, instructional design, technology and language) are of the highest quality and consistent with the University's programmes. The blended learning modules show that the use of Teacher Design Teams can improve the quality of the course materials.

Keywords: *blended learning, teacher design teams, course development, e-learning*

INTRODUCTION

Blended Learning (BL), a mix of face-to-face learning and online learning, has been growing in popularity in universities as a means of introducing distance e-learning to students and teachers. It is also a way to promote innovative instructional approaches and accommodate various learning styles. According to Friesen (2012), "Blended learning" designates the range of possibilities presented by combining Internet and digital media with established classroom forms that require the physical co-presence of teachers and students" (p. 1).

The online sessions can be synchronous or asynchronous. It all depends on the teacher or the organization's policy to determine how much of the course's schedule will be face-to-face and how much will be online. By fostering learner-centred course designs that include a wide variety of learning activities (such as classroom instruction, virtual meetings, online books, mentoring, self-paced study, simulations and assessments), schools can more efficiently utilise learning resources while providing students a flexible learning environment. Under this approach, technical media is an integral part of instruction (Keegan, 1980).

The teacher is essential in creating this environment. It has been established that blended learning usually requires more preparation than face-to-face instruction for the teacher to re-design the course (Diaz & Brown, 2010). As a result, teachers need to have certain competencies to achieve the goal. Research at Penn State University (Diaz & Brown, 2010) has investigated such competencies, which include:

(1) Active learning;
(2) Course administration and leadership;
(3) Active teaching, teaching presence and responsiveness;
(4) Multimedia technology;
(5) Classroom decorum;
(6) Technological competency; and
(7) Policy enforcement.

In addition, redesigning, rewriting and rethinking the content of the course is a major area of competency needed in designing blended learning (Arinto, 2013). Taking into account all these competencies that teachers need to have in order to develop a course for blended learning, the task seems daunting. However, with a team of teachers, comprising members with expertise in different areas, the task can become less complicated and the goal can be achieved.

This paper focuses on a university in the Philippines that started a BL programme in 2011. The BL programme was created in response to requests from teachers and interested students for a more progressive method of teaching. It was also developed to attract foreign students. This paper aims to examine the processes taken on by the University when it started implementing a BL programme. The discussion will focus on the design and development of the BL programme and the skills development of the teachers involved, using Teacher Design Teams.

THE CASE FOR TEACHER DESIGN TEAMS AND BLENDED LEARNING

Literature has shown that effecting change in a teacher's way of teaching is difficult, to say the least. With the establishment of a new programme such as blended learning, there are many competencies that teachers must already have or must learn in order to design and teach a course online. Teaching in the 21st century is now a different scenario, requiring complex roles and skills of the teachers (Teräs and Herrington, 2014). In the Technological Pedagogical Content Knowledge (TPACK) framework of Mishra and Koehler (2006), the technological, content and pedagogical competencies of teachers must all be utilised in the design of technology-supported learning. TPACK research shows that teachers realise that the interactions among all three competencies, and not just one or the other, are important in designing technology-supported learning. The TPACK framework below shows the interaction and collaboration among the three competencies.
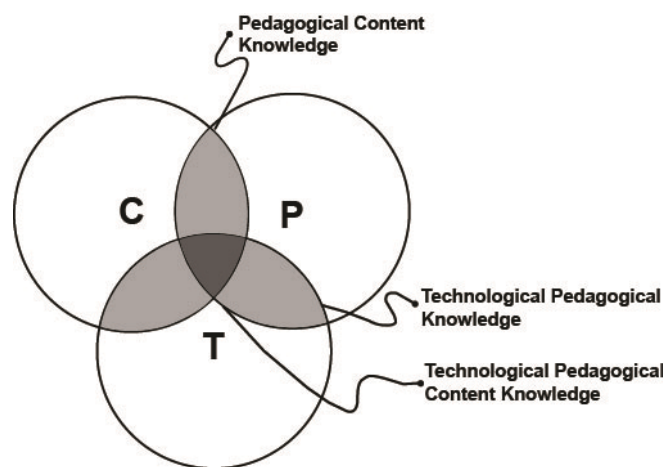

Figure 1: Pedagogical Technological Content Knowledge
(Mishra & Koehler, 2006, p.1025).

