iLED: interactive Learning Experience Design

Ji Yong Park
Queensland University of Technology
Brisbane, QL   AU
jiyong.park@qut.edu.au

Abstract

Central Queensland University (CQU), Australia, faces declining student enrolment. An economic boom in Central Queensland region such as mining and building construction industries, and apprenticeship training programs within secondary schools and paid traineeships programs have driven secondary school graduates to 'well-paid jobs' rather than 'studies' at universities. In relation to this circumstance, the Dean of Faculty of Arts, Humanities & Education, CQU, raised a course delivery dilemma where the conventional academic teaching model, *lectures, tutorials, workshops, student advice and support*, is far from viable for student needs in the context that a significant proportion of CQU students are mature aged and study by distance education. The faculty dean proposed the challenge of designing a new delivery model to fit into this context. As a possible solution, this paper suggests a pedagogical framework called *iLED: interactive Learning Experience Design* based on defining an interactive learning experience through exploring the online learning experience and context in order to enhance the current CQU online learning system. This paper also discusses the relevant issues in relation to delivery formats, assessments methods, and the required skills for carrying out the online-based learning. At the end, it suggests the five domain prototypes of iLED, categorising the courses and programs being offered by CQU.

Keywords: Flexible learning delivery model; Distance education; Interactive Learning Experience; online Learning

Introduction

Central Queensland University (CQU) is an internationally, nationally and regionally networked and engaged university based in Rockhampton, Queensland, Australia and operating throughout the Asia-Pacific. A leading provider of distance education, CQU also has campuses in Rockhampton, Bundaberg, Gladstone, Mackay and Emerald plus delivery sites on the Sunshine Coast. The University operates international campuses in Sydney, Brisbane, Melbourne, the Gold Coast and has offshore delivery sites in New Zealand and Shanghai (CQU Profile 2007).

CQU faces significantly declining student enrolment for a variety of reasons, but the main reason is derived from various career options from a recent economic boom in Queensland that provides 'well-paid jobs' for secondary school graduates without a university degree. In the context of CQU student attribution, the Dean of Faculty of Arts, Humanities & Education, Smith (2007) analysed that there are two major implications. The first is that the existing programs do not have the requisite market appeal, and the second is that the new products will need to be substituted for what may well be obsolete programs. In fact, approximately 50 of CQU students are international students that the learning contents are remotely delivered from the main campuses, and approximately 40 percent of CQU students are mature aged and study by distance education and part-time (Hobsons, 2007).

In this context, the faculty dean, Smith (2007) proposed 'a challenge for the nimble and creative to design a new delivery model' and emphasised that 'what is important are the principles and procedures under which the proposed new model might operate'. He defined seven presumptions governing the new model as follows (Smith, 2007):

1. It must transcend the conventional lecture/tutorial/workshop-type delivery model
2. It must operate within the cost constraints of A$2000 per EFTSL (Equivalent Full-time Student Load)
3. It must be applicable to multiple site delivery simultaneously
4. It must ensure significant student advice, support and consultation
5. It must be pedagogically sound in as much as it emphasises real, demonstrable learning outcomes rather than "curriculum goals"
6. It must have a coherent and justifiable assessment regime that covers the 'QA' bases.
7. Finally, it must deliver a service in response to which students are 'delighted with' rather than being 'happy with'.

He also provided a possible scenario for developing a new delivery model:

> Assume six domestic delivery sites with 100 students on each site undertaking a range of courses. Design the delivery of at least a single course consisting of some theory and some practical components to each student such that the learning outcomes are demonstrably achieved and student ratings are ones of delight. Ensure that there is a mix of delivery modes' (Smith, 2007).

To respond this challenge, this paper suggests a possible pedagogical framework called *iLED: interactive Learning Experience Design* based on defining an interactive learning experience. The development of an effective delivery model is required for tertiary education as a result of major changes in educational environment, such as the spread of online learning and maturation of ICT - Information and Communication Technology (Saba, 2005). As a result, the gap between teacher and students and administration keeps widening, so that it forces the university out of the conventional model towards a new delivery model enabling the integration of all sectors of the university economically and pedagogically. Therefore, the objectives of the paper are:

- To understand the new paradigm of tertiary education according to the evolution of ICT.
- To suggest a new delivery model in terms of cost-effectiveness, pedagogically efficiency and student satisfaction.
- To argue relevant issues, but essential in terms of the seamless delivery of tertiary education through the new model.
- To present prototypes of the new delivery model in relation to the courses CQU offers.

