Published 1999

A Dialogue on On-line Education with leading Instructional Designer Mrs. W. Mei Fang

Mrs. W. Mei Fang is an experienced instructional designer with considerable international experience in helping faculty members, subject matter experts and trainers to integrate instructional technology and multimedia information design in their teaching and publications. She has worked in these fields for close to 20 years and is now an independent consultant to CELT and other tertiary institutions on instructional design and on-line course design in particular.

Note. All in-text sub-headings and highlighting are by the Editor.

Q1. Recently, several terms--on-line education, distance learning and flexible learning, for example--have become buzzwords. Do they refer to the same thing, and what are some of the structural differences between on-line education and traditional face-to-face instruction on campus from an instructor's perspective? Could you give us some examples to illustrate this?

Yes, these are buzzwords these days. Being a member of ASCA (Alphabet Soup Club of Acronyms), I can think of a few more as well! Terms such as web-based instruction, web-based learning, or distributed learning also refer to alternative learning and teaching environments similar to the terms you just mentioned.

Basically they all refer to an alternative learning and teaching environment where the three main elements in teaching and learning "learning resources, instructors and learners" can be physically independent from each other and yet communicate with each other through technological means. Today, the most referred to technology for this purpose is the World Wide Web on the Internet. Educators can use this medium, to different degrees, as a supplement to their traditional teaching, such as in the areas of communication and information dissemination. Others can use it as an alternative way of delivering complete and independent course programs on-line. As a result, the alternatives give all parties more flexibility in terms of time, location, learning style, learning pace, satisfying learning objectives and mode of interaction. Therefore, there are terms such as flexible delivery or on-line education in general.

The main difference between the structure of face-to-face instruction and on-line education is the difference between a teacher-centered learning and a student-centered learning environment.

Teacher-centered learning environment

A face-to-face instruction environment, such as a classroom, enables the instructor to meet with the entire audience at a designated time and location, to cover a pre-planned agenda of learning objectives. The instructor is in control of the pace of learning, the content, and what direction and how long discussions may take. This is a typical example of a teacher-centered learning environment where the learning process is managed by the teacher. In this case, the level of learning is prescribed and the learning experience for students is generally dependent and passive.

Student-centered learning environment

An on-line education environment on the other hand offers students flexibility in the pace of learning, different entry levels to the content, opportunities to interact with content, self-assessment, and communication among class members and with the instructor. This medium can also simulate the face-to-face mode of

communication with activities such as video- conference, video footage of the lecture, modules of interactive activities, real- time feedback or discussions via E-mails or other synchronous communications software. In other words, the reality and benefits of a face-to-face classroom can be simulated (in virtual reality) with the help of technology. However, the students will not benefit from these features unless they initiate and manage their own learning strategy. The learning experience could be self-directed, independent, interactive, and constructive, and these are precisely the characteristics of a student-centered learning environment. The teaching experience for the instructors on the other hand becomes more involved in terms of content planning, motivating students to learn and evaluating their progress.

However, having said that, I have to point out that **every instructional strategy has its unique features and possible weaknesses. It is the educators who will have to make the choices on how to apply these strategies and in what context should they be applied.** In other words, face-to-face instruction is a spontaneous medium, but so are prompt replies by E-mail or on-line group discussion. Lectures may be didactic and superficial, but poorly designed on-line courses may also have the same weaknesses.

Q2. What are the advantages and disadvantages of web-based learning/teaching to instructors, students and our institution?

Firstly, I would like to use the words advantages and challenges instead. Much of these characteristics is based on how fast technologies advance and how fast we learn to make the best of them. What is an "disadvantage" today may not necessarily be one tomorrow.

Instructors:
For instructors, the advantages are many. Basically they are **all about freedom of choice**. For example, they will have more choices in designing strategies and media for implementing the course materials to meet different types of learning objectives. They can include learning resources in different media, such as sound, animation, video clips, etc., to meet the specific learning objectives all in one interactive learning environment.

They will also have more opportunities in promoting a higher order of learning skills in students. They will be able to customize their contents to achieve a more personal and interactive learning environment. Lesson modules will be more concise and consistent in terms of the learning experience. Instructors are able to put up more rhetoric questions, external references on background or more advanced information, and interactive exercises to stimulate the learning process.

Course contents will reach more students in an environment that is not bound by location, time, or a certain learning mode. Once their course is published on the web, they will have more time on hand because they are not bound by fixed class schedules.