When we introduce technology into teaching, our instinct is to teach the technology skills alone without making changes to the content and pedagogy. In fact, we should not only be teaching technology skills but we must also show the teachers how technology, content and pedagogy intersect to form a cohesive knowledge core that will allow them to create scholarly blended learning course materials (Polly & Orrill, 2012). One way to go about this is by using Teacher Design Teams (TDTs) with members that are experts in or practitioners of each competency or field. The members of the TDTs can then teach the BL instructors and collaborate to create scholarly BL course materials.

TDT is a creative space that allows teachers and various pedagogy and technology experts to work together (Simmie, 2007).

> "The TDT concept provides teachers with a creative space to reconsider the teaching of their subject, the intellectual stimulus of working together and the challenge to move the thinking forward…Working with teachers in this way, empowering them to design, to learn and to change, develops not only the teaching of the subject but also the leadership capacity of the teachers themselves." (Simmie, 2007, p. 165 & 166)

Handelzalts (2009) adds that TDT is composed of "a group of at least two teachers, from the same or related subjects, working together on a regular basis, with the goal to (re)design and enact (a part of) their curriculum." (Handelzalts, 2009, p. 35)

These definitions emphasise the broad activities of TDTs as:
(1)   Instructional Design; and
(2)   Collaboration of several teachers of the same or related subjects.

Tondeur et al. (2012) has identified key themes in the development of TPACK in pre-service teachers which show that TDTs are significant in helping teachers develop technology-supported course materials. The key themes relevant to the study are:
(1)   Using teacher educators as role models;
(2)   Learning technology by design;
(3)   Collaborating with peers; and
(4)   Scaffolding authentic technology experiences.

TDTs encourage collaboration, which can spur reform where it would otherwise be slow. According to Levine and Marcus (2010), teacher collaborations increase teacher learning. This in turn can improve their teaching strategies and consequently, the learning of the students. Within the TDT, one of the main tasks is instructional design. The team "would bring course design and development process specialist knowledge in the design of a range of study materials for distance education" (Naidu, 2007).

Several schools in Asia have used TDTs or similar collaborative structures for professional development of teachers. For example, a Singapore high school used the lesson study method for its teacher development programme (Lawrence & Chong, 2010). The lesson study method, developed in Japan, is a systematic approach towards refining a single class lesson by having a small group of teachers design, teach, evaluate and revise the lesson collaboratively. These single class lessons are called "research lessons" (Cerbin & Kopp, 2006). The study identified six key pathways of a lesson study that may contribute to success in instructional development, as follows (Lawrence & Chong, 2010):
(1)   Enable the development of teachers' knowledge, perspectives and insights about instruction and subject content;
(2)   Enable increased awareness and knowledge of specific areas for improvement;
(3)   Enable the connection between daily practice and broader and longer-term goals for student learning;
(4)   Foster teachers' sense of efficacy;

(5)   Strengthen collegial networks to enable productive collective efforts; and
(6)   Reinforce school support to sustain teachers' instructional change.

These pathways can also be applied in similar collaborative structures such as TDTs.

In Taiwan, a study has been done to examine a collaborative professional development programme (CPD) among in-service and pre-service teachers (Liu, Tsai & Huang, 2015). Using TPACK constructs, the programme is designed to increase technology knowledge and pedagogy knowledge for in-service teachers (mentors), who are proficient in pedagogical knowledge (PK) but may not know how to integrate technology into the classroom. For pre-service teachers, who are proficient only in technological knowledge (TK), the goal is to increase TPACK skills and application. The method used by the CPD programme involves conducting teaching demonstrations using technology (with both the mentors and the pre-service teachers) and then encouraging participants to share their ideas on how to integrate technology into their teaching. The study shows that the participants have increased their skills in integrating TPACK skills and application, as a result of the CPD (Liu, Tsai & Huang, 2015).