The structure and facilitation of a learning site can vary according to each discipline matter (Ho, 2002). The paper, therefore, may contain limitations to the extent that the pedagogical arguments, discussions, and suggestions could be affected by the author's teaching and learning experience in Graphic Design and Multimedia Design. However, the outcomes are expected to be extended and applicable to other disciplines in terms of cost effectiveness, pedagogical efficiency, and interactive learning experiences.

New paradigm of tertiary education

Values in education have become increasingly post-modern (Saba, 2005; Peters, 1998). Social changes, the emergence of the post-modern culture, and the evaluation of ICT have pushed tertiary education sectors to break from the conventional model and accept new values. It is required for tertiary education to redesign the delivery model to fit into the new values and include interactive learning experiences, practical learning outcomes, flexible learning environments, student services in terms of customer services mindset, and customised education.

According to Peters (2005, p. 268), however, tertiary education today is mixing three entirely different values and norms; 'the pre-modern culture of the faculty, the modern culture of the administration and the post-modern culture afforded to distance educators by the application of information technology to teaching and learning'. Its implication is that the other two sectors, the faculty and administration, should be reshaped to meet with the learners' cultural and technological learning environment.

The key constituents of education are students, teachers, and content (Poster 2006). The following sections will discuss each education constituent from the perspectives of the new values – the online learning environment.

<u>Students: Interactive learning participant</u>

How a teacher identifies students in the online learning environment is crucial in terms of effective pedagogy. In the online learning environment, the student cohort is not a group of people who receive knowledge, but they are all individual participants of the learning experience (Park, 2007). They do not simply consume the content being supplied, but are able to manipulate content vigorously and actively by using various multimedia and interactive tools as occasion demands. In this environment, they are not an examinee, but an examiner who determines whether or not the learning content and structure is well designed for their learning demands. These views may not be acceptable from the perspective of traditional classroom-based teacher and student relations. However, unless the teacher is able to identify the students from these views, good quality pedagogical performance may not be implemented in at least an online learning environment (Salmon, 2004).

The interface, where participants including teachers are able to communicate, redefines the relationship between a teacher and students and grants the students interactive communication channels with the teacher and other students (Quinsee & Hurst, 2004; Salmon, 2004). These understandings about the relationship do not mean that the teacher leaves students free to navigate the site and communicate with each other without restrictions, but they are to create a learning controlling structure that places the teacher into a broader educational system (Saba, 2005). It requires the teacher to manipulate or reformat the learning content more interactively and manage the components of the site to assist the students' interactive learning experience. The following three items are new definitions of students in the online learning environment.

Students are participants, not receivers

In the online learning environment, students become media participants (Park, 2007). Unlike face-to-face communication in a classroom, the students are free to navigate the site and they recede from the teacher's authority and control to some degree. For example, students may pause in the middle of a video lecture and find relevant information through the internet search engines to understand or critique the lecture. They may stop watching the video lecture because they find it boring. They may prefer to look at other students' conversations in the discussion board or to synchronously communicate with others before they carry out a given task. All the activities occur non-linearly and randomly because this interactive environment sets students free from the spatiotemporal restrictions to a large degree, allowing them to actively participate in the learning content and structure (Park, 2007).

Students are producers, not consumers

The online learning environment, where communication is informal and non-linear, repositions the students in a production experience (Park, 2007). They do not just consume the content provided by the teacher, rather they are able to manipulate and rearrange the content by combining it with other content they have kept or found in other resources such as websites and, as a result, there is a high possibility that students can reproduce it with the new forms. Regardless of the course objectives and content quality, their creative activities can heavily affect the learning experience and should be reflected in the learning design and delivery formats. In other words, the students' online experience requires teachers to reflect on various types of online learning activities and learners' behaviours in their course development.

