Professional Development: Designing for the Cognitive and Affective Domains

Iain Doherty
eLearning Pedagogical Support Unit
University of Hong Kong, Hong Kong

Abstract
This paper critically reflects on the pedagogical approach underlying a professional development course in eLearning. The aim of the course was to teach faculty-based eLearning officers the necessary practical and theoretical skills to fulfil their roles in supporting Faculties with eLearning initiatives. Whilst the course was successful – judged in terms of the pass rate and course evaluations – it was felt that the underlying pedagogy could be improved by taking the affective domain into consideration. In particular, there were issues with the perceived relevance of the course, participants’ confidence in their abilities and the perceived value of the Certificate Course in the context of participants’ careers. The proposed revisions are presented and discussed in order to offer a revised learning design to place attention on the affective domain in continuing professional development.

Keywords
Learning, design, educational, staff, continuing, professional, development, cognitive domain, affective domain

Introduction
The eLearning Pedagogical Support Unit (EPSU) at The University of Hong Kong is a relatively small unit consisting of five dedicated staff: the Director, three instructional designers and a multimedia programmer. The unit is responsible for supporting eLearning initiatives across ten Faculties and it operates on a hub and spoke model with each of the Faculties being required by the University to have an eLearning Officer. Nine of the ten Faculties complied with this requirement. However, eight of the Faculties appointed individuals with a technical background. In other words, the eLearning Officers did not have the requisite knowledge to advise Faculties on how to make pedagogically sound use of technologies in teaching and learning. The exception was the Faculty of Education where the eLearning Officer was a relatively senior educator who taught two Masters Courses on the use of ICT in education.
As Director of the EPSU, it was the author’s responsibility to develop an eLearning Certificate Course to teach the eLearning Officers the necessary practical and theoretical skills to support their Faculties with their eLearning requirements. The author developed the eLearning Certificate Course during January and February 2012 and the course was offered over twelve weeks starting in March 2012. eLearning Officers from nine of the ten Faculties enrolled with one Faculty sending two eLearning Officers. A colleague from the Centre for the Enhancement of Teaching and Learning also enrolled giving a total of 11 enrolments.

At the time of writing, the author is revising the Certificate Course with a view to offering it for a second time. This has prompted renewed reflection on the course. Based on the experience of delivering the course for the first time, it is the author’s view that, broadly speaking, the attitude of the participants towards the course needs to be directly addressed. The reason for this is that the participants – nearly all of whom came from a technical background – were nominated by their Faculties to attend the Certificate Course. It was very evident that a number of participants did not want to attend and were doing so only because they had been nominated. Secondly, the participants lacked confidence for the duration of the course because they had no pedagogical background meaning that the subject matter was entirely new to them. Finally, participants lacked motivation early on in the course both because the Faculties had nominated them and because they did not attach any value to becoming instructional designers.

With these points in mind, the author now considers that the course should have taken the affective domain (Krathwohl, Bloom, & Masia, 1964) into consideration. First, the course needed to address participants’ values much more explicitly in order to help participants to internalise a sense of the worth of their new role. This would have helped to address the issue of a lack of relevance that was voiced by the course participants in the early part of the course. Secondly, participants lacked confidence in their abilities and more needed to be done to make them feel ready to take on their roles as instructional designers. Finally, the issue of motivation should have been addressed because the eLearning Officers were simply not motivated to take the course. Considerations in the affective domain will be combined with learning outcomes designed around the cognitive domain (Turk, 2002) resulting in a course that is designed from an holistic perspective to address knowledge gains and attitudes.

**Certificate Course Design**

The author was aware that the majority of course participants had no background in teaching and learning and that their perspective on technologies was likely to be a technical one since the participants were computer officers providing technical support within their respective Faculties. Secondly, many course participants did not have English as a first language. Finally, the course was of a limited duration and aimed to develop the eLearning Officers’ ability to provide practical hands-on course design support to teachers. For these reasons the author
did not draw on the seminal instructional design texts (Merrill, 2002; Tennyson, Seel, Dijkstra, & Schott, 1997) as they would have been too demanding for the participants. Rather, as we shall see below, the author decided to synthesise information from over ten years of instructional design practice and educational research in order to present participants with a manageable course that would enhance their practical and theoretical abilities.

