International Journal for Academic Development
Vol. 13, No. 1, March 2008, 5–16

A dual-mode university instructional design model for academic development

Michael Power*

Department of Studies on Teaching & Learning, Université Laval, Quebec City, Canada

(*Received August 2006; final version received July 2007*)

Online learning is expanding rapidly today in many Canadian universities. Fuelled by Canada's unprecedented broadband access, online teaching is creating new challenges for faculty and new responsibilities for educational developers. Although there is adequate literature with regard to faculty thinking about course planning in general, there are few publications on how they actually plan for online teaching. The purpose of this applied research study was to develop an instructional design model adapted to the needs and resources of faculty at a dual-mode university (offering courses both on-campus and online). Using a case study methodology, this project documented the prototype-building, its implementation and gradual modification in response to faculty feedback. Results indicate that faculty preferred a more traditional, discipline-based course design model for online course planning and shunned high-level instructional design, opting for lighter-weight, dialog-rich instructional design emphasizing real-time, faculty–student interaction.

De nos jours, l'apprentissage en ligne gagne rapidement du terrain dans plusieurs universités. Et l'apprentissage en ligne amène de nouveaux défis pour les enseignants tout comme de nouvelles responsabilités pour les conseillers pédagogiques. L'objectif de cette recherche appliquée était de développer un modèle de design pédagogique qui est adapté aux besoins et aux ressources des enseignants provenant d'une université dont les cours sont dispensés à la fois sur le campus et en ligne. A l'aide de la méthode des études de cas, cette recherche a documenté le développement d'un prototype, sa mise en oeuvre et sa modification graduelle en réponse au feedback obtenu auprès des enseignants. Les résultats indiquent que les enseignants préfèrent un modèle de design pédagogique davantage traditionnel, axé sur la discipline, pour la planification des cours en ligne et qu'ils ont évité le design pédagogique de haut niveau.

Keywords: faculty development; instructional design; online learning

Introduction

Increasing numbers of universities are using information and communication technology to offer courses as well as entire programs on the Web (Green, 2005; Bates, 2005). As universities implement outreach policies aimed at diversifying delivery of higher education to new and returning students, online learning is proving to be a cost-effective way of reaching students both off- and on-campus (Bullen & Janes, 2007; Pittinsky, 2003). In this respect, traditional universities are becoming *de facto* dual-mode universities, i.e. universities offering courses both on-campus and online (King & McCausland, 2000; Taylor, 2001).

In order to implement online learning, universities in many countries, such as Canada, have developed a cadre of specialized faculty and professionals who assist university professors in the

*Email: michael.power@fse.ulaval.ca

ISSN 1360-144X print/ISSN 1470-1324 online

DOI: 10.1080/13601440701860185
http://www.informaworld.com

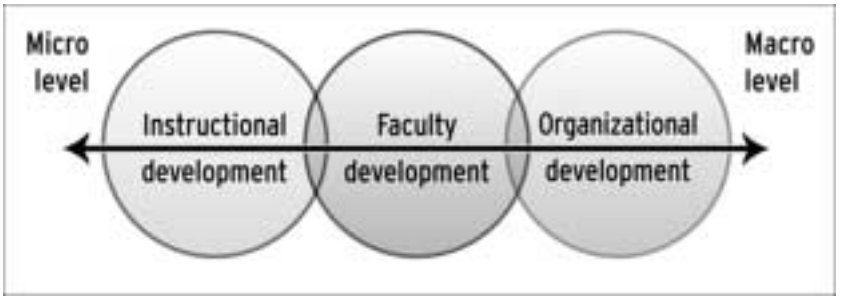

Figure 1. A continuum of responsibilities among educational developers in higher education.

process of converting on-campus courses into online ones. They are the educational developers (IJAD, 2005). Professional Organizational Development Network in Higher Education (POD) (2007) divides the field of educational development into three general areas, 'faculty development, instructional development, and organizational development'. These areas of responsibility assumed by educational developers may be seen as related and intersecting fields on a continuum (Figure 1), going from the 'micro-level' (such as the instructional design of individual courses) to the 'macro level' (such as strategic or curriculum planning). The present study is located at the micro-level and involves instructional design work carried out by an educational developer in conjunction with faculty members who were developing online courses. It should be noted that, within the university system where this study was conducted, educational developers are rarely faculty members (staff in the UK), but rather professional faculty support staff. Within this group, virtually no distinction is made between educational developers and instructional designers; all are considered faculty support staff and are tasked according to individual strengths and interests.