Students are examiners, not examinees

Students become examiners in the online learning environment because of their changed identities – participant and producer. Even in the conventional model, the anonymous student evaluations of teaching have already been chosen as an important measurement of whether or not the teacher's performance and teaching materials are appropriate for the student needs, and whether or not the majority of students achieved the course objectives. In the online learning environment, on the other hand, the teacher's performance, communication, teaching materials, and other students' activities can be stored and recorded at a student's desktop computer and the data can be retrieved at any time. In other words, while the teacher is marking the students' performance, the students are also assessing the course and teacher's performance on the basis of their data and learning experience. Therefore, the key factor determining the overall success of the course delivery is the learner's engagement and satisfaction with the learning experience.

By considering these understandings of the students, the term 'student' is not appropriate for describing the educatee in the online learning environment because 'student' refers to a passive object who is studying at a university or college. In response to their new identities in the online learning environment, *an interactive learning participant* is suggested as a more comprehensive and active concept that describes them as active participants and content creators in an interactive learning environment.

<u>Teachers: Interactive learning instructor</u>

In offline education, the primary activity of a tertiary educator is to convey useful information to learners. It presumes that a teacher has high quality and updated knowledge and information about the topic which students cannot gain from other sources, which gives authority to the teacher. However, in the online learning environment, from the interactive learning participant's point of view, a teacher is often regarded as a content provider and facilitator because of the indirect communications between a teacher and learners (Abrahamson, 1998). The learners are consuming the content with various motifs such as entertainment, self-motivation and goal-orientation. In other words, if the learner is not able to self motivate to achieve the course objectives, they are likely to lose interest in learning and easily fail the course (Abrahamson, 1998; Wiesener, 1983).

If the learner does not experience or feel that they are the participant in the learning in terms of consumption of the content, and the course site does not provide useful and updated content, the learner will lose interest in studying and blame the course provider. The teacher is regarded by the students as one of components of the learning content, such as an actor in a lecturing video clip or an agent of the learning site. Its implication is that web-based teaching should go beyond the teacher-centred and focus on the learner-centred pedagogy. To successfully provide an online course and to meet the online learner needs, the teacher should be able to achieve multitasking as follows.

Teachers should be active participants

As learners have become participants in the online learning environment, the teacher is also required to be an active, not passive participant. The teacher should be able to demonstrate a skill or present a clear direction to provide learners with a high quality learning experience and achieve their course objectives. The role of the content provider is terminated when the content is uploaded in the site. After that, the teacher's role should not remain a mere observer because the course site does not indicate a beginning and end of the class, and the students are accessing the course site 24 hours and 7 days a week. To motivate students to study, the teacher should become an active participant who visits the site regularly, giving an answer to questions in time, suggesting different views and providing relevant information (Alderman & Fletcher, 2005).

Teachers should be the moderators in a learning community

The online learning environment requires teacher to be moderators, because the learning site can easily form a virtual community through participants' activities, and truly operate through learner participation. As a teacher manages the students' behaviours in classrooms, so the teacher in the online learning site needs to moderate participants' activities and monitor their learning process in order to take further action to help their learning and maximise their learning outcomes. The teacher needs to grasp a situation in which the student may need to talk via email, phone, or face-to-face (Hallas, 2005). In the case of online group work, for example, the teacher may need to connect students to one another for forming groups or encouraging their communications if necessary.

Teachers should be learning designers

To maintain and update learning content according to the learner needs, the teacher has to consider diverse forms for an effective delivery of learning content in terms of student participation and involvement. The teacher often needs to discuss with a multimedia designer or programmer to find more suitable delivery formats or to keep up with current trends in technology and online education. The teacher is often required to become an early adopter or a reviewer who keeps updating the new knowledge and technology, in relation to the learning content and delivery, pedagogically and practically.

By considering these understandings of teachers, the term 'teacher' is not appropriate in the online learning environment, because 'teacher' means a person who is teaching at a university or college. The new term should be *an interactive learning instructor* who is able to manipulate the learning content

being fitted into an interactive learning environment and the course matter, and to moderate the learning site from a perspective of maintenance and encouragement of individual learners and the whole community.