Ironically, the **challenges for instructors** also concerning time as well.
To start a new on-line course, they will have to devote a considerable amount of time to work with the instructional designer on their teaching materials such that the content will be appropriate for the new environment. They will need time to collaborate with the course- development team to ensure the subject content is correctly interpreted, delivered, and assessed. And time will need to be put aside for on-line communication with students and for the monitoring of their individual progresses. In general, instructors will spend most of their time on identifying the most effective ways to motivate their students from a distance.

Another challenge for some instructors is the feeling of "out of touch" with the class. At the beginning, for some teachers, the experience of a "cyber- class" will be very different from a traditional medium with face-to-face contact. However, these anxieties will be relieved when students begin to respond through different means of communication technology. Physical group meetings can also be arranged strategically to enhance the progress of the course. What is for sure is that , the instructor's role will be different and expanding.

Students:
For students also, the main advantage is about **freedom of choice**.

They can take charge in planning their own learning strategy according to their own preferences such as the time schedule, location, physical alertness, level of entry to course contents, and learning style. Interactivity is another unique advantage of the on-line learning environment, not only because it provides students with options, but also because it increases the retention of knowledge. They can pick and choose the entry level that is appropriate for them. They can revisit certain modules or skip parts if they have already satisfied the prerequisites. The inclusion of different media in an on-line course will stimulate different learning styles. Examples such as the these can stimulate different styles: an animation that simulates the possible results of an abstract mathematics formula; a sound recording of a famous historical figure; a series of photographs that depicts a meteor storm; or a video clip showing how a hurricane lands.

For students, the most main challenges are probably in **building strong self discipline and an effective learning strategy**. Some students miss having spontaneous communication with their instructor and classmates in the same physical environment. Most students in Hong Kong today are not so independent and are not used to being responsible for their own learning progress of learning. For these students, they will need to learn how to learn on their own. They will need to learn how to collaborate with classmates differently. Finally they have to learn to be assertive in approaching their instructors.

For the institution:
For the institution, the benefits are manifold. A program of on-line courses can facilitate many more students, not only in Hong Kong but in other parts of this the world. A comprehensive on-line education system can attract additional students with relatively lower per-capita incremental investments in terms of additional facilities, human resources, and materials. The institution can enhance its influence academically over a much wider scope.

However, there are considerable **challenges for the institution** as well. Management will have to provide targets and profiles of learners, as well as the time, support, resources, infrastructure, and recognition to instructors who are going on-line with their courses. The sooner these initial commitments are made, the sooner the efforts results and benefits will become reality.

Q3. Would learning on-line make our students more active, independent or self-directed in their learning?

Yes and no. Yes, if the on-line course is effective in its instructional design, clear in its learning objectives, easy to navigate, and effective in its media integration. These elements will encourage and reward the student in the process of self- directed learning. On the other hand, if the on-line course does not have such elements as mentioned above, the students will feel frustrated, unmotivated, and confused.

Having said that, students for their part have to sharpen their skills in accessing, evaluating, and applying

information in order to be truly active and independent in their self-directed learning process. Otherwise, they could be just as passive as they were in a classroom, taking notes or memorizing contents with minimal critical thinking, and not focusing on how they could apply the knowledge. Therefore, learning how to learn on their own effectively is first and most crucial for most students.

Q4. If an instructor would like to put a course on-line, where should he start? What would be the major differences in planning a face-to-face course versus an on-line course?

There are similarities as well as differences in planning a face-to-face course versus an on-line course.

At the beginning I would recommend the instructor to take the role of a on-line student. Experience how is it like to take an on-line course, or just a lesson. Take notes on the learning experience. Visit a couple more similar courses on-line and compare your experiences. Record what are the essential elements that both stimulated you and unmotivated you during the learning. Better yet, do this with an instructional designer, and discuss the experience in terms of learning outcomes and overall user satisfaction.

Second, the instructor should take the role of an instructional designer, or work with one, to clearly layout the learning goals, terminal and enabling learning objectives of the course from the viewpoints of a student. In other words, layout the blueprint for the structure of the course. In this process of organizing and expanding the learning objectives, appropriate strategies and learning activities will become clearer.

Instructors may ask, "Isn't that the same as what we do already for planning our tradition teaching?" Yes, they are right. Effective teaching and learning experiences rely on content first, and second on media and technology. **The difference of preparing an on-line versus a face-to-face learning experience for instructors, is the difference in degrees of design details and information organization**. For an on-line course, contents are designed in numerous structural interactive modules because otherwise students will be overwhelmed with the experience of "information overload" and "underwhelmed" with the lack of interactive motivations.

Another important difference for instructors is the experience to have the luxury of working with a development team on their courses. Instructors may have to adjust to working with different professionals on their course contents as a team effort.

Q5. What follows in actual course design and development after initial planning and decision?