Context

Challenged to change or disappear (Drucker, 1997), universities have adopted varied strategies in the design of online learning (Anderson & Eloumi, 2004; Moore & Kearsley, 2005). There is a fair amount of literature regarding how faculty think about their teaching and plan learning in general (Fink, 2003; Hativa & Goodyear, 2002; Macdonald & Wisdom, 2002; Prégent, 1994; Saroyan & Amundsen, 2004) but there is actually little empirical research on how they plan their online courses (Goodyear, 2005; Kinuthia, 2004; Power, 2007). In terms of support for course planning, some universities have adopted a reduced version of the distance education university-inspired *course team* approach (Mason, 1979), i.e. the *lean team* (Moore & Kearsley, 2005). With this approach, faculty migrate to technology, designing courses while being assisted by specialized educational developers (termed 'instructional design specialists' by POD (2007) who guide them through an instructional design process, assisted by a technical support team. These courses are then delivered online, usually asynchronously, by the faculty members themselves or by tutors (Allen & Seaman, 2006; Hiltz & Goldman, 2005).

Other universities, in attempting to smooth the transition for faculty from on-campus to online teaching while also trying to reduce the prohibitive cost of high-level instructional design, have recently implemented initiatives whereby technology migrates to faculty. This approach has the advantage of providing faculty with a sense of continuity in their teaching practice, as characterized by oral presentation and spontaneous interaction with students (Anderson, Beavers, Vandegrift & Videon, 2003; Keegan et al., 2005). In these universities, course delivery occurs online in a real-time, virtual classroom environment, mimicking the on-campus experience (McVay-Lynch, 2002;

Sauvé et al., 2005). This synchronous approach to online learning is but a recent manifestation of what we term the academic continuity approach as exemplified by earlier solutions such as site-to-site videoconferencing, satellite television, audioconferencing, etc. (Daniel, 1996; Collis & Knezek, 1997). Continuity in practice is important when transitioning between teaching modes because, according to Larreamendy-Joerns & Leinhardt (2006), 'the major threat to successful college online education is the divorce of instructional design and implementation from mainstream academics…' (p. 593).

As the move to online learning is gathering momentum, and as universities make critical choices about how best to support faculty, there is a need to know more about how instructional design is being integrated into course preparation by specialized educational developers (Kenny, Zhang, Schwier & Campbell, 2005). Although there are hundreds of models of instructional design, the vast majority are derivatives of the same basic model typified by the acronym 'ADDIE' which stands for the five steps in this model: analyse–design–develop–implement–evaluate (Branson, 1975; Dick, Carey & Carey, 2005). The ADDIE model was originally developed as a means of producing predictable and cost-effective training results in large organisations such as the US military and major corporations (Reiser, 2001). It was adopted by distance education universities which function in a similar, industrial-like, fashion to these organisations (Keegan, 1994). However, emerging dual-mode universities still generally function according to the traditional university model whereby faculty plan and deliver their own courses and where '…instructional design practices had a minimal impact …' (Reiser, 2001, p. 62).

Given the stakes in this high-cost, high-venture arena (Drucker, 1997; Katz & Associates, 1999), the search for an appropriate instructional design model for online learning in a dual-mode university is underway. In an attempt to contribute to this search, this study asked the following question: which instructional design model is the most appropriate for faculty-based, online learning design and delivery at a dual-mode university?

Conceptual framework

The conceptual framework used in the course of this study was based mainly on two sources: firstly, the 'theory of transactional distance' (Moore, 1993). Secondly, the 'congruency principle', as developed by Power (1996, 2005), was based on work by Gagne, Briggs & Wager (1988), as adapted by Brien (1992) and Prégent (1994).

The theory of transactional distance

The theory of transactional distance posits that a fundamental problem in distance education is 'not simply a matter of geographic distance' (Moore, 1993, p. 223) between teachers and students, but rather the pedagogical distance in their transactions or exchanges as well as the quality of their dialog (Moore, 1993). Moore recognizes that some degree of transactional distance naturally exists in any pedagogical transaction, the actual degree of which may depend on the individuals involved. Nonetheless, in recognizing the specificity of distance education and the higher likelihood of there existing some degree of transactional distance, Moore emphasizes the use of dialog and structure as tools to be used to alleviate transactional distance in course design and delivery and he identifies learner autonomy, or the lack thereof, as a gauge for their use (Moore, 1990, 1993). This means that greater degrees of learner autonomy may translate into a need for lesser levels of structure and dialog. In light of Moore's theory, dual-mode universities face the challenge of deciding exactly what levels of dialog and structure are necessary in courses delivered online, this given the relative lack of a proven model for dual-mode universities (Power, 2005).