Content: interactive learning units

Facilitating interaction between learner and content is the fundamental form of distance education (Moore & Kearsley, 1996). In the online learning environment, regardless of the content quality, learners may think they have learned nothing from the course because of the characteristics of interactive learning participants and the online learning environment when the course content:

- is out of date
- is a table of contents from a textbook(s)
- can be replaced by better content based on an internet search
- is presented with a poor visual form and without considering multimedia delivery formats
- does not encourage participation and engagement

A classroom lecture course can be transformed into a video clip that is regarded as a single learning component in an online learning environment. The online learning content becomes information chunks, so the instructor should consider its diversity and effective delivery forms in order to map out various interactions between the content and the learners, according to the learners' learning environments. As the online learning environment requires the learners to be interactive learning participants, so the learning content has to be redesigned based on understanding of the concept, *an interactive learning unit* that refers to the smallest learnable form based on the characteristics of flexibility and immersion. It enables the learners to arrange the content according to their learning style and workload. A one hour full lecture video, for example, needs to be split into several small clips according to the sub-themes in terms of its download speed and transferability to a portable media player.

A new delivery model: iLED

From the redefinition of the three education constituents, interactive learning participants, interactive learning instructors, and interactive learning units, as well as the interactive learning experience and environment in the previous section, an important concept, *the learning interface,* has been deduced. The learning interface plays a role in mediating between interactive learning participants, instructor, and learning units. The interface is not just the border between two subjects, learners and the instructor, but it is an interactive space enabling learners to diversify interactions with instructors, learning units and other learners, and to connect outside the learning site. In online learning delivery mode, therefore, the conventional constituents of tertiary education are integrated into or assist the learning interface.

iLED

Based on current CQU teaching and learning components and the new definitions of the three education constituents, a conceptual model has been developed as Figure 1 shows. The model is called *iLED,* which stands for *interactive Learning Experience Design*, and it creates a seamless delivery model. The iLED interface is perceived as an integrated and interactive learning environment by learners. All components, learners, instructors, administration, ITD (Information Technology Division), and DTLS (Division of Teaching and Learning Services), should focus their roles and concerns on the iLED interface and attempt to create a good quality learning experience from the interactive learning participants' perspectives. The concept is customer care and customer satisfaction, which have become imperative issues in education services (Parkinson & Forrester, 2005). All components have been rearranged to assist the learning activities within the iLED interface and help the learners create a quality learning experience.

The conceptual model lays the foundations for creating diverse online practical and delivery modes. iLED conceptualises the an interactive online-based learning environment and suggests not only an effective way to deliver learning content, but also the creation of a community where learners can actively and creatively participate. The learners can contribute and share their knowledge, skills, and experiences with other learners so that it enables them to approach the content from various perspectives, and often reconstruct it by themselves. It enriches the learning experience and improves the quality of the learning content through active participation and feedback.

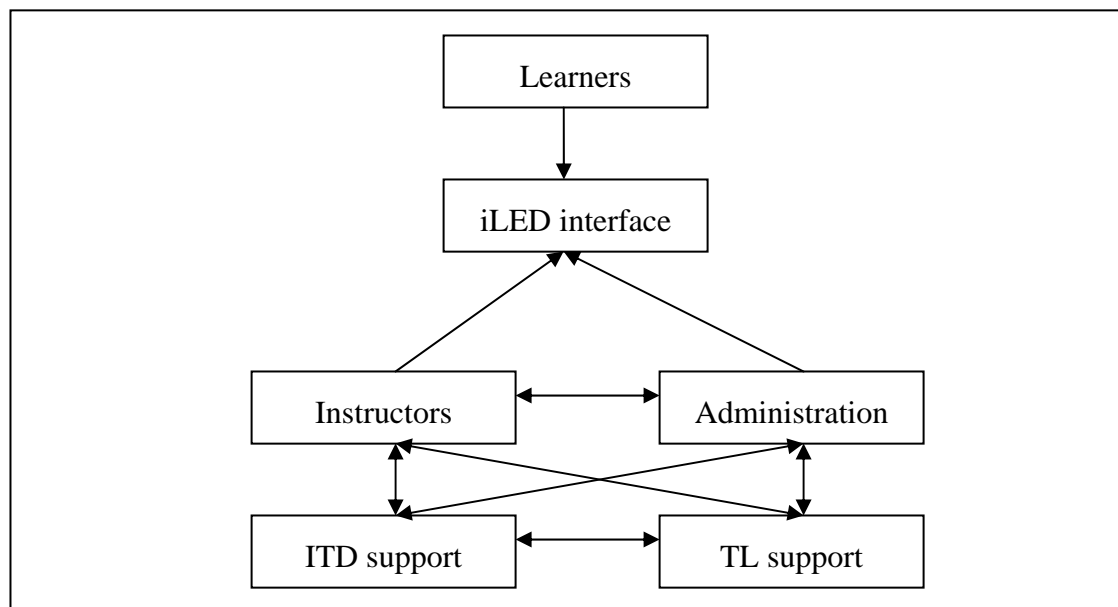Figure 1. The relationship among iLED components