The course was underpinned by a social constructivist philosophy in order to surface and change participants’ perspectives on technology (Tam, 2012; Vygotsky, 1978). The thinking behind taking this approach was that learning is a social affair and that participants would be enabled to progress through the course with the assistance of the facilitator and the support of fellow students. With this point in mind, the course was designed to have participants engage with the course content, with one another and with the course coordinator (Elloumi, 2004; Garrison, Anderson, & Archer, 1999; Miayzoe & Anderson, 2013; Moore, 1989). At the same time students were encouraged to interact with peers in order to develop instructional design knowledge and skills. Finally, the use of technologies was constructively aligned (Biggs, 1996, 1999, 2003) in terms of the model outlined by Jones (2007). This alignment is illustrated in Figure 1.

![Constructive alignment](image)

*Figure 1. Constructive alignment*

Learning activities support students in achieving the learning outcomes while assessment tasks provide for a measure of whether or not students achieve the learning outcomes. At the same time, technologies are employed to support students in their learning activities and/or to deliver/facilitate assessment tasks. Thus, technologies can be seen to either facilitate students achieving learning outcomes or support assessment tasks that measure whether students achieved the learning outcomes.

There were ten topics in the Learning course: (1) Orientation and Introduction to eLearning (2) Learning and Learning Domains (3) Technologies in Teaching (4) The Role of the Teacher in eLearning (5) Assessment in eLearning (6) Quality in
eLearning (7) Instructional Design Theory and Practice (8) Emerging Technologies and Cutting Edge eLearning (9) Connectivism, and (10) Being an Instructional Designer.

The topics were made available in Moodle and participants were asked to view the content, that is, the facilitator’s written perspective on the topic and a topical video, prior to attending a two-hour face-to-face session. The author delivered a brief presentation during each face-face-session and the presentation was followed by facilitated discussion on the topic for the week. After the face-to-face session participants were required to complete a key reading and to engage with a discussion forum activity. Each forum drew on the required reading and asked the participants questions about the topic for the week. The questions were deliberately crafted to enable participants to discuss and reflect upon eLearning as a way to enhance teaching and learning through making pedagogically principled use of technologies.

As an example, the aim of the first week was to orient participants to the concept of eLearning and to encourage them to think about using technologies to enhance and enrich teaching and learning. After attending the face-to-face session and engaging with the readings participants were required to answer the following discussion forum questions:

1. What, if any, experience do you have with the use of technologies in teaching and learning?
2. How does your experience fit with the model that this week’s reading suggests for making purposeful use of technologies in teaching and learning?
3. What recommendations would you make to someone who asked you how to make purposeful use of technologies in teaching?

Whilst each topic engaged participants with important eLearning principles and practices, the author was also concerned to scaffold (Vygotsky, 1978) participants to an in-depth understanding of what the course concepts would mean in their practice as eLearning Officers. In other words, the course needed to move participants beyond acquiring information to a point where the participants developed a pedagogical understanding of the use of technologies in teaching.

As part of the scaffolding process, participants were required to engage in a Wiki activity during Weeks 11 and 12, that is, the final two weeks of the course. The aim of the wiki exercise was to have participants reflect collaboratively on how the course might help them to meet the challenges and realise the possibilities of eLearning within their Faculties. The Wiki exercise was relatively unstructured and participants were free to decide how they wanted to approach the exercise. However, participants were required to draw on the content from each of the modules and to provide a representation – whether textual, visual or both – of what the various course concepts would mean for them in their day-to-day practices as eLearning Officers. The course coordinator advised that he would guide participants during the wiki exercise so that they might gain maximum
benefit from the course. This meant that the exercise was much more about knowledge gains than summative assessment.