In another example, one of the methods used by a university in Thailand to develop learner-centred education was a collaboratively developed curriculum with an emphasis on problem-based learning. The push to implement the new curriculum forced the teachers to change their methods to incorporate a more learner-centred approach (Hallinger & Lu, 2013).

These methods used by various educational institutes informed the TDT approach for the design and development of the BL programme focused on in this paper.

EFFECTING CHANGE IN THE TEACHER COURSE DESIGN

At the university in focus, capacity-building seminars for teachers were regularly held to generate interest and identify potential BL course developers. When teachers apply and receive approval to develop BL courses, they are given an orientation on what is expected of them. The teachers, who are now called course developers, are then given sample modules that they can pattern theirs on. The module format consists of the following:
(1)   Introduction/Advanced Organiser;
(2)   Learning Outcomes;
(3)   Lecture (a short one);
(4)   Learning Activities; and
(5)   Assessment.

The course developers are then given time to develop the course materials on their own. Course development consumes the most time in this process. Various factors influence the pace of course development. Some of these are instructor's motivation, number of modules, and instructional design training (Comas-Quinn, 2011; Ellis, Steed & Applebee, 2006; Muñoz Carril, González Sanmamed & Hernández Sellés, 2013). When the BL programme started, one-on-one mentoring sessions were conducted to assist and refine course development skills. These mentoring sessions involved the course developer and an instructional technology consultant. This was the beginning of the TDT. As the BL programme progressed and more people were managing it, the one-on-one mentoring sessions became TDTs. The roles in TDTs are that of instructional technologists, instructional designers, media specialists and the course developers themselves. Each role may be assumed by one or two people. For example, the instructional technologist can also be the instructional designer or these positions can be assumed by two separate people. In keeping with the description of TDTs, all the members of the team are teachers of the university except for the consultant for the BL programme.

The team meets at least once a semester, during what is called a "writeshop", but regular follow-ups are carried out by the team members. During a session, the team works on the following:

(1) Improving the learning outcomes of the module/s – Learning outcomes have to be higher-order skills and thinking based on Bloom's taxonomy;

(2) Developing learner-centred learning activities and assessment – Activities/assessments need to be engaging and require the students to apply the knowledge learned;

(3) Ensuring that the learning outcomes and the learning activities/assessments are aligned – All learning outcomes must be achieved through the learning activities/assessments; and

(4) Identifying appropriate electronic resources, from the web or from available software that will support learning.

By applying the TPACK model to these activities, it is demonstrated that TDT sessions develop and integrate the three competencies (Technological, Pedagogical and Content Knowledge), as illustrated in the table 1.

Table 1: TPACK competencies demonstrated during a TDT session

Activity	Technological Knowledge	Pedagogical Knowledge	Content Knowledge
Improving the learning outcomes of the module/s		✓	✓
Developing learner-centred learning activities and assessment	✓	✓	✓
Ensuring that the learning outcomes and the learning activities/assessments are aligned		✓	✓
Identifying appropriate electronic resources	✓	✓	✓

To further describe the activities in a TDT session, Table 2 provides details of the various roles and their corresponding activities within the TDT.

Table 2: Roles and Activities within a TDT in the university

Role	Activity
Instructional Designer	• Create/revise learning outcomes • Suggest appropriate learning activities and assessment tools • Ensure that the course syllabus is aligned with outcomes-based education • Ensure that the topics picked for online sessions are appropriate for online learning
Instructional Technologist	• Look for appropriate technology for the course • Look for appropriate content on the Internet • Ensure that all technology associated with the course is working and updated

Media Specialist	• Create the learning activities and assessments tools as needed • Upload the course materials
Course Developer	• Create the content • Write the lecture (a short summary of the content) • Create the quizzes and other traditional assessment tools • Look for appropriate technology for the course • Integrate the output of the members into the BL course module (includes revised learning outcomes, appropriate learning activities and assessment, appropriate technologies)

It is important to note that even with the team in place, it is still the course developer's responsibility to integrate all the suggestions from the other team members. After the TDT meetings and follow-ups, the course developer consolidates all the input from the team members and completes the modules for BL course.