Figure 1. The relationship among iLED components

Many educators have a tendency to think that online-based learning (OBL) could simply supplement the conventional model of education, and that the conventional model still has a priority pedagogically (Day et al., 2005). From the concept of iLED's view, conversely, the conventional model could also be used to support effective online learning in terms of enhancing the interactive learning experience. Residential workshops, for example, could be helpful for those who need particular fundamental skills and knowledge to complete the course; guest speakers from industries could give opportunities for learners to envision their career in the future, and regular meetings with group members for collaborative work could encourage learners to participate in the course. Therefore, online and offline learning modes could supplement each other and a mixture of both could proposes various modes of delivery formats and methods.

Pedagogical framework of iLED

The benefits of OBL are flexibility, deliverability, and interactivity that enable access to study materials and services from anywhere and anytime. There are three key elements of OBL determining types of interaction among the three education constituents, which are communication, community, and visual interface. When considering the fact that interaction characterises quality of learning experience in online education (Alderman & Fletcher, 2005), it is logically correct that these three components of OBL are also variables of iLED, the conceptualised interface of OBL, which defines the relationship among the three education constituents. In other words, communication, community, and visual interface are the three key variables of the iLED interface for creating and maintaining an interactive learning experience. When these are subcategorised according to the four levels of interactivity; primary, secondary, tertiary and quaternary, it is able to suggest the pedagogical framework of iLED as Table 1 shows. The interactivity levels are based on three levels as many researchers have suggested; high (primary), medium (secondary), and low (tertiary) interactivity (Park, 2007; Carter & Lange, 2005; Barkhuus & Dey, 2003; Wei, Liu & Zarki, 2003; Bergeron, 1999) and the quaternary refers to the interactive learning site.

Communication

According to Moore and Kearsley (1996), there are three types of interaction in distance education: Learner-Content Interaction, Learner-Instructor Interaction, and Learner-Learner Interaction. The three types of communication in OBL are subdivided into three components of OBL and the four levels of interactivity. The three components of OBL affect one another so that they are correlated and interrelated, but the order of priority would be placed according to the levels of interactivity.

Community

Moller (1998) defines three online communities in OBL: academic community, intellectual community, and interpersonal community. The academic is a community operated by learner-to-content (or instructor) interaction. The intellectual is a community operated by learner-to-learner interaction, mainly focusing on exchanging information for their study. Finally, the interpersonal is a community which has more social interaction, such as interpersonal encouragement and assistance. Therefore, online communities are essential to engage the learners in the interactive learning experience and improve the quality of the teaching content (Murphy & Jerome, 2005).

Visual interface

George (1996) argues that the form of delivery can generate particular types of learning behaviours. Magalhaes and Schiel (1997) suggest that screen layout is a critical question in OBL evaluation. McGreal (1997) also points out that visual interface is an important factor in designing OBL that it is space where learners' interactivities with content, instructor and other learners are stored rather than the learning materials only.