**Certificate Course Engagement**

As noted, the Certificate Course was delivered over a twelve-week period. One participant withdrew in Week 1 citing the reason that the course focused on teaching / learning theory and was not therefore relevant for their Faculty role. Whilst only one participant withdrew the majority of the remaining participants also expressed the view that the course was not relevant to them. The reason for this was that they conceived of their roles as purely technical and had not been briefed by their Faculties on what it meant to take on the role of an eLearning Officer. The author – also course facilitator – managed this issue through encouraging discussion about instructional design and through encouraging participants to think about the role of technologies in enhancing teaching and learning. The author also explained to the participants that one of the aims of the course was in fact to bring them to see what it meant to be an instructional designer.

Participants engaged with the course even though they initially had misgivings about the relevance of the course to their Faculty roles. Evidence for engagement comes from the discussion forum postings. The author posted three discussion forum questions each week and participants were required to post at least one response to the three questions. Therefore, each participant had to post a minimum of ten times (1x10) during the course. Of those who eventually passed the course (n=8), the highest number of postings was 80 (Participant A). One (Participant B) posted 41 times with a second following closely with 40 posts (Participant C). The remaining participants (Participants D-H) posted less than twenty times with the lowest posting rate being eleven times (Participant D). This means that - with one exception - all participants did more than the minimum required. It should be remembered that these were eLearning Officers in full-time work who were initially skeptical about the course and so this level of engagement is significant.

The view rate for postings is interesting: Participant A (80 posts) viewed postings 330 times; Participant B (41 posts) viewed postings 383 times; and Participant C (40 posts), viewed postings 235 times. One student who only posted 14 times (Participant E) viewed posts 227 times. This suggests “lurking” activity with the student engaging with the posts but not posting to any significant degree. Another, Participant F, who made 14 posts viewed 218 posts which again suggests “lurking” activity. Lurking per se may or may not evidence engagement with the course as we would need to know what the lurking participants were doing. For example, were they reading the other posts in depth and creating their own perspectives on the course concepts? We do not have the answer to this question but we can say that the low number of posts by some participants does evidence a lack of interaction with their peers and with the course facilitator.

Looking at views and posts per se obviously only provides information on activity levels within the course. There is no necessary correlation between activity levels
and the quality or depth of engagement. For example, someone like Participant B might make 41 postings whilst displaying no understanding of the course material. This paper is not going to include an analysis of the discussion forum postings. However, in summary, the quality of the postings was mixed both between participants and across the different forums. For example, a discussion forum posting in Week 1 on constructive alignment and assessment practices elicited 26 responses all of which evidenced a depth of engagement with key concepts. The Week 2 learning domains forum evidenced a similar level of posting with a comparable quality. However the forum in Week 8 on cutting edge technologies elicited only 13 responses with no real depth of engagement i.e. participants did the bare minimum in terms of posting. That said, the course was coming to a close and participants had previously been active in the majority of the forums.

As previously stated, participants struggled at the beginning of the course to see the relevance of the course to their roles within the Faculties. It was therefore very gratifying to see what happened in the wiki activity. Participants had to work collaboratively to evidence an understanding of how the course related to their own work. After class discussion in Week 11, one student built on previous group work to produce a concept map showing the relationship between all the different course topics along with the relationship between the course topics and the role of eLearning Officers in the Faculties. For example, the map presented the three main learning theories – Behaviorism, Cognitivism and Constructivism – and showed how each theory might be used to inform the practice of eLearning Officers in their Faculties. The strengths and limitations of each theory were also outlined. This concept map provided the foundation for developing wiki pages that presented the challenges and opportunities in supporting Faculty with their eLearning needs.