When the course developer finishes and submits the first draft of the modules, the modules are then passed through the Quality Assurance Committee (QAC). The QAC is composed of four experts: an instructional design expert, language expert, content expert (specific to the course) and technology expert. Any revisions suggested by the QAC are given back to the course developer. The final and approved version of the modules will then be uploaded by the Programme Coordinator for Blended Learning.

TDT METHODOLOGY

Every semester, teachers are invited to develop courses for the BL programme. Those who apply to become a course developer go through the following steps:
(1) Orientation – The course developers are shown the module format, timeline and other requirements.
(2) Identification of BL topics – The course developers sit down with the TDT to determine which topics/modules are suitable in the BL mode.
(3) First module course development and evaluation – The course developers modify their first module according to the specified format. Their work is then sent to the instructional design (ID) expert for a review. The feedback they get from the ID expert will show them what is expected of them and what their module should be developed into.
(4) Main TDT session – The TDT members meet to collaborate on the development of the course. This session allows the course developers time to focus on course development (something they do not typically have), while having guidance and resources available for immediate consultation.
(5) Group discussion – After the main TDT sessions, informal group discussions take place and any resulting feedback on the TDT sessions is collected.
(6) Course review – The BL modules are reviewed by the QAC. The modules are sent back to the course developer for revisions.

When the BL modules are deemed satisfactory, they are sent for implementation. Upon completion of their modules, the comments of course developers are collected to allow for the evaluation of their experiences with the BL programme and the TDT.

Additional information for this paper was obtained through the group discussions, questions and issues raised by the TDT and observation notes made by the author during all the course development cycles.

TDTS AND THE TRANSFORMATION OF COURSE DESIGN

As detailed above, the course design process in the university is very rigorous. To alleviate any apprehension from prospective course developers, the university has put into place an excellent support system by way of the TDTs. To ensure that the TDTs are working properly, an instructional design expert, a member of the QAC are employed to review the developed courses. The instructional design expert evaluates the BL courses using the following criteria:

(1) Following the module format;
(2) Adherence to Learner-centred design;
(3) Adherence to outcomes-based education;
(4) Actualisation of higher order course objectives; and
(5) Alignment of the course activities and assessments to higher order course objectives.

Using these evaluation standards, the BL courses that have been developed can be considered to be learner-centred. This is done by requiring (with the guidance of TDT members) course developers to utilise learning activities and assessment tools that allow the student to reflect on the knowledge acquired and/or construct their own knowledge. The BL courses are likewise better aligned with outcomes-based education and prepared according to the prescribed module format.

Based on the feedback and interactions with the course developers during and after the writeshops, it can be concluded that they were enthusiastic about receiving guidance in producing BL course materials, through TDTs. BL course developers, who were only experienced with face-to-face teaching methods, have acquired more teaching techniques and skills in course design. They have experienced first-hand the process of designing a course for online learning and have become aware of the different vital aspects of designing an effective online module. These skills and experiences are not limited to their online sessions but can also be applied in their face-to-face sessions. This result of implementing the TDT was not anticipated but is nevertheless opportune. By developing and integrating their technological, pedagogical and content knowledge using TDTs, the course developers have created scholarly course modules for blended learning.

CONCLUSION

When the university implemented the BL Programme, part of the plan was to put support systems in place in order to reinforce and promote the programme. One of the support systems put in place was the TDT approach. The TDT approach has produced a positive change in the course quality and perception of the course developers towards BL. It is the goal of the university to increase the use of these TDTs and diversify the team members. TDTs can be employed in other programmes to facilitate course development or curriculum change.