Table 1 presents the developed pedagogical framework of iLED based on the arguments so far, that three key components of OBL; communication, community, and visual interface are subdivided into the four interactivity levels based on relations of the three education constituents; learner, instructor, and content. Basically, the pedagogical framework directs the instructor to arrange and organise a complex relationship among the OBL components and the education constituents within iLED interface demographics. The framework enables instructors to determine or evaluate the level of interactivity according to the course objectives and the learners' learning experience. Furthermore, it enables the learning designer (or instructor) to effectively communicate with the instructor in terms of adjustment between the instructor's existing technique and experience and the learning content, and to translate the learning materials into an appropriate online format.

Table 1. Pedagogical framework of iLED

Interactivity	Communication	Community	Visual interface
Primary	Learner – Instructor	Learner – Learner	Learner – Content
Secondary	Learner – Content	Learner – Content	Learner – Instructor
Tertiary	Learner – Learner	Learner – Instructor	Learner – Learner
Quaternary	Learner's learning environment and previous background		

Topology of course delivery via iLED interface

The possible delivery types of learning contents and assessment methods can be suggested, based on the pedagogical framework of iLED and current multimedia technology. The following lists are the possible delivery types, and which could create a new delivery type by combining with one another. It is important for instructors to know what types and methods are possible and appropriate in terms of designing a learning experience for online delivery.

Types for course content delivery

- Video stream & Text: the course is conducted by a video clip and text slides. It is an online face-to-face class with a lecture note. They work synchronously to increase learning motivation and attract the learners' attention visually.
- Voice stream & Text: the course is conducted by a voice clip and text slides. They work synchronously so as to raise learning motivation and grab the learners' attention. The file size is very small so that the learner can easily and repetitively access the course.
- Chalkboard lecturing on video clip: the course presents a lecturer's performance with a chalkboard so that learners may feel they are attending a traditional classroom.

- Multimedia document (multimedia PDF and PPT): the course provides a document with diverse media elements such as a video, an animation, and an image.
- Podcasting: audio or Video podcast format of delivery
- Role playing with a video instruction – a learning agent, or an illustration or text with audio: this virtual role play is effective and suitable especially for learning a second language.
- Demonstration: the format shows a sequential process where a lecturer or tutor demonstrates a concept/product development.
- Group task board: a group presents a process of problem solving through a forum board and file exchange chronologically.
- Discussion with students: a video or audio clip being recorded in a group discussion.
- Multi-lecturer (two, three, or more in a course or omnibus lecture): more than two lecturers present one topic from each one's expertise. An omnibus style lecture enables one course to be operated by several lecturers who cover their own topics.
- Outdoor lecture: recording an outdoor performance such as visiting a place or an interview.
- Native speaker and subtitle: foreign language (one lecturer or conversation) practice based on subtitle function.
- Comic book style: interactive flash animation with word balloon or speech.
- TV news style: video lecture with graphic background presenting the relevant information.
- Video conference: video conferencing using window cameras and web conference function
- Video or image capturing: demonstration of a practical tutorial by video or image capture

Types for Assessment implementation

- Simple and quick online quiz test
- Word document: essay
- Images: captured image or digital photo of the work
- Tele-examination: verbal examination (interview) via telephone
- Collaborative work: assign a discussion board to each group and have the students reflect their activities and communications to the board.
- Online written examination (When the student clicks out of the specific space in the browser and presses a special key on the keyboard, it alerts the student that it is a cheating behaviour.)
- Attendance check by leaving a short message (feedback on the weekly lecture topic) on the attendance board
- Participation rate of the discussion board
- Sequential process with a blogging tool
- Residential workshop if necessary
- On-campus examination if necessary

Teacher and administrator's inadequate technical skills and a lack of understanding of OBL are inhibitors in the implementation of iLED-based learning (Waldron, Dawson & Burnett, 2005). More seriously, inadequate understanding of the technology in terms of its application of the learning outcomes could constrain the learners' various learning experiences within word-based outcomes in linguistic mode. Pedagogically, giving various learning outcomes encourages learners to engage in more creative and innovative thinking (Herrignton, 2006). The following lists are the required technical skills for instructors to conduct their online teaching. These are categorised with fundamental and desirable skills. The fundamental can be regarded as generic skills being used in workplace, and the desirable skills are also unspecific skills in that these skills are common among the generation Y and X who are actively blogging at social networking sites such as FaceBook, Myspace, and YouTube.