The Certificate Course was evaluated using The University of Hong Kong’s standard evaluation questionnaire. The questionnaire contains 10 items and participants respond in terms of 5 point Likert scale ranging from “strongly agree” to “strongly disagree.” While there were nine (N=9) participants at the end of the course, eight (n=8) completed the questionnaire. The mean score for all items was greater than 4.0 indicating that participants were engaged with the course. In particular the mean for the item “I feel that I have achieved the learning outcomes and objectives for this course” was 4.0 and the mean for the item “The program inspired me to pursue further learning in teaching and learning” was 4.50. Most importantly, the mean for the statement “All things considered the program was effective in helping me to achieve the learning objectives and outcomes” was 4.62. Thus, if the course is judged in terms of student activity, engagement and the end of course evaluations then the course can be said to have been successful. Although the course can be judged to have been successful, more can be done to ensure that the issues or relevance, confidence and motivation are explicitly addressed.
Certificate Course Revisions

Bearing in mind the points made in the previous paragraph, the author is revising the learning objectives to include objectives around value, confidence and motivation. This will be a significant revision as compared with the original objectives which were concerned with gaining knowledge and skills. Examples of new learning objectives include:

- participants will be able to explain the value that they attach to their current role;
- participants will recognise the importance of the instructional designer role;
- participants will be able to explain what their new role means to them;
- participants will evidence the value they place on their new roles;
- participants will evidence changes in behavior as a result of the course; and,
- participants will evidence a commitment to their role as instructional designers.

In accordance with the theory of constructive alignment (Biggs, 1996, 1999, 2003) writing new learning objectives also requires new learning activities and new assessment activities.

In order to address the issue of perceived value of the course, current course materials are already being analysed from the point of view of the new learning outcomes. Mezirow’s (1990) work on “meaning perspectives” suggests itself as potentially useful. According to Mezirow (1990), “meaning perspectives refer to the structure of assumptions within which new experience is assimilated and transformed by one’s past experience during the process of interpretation” (p. 1, emphases added). In retrospect, the learning design might have made participants’ “meaning perspectives” visible through engaging them in reflection, that is, as “understood as an assessment of how or why we have perceived, thought, felt or acted” (Mezirow, 1990, p. 3). Appropriate reflective moments might also have been achieved through incorporating some key inquiry interactions (Dunlap & Sobel, 2007) to help participants achieve resolution as a result of their reflections. Reflective activities – such as explicating the value that participants place on their current role and articulating the value that they place on their potential role as eLearning Officers – could take place in a journal shared with the course facilitator and with other participants. This reflective journal could be a place to engage the eLearning Officers at a personally meaningful level (Shoffner, 2009). The reflective journal will be an assessed activity although the emphasis will very much be on the ePortfolio activity as a potentially transformative activity carried out for the duration of the course.
The third change to be made to the course will be the inclusion of an activity that requires participants to build a course in Moodle. This activity will be incorporated to address the issues of participants’ confidence levels. Ideally participants will work with a teacher to develop an “actual” course because this initiative will lead to deep and meaningful interactions with course content and with teachers (Dunlap & Sobel, 2007). In other words, the activity will be an authentic activity. This is important because there is a significant difference between building a “mock course” and a “real course.” For example, building a real course for a teacher involves interacting with a subject matter expert which is one of the most challenging aspects of instructional design (Campbell, Schwier, & Kenny, 2005). Participants will be required to put theory into practice through, for example, by aligning course objectives with activities and assessment, evidencing an understanding of the various learning theories, addressing issues of quality and incorporating additional technologies aligned with the course activities and assessment (Jones, 2007). They will be supported by the facilitator who will review the courses on a weekly basis in order to provide formative feedback. In this way participants should increasingly feel a sense of confidence in their abilities as instructional designers. The completed courses will form part of the summative assessment and it is hoped that completing the course building exercise will lead to a sense of intrinsic satisfaction on the part of participants.