A team work approach

Effective on-line course development is a very involved process that will require a multi-discipline team to develop and implement. As I said earlier, deciding on the learning objectives will provide a blueprint for the team to design strategies, motivation activities, and criteria for assessment. This master plan will also provide directions for media integration, graphical user interface design and criteria for formative evaluations. The team members will contribute their expertise in the areas of instructional design, information management and access, multimedia design and integration, user interface design, technical support, evaluation, and maintenance, and project management.

Work on the blueprint to develop a detail story board

The team members will approach development in different stages. The procedures and number of roles

member play during these stages are involved. In general, the team will first interpret the blueprint into hierarchy of information. They will define the relationships, requirements, and the size of the layers of information in order to establish a framework for information navigation and user interface design. A prototype, a detail story board, or a graphical flowchart for the content development will be necessary at this stage for the team to confirm on the plans.

Choice of media and creation of information

The next phase will be identifying the most appropriate on-line environment for content development. Next step is to implement the details of each module of information within each layer in the hierarchy that was layout earlier. This process will mainly include deciding which media to use to deliver the contents according to the blueprint. Digitization or creation of information, including text, graphics, sound, and video, will take place. Writing and editing are important parts in this phase. Formative evaluations are expected at different levels of completion and revisions are made promptly. Through out the formative evaluations, products should be tested on-line and on different platforms.

Trial run

When the development process is completed, the last stage is to launch the contents in a real user environment for more testing and possible minor revisions. Advertisement, user support, and maintenance of the on-line courses are important factors that will help to increase and sustain the effectiveness of the products.

Q6. What are the instructor's roles in this process?

Instructor as subject expert & instructional designer

In the planning process, the instructors will be the subject matter experts (SMEs) who will give expectations and criteria for learning outcomes as an academic expert in the content area. The instructors will also take the role of an instructional designer and a facilitator who will generate the following such as, the learning goals and objectives, appropriate instructional strategies, channels for knowledge base, and assistance for anticipated questions.

Instructor as coach to students

When the course is published on-line, the instructors will respond to and guide the students in the roles of a coach and an advisor. The instructors will motivate, give advice and guidance to the students on tasks such as, solving problems, finding a direction to research, or evaluating if criteria are met.

Instructor as manager of the class

Even though the instructors will meet with their students mostly in the cyberspace, they will still need to lead and manage their class as a leader and manager. They need to set, or come to agreement with the class on expectations , ground rules, and guidelines for their overall performance, deliverables and assessment.

Q7. From real life experience, how much resources and instructor's time are needed to plan a 3-credit course on-line? What kind of help is needed? Where is the help?

It differs from case to case because of the availability of resources and infrastructure, scope of the learning objectives, and whether the instructor has taught the course before. For a 3-credit course on-line, it could require nine months to a year of advance planning and development if the instructor has the framework of materials already. In addition, as I said earlier in response to your question 1, on-line learning could be

designed as a supplement for a traditional face-to-face instruction to achieve specific purposes. In this case, development time could be shorter.

Usually, when instructors are thinking of putting a course on-line, they should first approach the teaching and learning resources at their institution, such as the CELT at UST, to plan and discuss timeline, goals and source of funding for the project. After these issues are confirmed, representatives of the design and development team will work with the instructor or department to get the project started. The following activities are as I have suggested in my answers to your Question 6 and 7.

Q8. What can easily go wrong in this process? According to your observation, are our students prepared to learn on-line? How about our instructors?

Things can go "right" as well as "wrong" in an on-line course development process. First, from my experiences, there were a lot of wonderful things that happened. Instructors were usually amazed with the end products. They were thrilled to see their course content could take on so many facets in delivery. They become more aware of the blueprint making processes in every course they teach there after. They are more aware of the student's perspective in learning. They are surprised to see traditionally "non-responsive" students and students from far away places who are now responding to their E-mail accounts and the TAs'. They will also generate a lot of interests for their peers in the department.

In general, **for any project that requires team work, both communication and commitment are most important.** If anything does go wrong, usually they will fall into one of these two areas. Therefore, knowing this in advance will alert the team members to prevent for such possible problems. It is important to ensure foundation issues such as expected learning outcomes, learners' needs analysis, and support from the institution are all correct and clear in the beginning.

As I pointed out in my answers earlier, what could be a disadvantage or weakness today in on-line education, may not be one tomorrow. **How we learn to learn independently, how well we could process and apply information with higher order of learning skills, will decide how efficient we will be in using technology to empower ourselves**. As long as we have the desire to learn and improve, regardless of the roles of an instructor or a student, we will learn to adapt and adopt the new paradigm of teaching and learning.

Thank you, Mei, for the very comprehensive and encouraging information given.