Fundamental skills

- Image manipulation
- Image capture
- Basic HTML
- Digital Camera: higher than 4.0 pixels
- PDF document production
- Image scan
- Multimedia based presentation document

- CD / DVD burning
- Learning Management System literacy such as Blackboard and Moodle

Desirable skills

- Basic graphic design in terms of image creation and manipulation
- Video & Audio editing (cut & paste editing, subtitling)
- Instant Messenger including file exchange and web camera)
- Social networking services
- Gif animation or Frame by Frame animation
- Video camera / Web camera

Prototypes of iLED

All of the learning prototypes presented below have been designed based on the concept of iLED and the requirements of the *Executive Dean's Challenge;* multiple site delivery, cost constraints, learner's satisfaction, and pedagogically effective interaction with learners. Based on the CQU student handbook, 2007, with consideration of OBL, the courses and programs CQU offer could be categorised into five areas depending on learning types; technical-based courses, theory-based courses, lab-based courses, language courses, and practicum-based courses. For technological limitations and curriculum objectives, some courses have to liaise with on-campus programs such as residential schools, workshops, intensive tutorials, laboratories, and orientation.

Practice-based courses

The practice-based course framework aims to enhance skills and knowledge in a particular profession. These courses involve learning experiences in the context of actual work experiences, and the main purpose is the learners' acquisition of the required skills and knowledge. The following table is a possible structure for a practice-based course applicable for the courses offered in Multimedia, Music, Performing Arts, and IT. There may be too many practice-based courses which still follow the conventional model – lecture and tutorial in CQU.

Theory-based courses

The theory-based courses like many psychology and law programs have a tendency to prioritise lectures; but OBL has a 'relatively loosely structured mode of teaching and learning' (Bennett & Broadfoot, 2003, p. 4) so that the learners' active involvement is the key pedagogical feature into which the course materials and components should be organised in order to stimulate learner's participation and engagement. The following table is a possible structure for a theory-based course that is applicable for the courses offered in Education, Journalism, Humanities, and Business.

Lab-based courses

Lab-based courses are required to present clear instructions on how to operate devices, and detailed explanations of what the learner will receive. Effective visualisation of learning materials is critical to communicating clearly and distinctly with the learners. This framework is applicable for the courses offered in Science and Engineering and the following table is a possible structure.

Language courses

Learning a foreign language requires a great deal of practice in four main areas: reading, writing, listening, and speaking. Although it seems that online-based language learning has not many opportunities for face-to-face communication with native speakers, diverse formats of learning using multimedia, such as audio, video, animation, and pictures, could provide a more dynamic and interactive language learning experience. This framework is applicable for Japanese in Education and English courses in the Language Centre and the following table is a possible structure.

Practicum-based courses

The practicum-based course framework is characterised by the learner attending a practice place and committing to a specific task. The course website should aim to reinforce professional and practical capacity by offering learners the sharing of experiences and good practices in their area. This model is applicable for the courses offered in the Leaning Management and Nursing programs. The following table is a possible structure for a practicum-based course.

Table 2. Practice-based courses of iLED

Course components	Delivery formats
Studio	- Activity or project guideline and examples - PPT, Image slideshow with written explanations, Video clip if necessary
Practice note	Step-by-step and easy-to-follow note and/or Demonstration by video capturing
Technical tips	HTML or PDF (depending on the learners' level or which has not been covered in practice notes.)
Resources	Hyperlinks to tutorial websites / list of reading materials
Learner-to-learner interaction	Encourage the students to share their works on the discussion board
Assignment	Practices or projects
Contact	Discussion board, email, telephone, online chatting
Workshop	Technical demonstration or residential school if necessary
Campus lecturer	Unnecessary
Campus tutor	Basically unnecessary, but if required, the course developer visits to the campus. e.g.) 1 day intensive workshop