The final issue that needs to be addressed is participants’ motivation. The ARCS (Attention, Relevance, Confidence, Satisfaction) model for motivation (Keller & Suzuki, 2004; Keller, 1999) synthesize components of the major motivational theories and presents a design framework for addressing motivational issues. Issues of relevance, confidence and satisfaction have been addressed through introducing an ePortfolio and by introducing a practical component to the course. Further consideration can be given to these aspects of the affective domain and these considerations can be informed by thinking about the different ways of gaining and maintaining participant’s attention (Dunlap & Sobel, 2007). For example, we can think about the activity of building a course and map it to the course content in such a way that participants are supported in practice problems through the readings that they undertake. As an example of a student activity, a discussion forum topic could suggest that the ADDIE (Analysis, Design, Development, Implementation and Evaluation) model for instructional design is useful but too proscriptive and linear to be of practical value. In contrast, the “Layers of Negotiation Model” allows for each stage in the design process to be revisited as and when required (Cennamo, Abell, & Chung, 1996). Participants could then be asked to critically reflect on the two models in the context of their own design work. The critical reflections would be posted to a discussion forum.

The previous discussion along with the example weeks (Weeks 1 and 2) in Appendix One have outlined how the eLearning Certificate Course will be revised to include new learning outcomes, new learning activities and a new form of assessment. The revised design is premised on the notion that participants can be supported in moving through the different “levels” of the affective domain to the point where they have internalised a new value system that includes valuing their
roles as eLearning Officers within the Faculties. Specifically, in the early stages of the course there is a need to address participants’ willingness to engage with the course content. This means making participants’ attitude towards the course visible and bringing participants to appreciate and value the role of an eLearning Officer. As the course progresses, the author will be concerned with participants’ responses to the learning activities and with the value they place on what they are learning. In this case the facilitator will need to monitor levels of engagement and, for example, engage with the reflective diaries to identify any potential problems with student engagement. From the mid-point of the course onwards the concern will be with participants re-organising their value system to the point where they internalise a new set of values that include valuing their roles as eLearning Officers for their Faculties. The focus here will very much be on building up participants’ confidence levels and inculcating a sense of satisfaction with participants’ achievements. This can be achieved through providing constructive formative feedback that focuses on the positive aspects of participant’s performance whilst also providing constructive criticism to help participants to improve.

Taking a holistic perspective on the course, it can be seen that participants will gain the requisite knowledge and skills through engaging with the learning activities based on the theory and practice of being an instructional designer. At the same time, the course will consistently address the question of the value that participants place upon their learning and their new role as eLearning Officers. In addition to the inclusion of an activity in which participants build their own course website, learning activities now revolve around participants’ reflections along with the formative feedback provided by the facilitator. There is also room to conduct summative assessments with respect to the affective domain, although we acknowledge that this can be more challenging than measuring knowledge gains (Buissink-Smith, Mann, & Shephard, 2011). Ultimately, if the course is successful, then we should witness a change in participants’ behavior in the workplace such that, for example, they advocate for eLearning and practice as instructional designers in their Faculties. This will be a critical measure of whether or not the course was successful (Guskey & Yoon, 2009; Guskey, 2000).

**Conclusion**

This paper has outlined the ways in which a professional learning course will be re-designed in order to take the affective domain into account. The revision addresses issues of relevance, confidence and value for participants. This approach recognises the need for job-embedded assistance (Guskey & Yoon, 2009) and value of “proximity to practice” (Penuel, Fishman, Yamaguchi, & Gallagher, 2007, p.928) in professional development. In other words, the participants need to work on “real” courses so they can engage with teachers and experience both the challenges and sense of satisfaction that can come from working as an instructional designer. The re-design of the course is a work in progress but the author already recognises that the course evaluations will need to change. In particular, there is a need to baseline different aspects of the affective
domain and to measure changes in perceived relevance, confidence and motivation. Evaluation instruments are available to measure, for example, motivation and confidence and the author is currently reviewing these in order to put in place appropriate evaluations for the Certificate Course (Hemmings & Kay, 2008; Pintrich, Smith, Garcia, & McKeachie, 1993). This incidentally provides a potentially interesting research direction that can help to inform future practices.