REFERENCES

Arinto, P. (2013). A framework for developing competencies in open and distance e-learning. *The International Review of Research in Open and Distributed Learning, 14*(1), 167-185. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1393

Cerbin, W., & Kopp, B. (2006). Lesson study as a model for building pedagogical knowledge and improving teaching. *International Journal of Teaching and Learning in Higher Education, 18*(3), 250-257.

Comas-Quinn, A. (2011). Learning to teach online or learning to become an online teacher: An exploration of teachers' experiences in a blended learning course. *ReCALL, 23*(03), 218–232.

Diaz, V. & Brown, M. (2010). *Blended Learning: A Report On The ELI Focus Session.* Retrieved from http://www.educause.edu/ir/library/pdf/ELI3023.pdf

Ellis, R.A., Steed, A.F., & Applebee, A.C. (2006). Teacher conceptions of blended learning, blended teaching and associations with approaches to design. *Australasian Journal of Educational Technology, 22*(3), 312-335.

Friesen, N. (2012). *Report: Defining Blended Learning.* Retrieved from http://learningspaces.org/papers/Defining_Blended_Learning_NF.pdf

Hallinger, P., & Lu, J. (2013). Learner centered higher education in East Asia: Assessing the effects on student engagement. *International Journal of Educational Management, 27*(6), 594–612.

Handelzalts, A. (2009). *Collaborative curriculum development in teacher design teams.* Doctoral thesis, University of Twente, Enschede.

Keegan, D. (1980). On defining distance education. *Distance Education* 1, 1: 13-36.

Lawrence, C.A. & Chong, W.H. (2010). Teacher collaborative learning through the lesson study: Identifying pathways for instructional success in a Singapore high school. *Asia Pacific Education Review, 11*(4), 565-572.

Levine, T. H., & Marcus, A. S. (2010). How the structure and focus of teachers' collaborative activities facilitate and constrain teacher learning. *Teacher & Teacher Education: An International Journal of Research & Studies*, *26*, 389-398. Retrieved from https://van972.files.wordpress.com/2010/02/article.pdf

Liu, S. H., Tsai, H.C., & Huang, Y.T. (2015). Collaborative professional development of mentor teachers and pre-service teachers in relation to technology integration. *Educational Technology & Society, 18*(3), 161-172.

Muñoz Carril, P., González Sanmamed, M., & Hernández Sellés, N. (2013). Pedagogical roles and competencies of university teachers practicing in the e-Learning environment. *The International Review of Research in Open and Distributed Learning, 14*(3), 462-487. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1477

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A new framework for teacher knowledge. *Teachers College Record, 108*(6), 1017-1054.

Naidu, S. (2007). Instructional Design for Optimal Learning. In Moore, M.G. (Ed.), *Handbook of Distance Education* (pp. 247-258). New Jersey and London: Lawrence Erlbaum Associates, Publishers.

Polly, D., & Orrill, C. (2012). Developing technological pedagogical and content knowledge (TPACK) through professional development focused on technology-rich mathematics tasks. *Meridian, 15.* Retrieved from http://www.ced.ncsu.edu/meridian/index.php/meridian/article/view/44/43

Simmie, G.M. (2007). Teacher Design Teams (TDTs) – building capacity for innovation, learning and curriculum implementation in the continuing professional development of in-career teachers. *Irish Educational Studies, 26*(2), 163-176.

Teräs, H., & Herrington, J. (2014). Neither the frying pan nor the fire: In search of a balanced authentic e-learning design through an educational design research process. *The International Review of Research in Open and Distributed Learning, 15*(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1705

Tondeur, J., van Braak, J., Sang, G., Voogt, J., Fisser, P., & Ottenbreit-Leftwich, A. (2012).Preparing pre-service teachers to integrate technology in education: A synthesis of qualitative evidence. *Computers and Education, 59*(1), 134-144.