Table 3. Theory-based courses of iLED

Course components	Delivery formats
Lecture	- Video or voice lecture (if possible, divide a full lecture into several clips, like topic by topic) - Summary or key reading points of the main reading materials, and additional materials enable the learners to easily access the materials (providing only a list of reading materials or resources is not motivational, so the learner may not open it at all)
Discussion	Written brief of group discussion via group-based discussion board asynchronously / tele-discussion
Presentation and discussion	Let the group come to school and record their presentation in front of others (a lecturer or other students if they wish). Upload it at the course site and discuss the topic asynchronously
Discussion examples	If possible, let the learner watch a video clip containing other (previous) students' (lectures') discussion and add their own comment or opinion on the discussion board or submit it to the lecturer via email.
Resources	Hyperlinks to relevant websites / list of reading materials
Learner-to-learner interaction	Topic-based discussion boards
Assignment	Essay or project reports
Contact	Discussion board, email, telephone, online chatting
Workshop	Residential school if necessary
Campus lecturer	Unnecessary
Campus tutor	Unnecessary

Table 4. Lab-based courses of iLED

Course components	Delivery formats
Instruction	Text or Video or illustration-based instruction
Laboratory manual	Text or Video or illustration-based instruction
Demonstration	Video or image-based demonstration
Simulation	Flash animation
Resources	Hyperlinks to relevant websites / list of reading materials
Learner-to-learner interaction	Discussion board
Assessment	Residential school
Contact	Discussion board, email, telephone, online chatting
Laboratory	Residential school
Campus lecturer	Only when residential school
Campus tutor	Unnecessary

Table 5. Language learning courses of iLED

Course components	Delivery formats
Dialogue	Video or voice clips
Listen & repeat	Video or voice clips with caption
Situational conversation	Flash animation or illustration-based
Writing	Diverse writing genre such as a news article, a weather report, and a letter
Reading	Text and translation
Resources	Hyperlinks to relevant websites / list of reading materials
Learner-to-learner interaction	Discussion board and email
Workshop	Intensive language learning with natives
Assignment	Residential school / online quiz / tele-examanation
Contact	Discussion board, email, telephone, online chatting, web video conference
Campus lecturer (native speaker only)	Only when residential school
Additional service	Podcasting service for their continuing practice

Conclusion

This paper proposed frameworks of interactive learning through exploring the concept of interactive learning experience to fit into the context of CQU. Although the frameworks could be limited in directly applying to each discipline, they provide practical guidelines for creating an effective and interactive learning delivery model. For further development, there are two other factors that should be considered in terms of truly interactive and innovative learning.

First, the official Learning Management System of CQU is Blackboard[TM], which provides various capabilities and possibilities in delivering diverse learning content via OBL. Currently, many teachers are struggling with transplanting their learning content to Blackboard[TM] without considering the characteristics of OBL. A teacher training workshop and conference on the effective use of Blackboard[TM] is essential for teachers to have a new mindset for the online teaching performance. Furthermore, the training program should be able to cover both technical and pedagogical views. To do this, it is vital to create a Blackboard-based prototype of a representative course from every discipline, and the prototype course should be evaluated by students as well as online learning experts. The prototype could help teachers conceptualise and operationalise their courses in the Blackboard[TM] platform.

Second, a learning community for each program outside course sites is an important learning strategy that provides students with virtual sociability in terms of an informal learning experience, as on-campus students have various social interactions through their personal and social networks. The learning communities will encourage students to continue, and their studies will be more effective with technical and emotional support. The community is able to lay the foundations for an extended community capable of including alumni, local communities, and industries, co-operating with virtual student services.

Table 6. Practicum-based courses of iLED

Course components	Delivery formats
Instruction	Text or Video-based instruction and guideline
Pre experience	Situational verbal or written explanation / situational video clips
Sharing experience	Discussion board or teleconference weekly-based, situation or topic-based
Personal consulting	Email, telephone, and visitation (ensure that the learner is able to get personal consultancy in relation to the practicum)
Resources	Hyperlinks to relevant websites / list of reading materials
Assignment	Reports or project
Contact	Discussion board, email, telephone, online chatting
Campus lecturer	Only when residential school
Campus tutor	Unnecessary

Acknowledgement

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