The proposed changes to the course have the potential to result in a course that addresses both the cognitive and affective needs of the participants. However, the course will not be a panacea for all the issues faced by participants. For example, the eLearning Officers are expected to take on extra duties without additional remuneration; this has an impact on their motivation that no course could redress. That said, strategies could be put in place to engage and motivate the participants. For example, the facilitator could emphasise the long-term employment prospects for instructional designers both in Hong Kong and overseas. A second issue outside of the control of the facilitator is the relative status of the eLearning Officers as compared with the teachers with whom they will be working. The eLearning Officers are relatively junior, technical staff members who have been perceived as fulfilling a certain technical support function. It is no easy matter to change the way that the eLearning Officers are perceived. However, the EPSU will be supporting the eLearning Officers through their transitional period and our hope is that this support will bring about changes in the way that the eLearning Officers are perceived by teaching colleagues. For example, senior EPSU staff can be present at meetings between eLearning Officers and teachers and provide practical support to eLearning Officers as they develop courses. If the instructional design process is successful, then teachers should begin to see the eLearning Officers differently. It will hopefully be a process from which everyone benefits.

References


Appendix One: eLearning Course Weeks 1 and 2

<table>
<thead>
<tr>
<th>Module/ Topic Learning Outcomes and Learning Activities</th>
<th>Participant Activities (What will participants do?)</th>
<th>Technology (How will you enable access, communication and collaboration?)</th>
<th>Resources (What materials or information will students draw on to complete the task?)</th>
<th>Facilitator’s Role (How will you support the students as they undertake the task?)</th>
<th>Assessment / Feedback (How will you assess and/or provide feedback on the participants work?)</th>
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<tbody>
<tr>
<td><strong>Week 1: Orientation to eLearning Outcomes:</strong> Define eLearning</td>
<td>Watch video on digital natives and digital immigrants. Attend face-to-face session and listen to mini-lecture on eLearning. Break into groups to discuss the potential of eLearning to enhance teaching and learning. Present summary of group discussion to class. Start reflective journal and answer questions on value placed on current role and potential value of instructional designer role.</td>
<td>Moodle site to deliver orientation materials. YouTube video on digital natives and digital immigrants. WordPress site for maintaining a reflective journal. Email to make direct contact with lecturer. Skype if synchronous communication is required.</td>
<td>YouTube video Facilitator input Peer support</td>
<td>Face-to-face lecture. Facilitate group discussion Comment on reflective journals Answer emails Skype where necessary</td>
<td>Review of reflective journals and provision of feedback using comment function in WordPress.</td>
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<tr>
<td>Module/ Topic Learning Outcomes and Learning Activities</td>
<td>Participant Activities</td>
<td>Technology</td>
<td>Resources</td>
<td>Facilitator’s Role</td>
<td>Assessment / Feedback</td>
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<td><strong>Week 2: Learning and Learning Domains</strong></td>
<td>Watch video on learning domains.</td>
<td>Moodle site to deliver orientation materials.</td>
<td>YouTube video</td>
<td>Face-to-face lecture.</td>
<td>Engage with discussion forums.</td>
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<tr>
<td><strong>Outcomes:</strong></td>
<td>Attend face-to-face session and listen to mini-lecture on designing for different types and levels of learning.</td>
<td>YouTube video on learning domains.</td>
<td>Facilitator input</td>
<td>Facilitate group discussion</td>
<td>Review of reflective journals and provision of feedback using comment function in WordPress.</td>
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<td>Critically discuss what we mean when we say that someone has learned something.</td>
<td>Group activity to design for different types and levels of learning.</td>
<td>WordPress site for maintaining a reflective journal.</td>
<td>Peer support</td>
<td>Comment on reflective journals</td>
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<td>Critically discuss how we might know when someone has learned something.</td>
<td>Present summary of group discussion to the class.</td>
<td>Email to make direct contact with lecturer.</td>
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<td>Answer emails</td>
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<td>Apply the two answers to the use of technologies in teaching and learning.</td>
<td>Answer discussion forum questions.</td>
<td>Skype if synchronous communication is required.</td>
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<td>Skype where necessary</td>
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<tr>
<td>Explain the importance of the instructional designer role in designing teaching and learning.</td>
<td>Write reflective journal entry on the perceived importance of instructional designers in designing teaching and learning.</td>
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<td>Justify the need for instructional designers in designing online learning.</td>
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