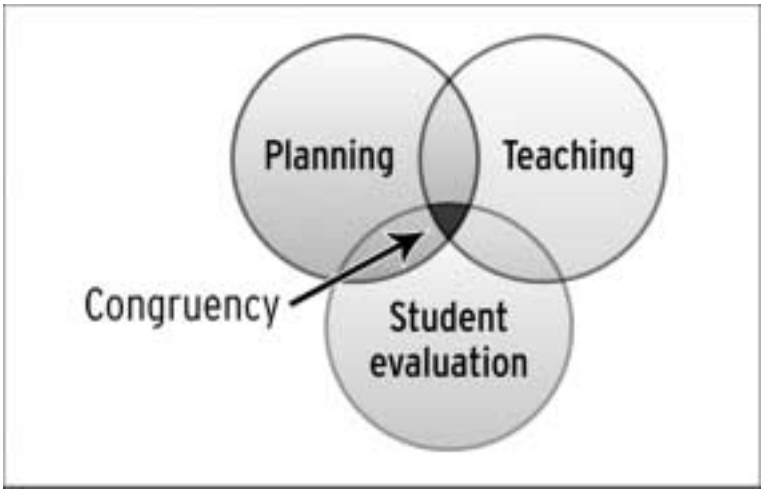

Figure 2. Pedagogical functions.

The congruency principle

Power's congruency principle (Power, 1996) identifies three functions as pedagogical acts carried out by the majority of faculty members (see figure 2): (1) Course planning activities that occur before course delivery (including the planning of teaching and learning support and assessment activities that appear in the course syllabus); (2) Teaching & learning support activities that occur during course delivery, and (3) Evaluation activities, related to evaluating student performance, which occur during course delivery. The application of the congruency principle to academic development requires that faculty consciously develop patterns of continuity of thought and action throughout their course planning, course delivery and student assessment activities. The congruency principle posits that the greater the overlap between the pedagogical functions of a professor, the greater the degree of congruency in a given course as well as the greater probability of optimal student performance (Power, 1996).

Based on this conceptual framework of instructional design theory and actual faculty course planning practices, work then began on identifying the most appropriate steps to be taken to accelerate online course design.

Methodology

The following methodology was adopted to carry out this study. The steps followed were those of a developmental research study (Richey, Klein & Nelson, 2004; Van der Maren, 1998) using a case study-based, heuristic approach (Berg, 2001; Leedy & Ormrod, 1999; Yin, 1994). After the requisite literature review was carried out and the initial development phases for the model were identified, the sample population was selected, composed of 44 individual faculty members. From this group, 10 cases were documented in-depth over a period of four years. The sample size was determined according to standard data saturation techniques (Berg, 2001; Bogdan & Biklen, 2006) based on participants meeting the following three criteria:

(1) they were full-time professors at an emerging dual-mode university;
(2) they were preparing one of their courses for off-campus delivery;
(3) they accepted to implement the proposed model.

Actual participant characteristics were as follows: there were five males and five females; three participants were assistant professors, three were associates professors and four were full professors. Academic disciplines included Arts, Education, Languages and Law. For seven participants, the reason to engage into online teaching was organisationally motivated and for three, it was personally motivated. Three had a month or less to prepare their courses before delivery, three had between 2 and 4 months and four had more than 4 months. Seven had little knowledge of instructional design while three had some knowledge of it. Eight participants had no experience with distance educational and two had some basic experience. On average, there were 6.7 working sessions per faculty member.

Data generated were from three sources:

(1) Faculty and designer exchanges which took place during working sessions were collected in the 'designer's log' (Power, in press). For each working session of each of the 10 case studies, the instructional designer carefully took detailed notes during and after the session, identifying course design work undertaken, discussions engaged, problems encountered, solutions proffered and results obtained, as well as personal reflections on the emerging prototype model and overall design process.
(2) Post-design, semi-structured interviews were conducted with the 10 faculty members based on three aspects: their design experience, the results of the process and their anticipation of future design work. Complete verbatim transcriptions were generated from such.
(3) Faculty-produced artefacts (didactic materials) were collected throughout the study, namely course syllabi, individual and team assignments and activities, PowerPoint presentations, reading materials, course notes, etc.

Data analysis was iterative in nature (Kohn & Nègre, 1991). As input from the three aforementioned sources was recorded, specific, triangulated input directly related to prototype development was analyzed. Impact on prototype development was synthesized and subsequently integrated into prototype improvement.

In choosing this applied research approach, the goal was to promote a form of naturalistic inquiry in which social agents (the faculty members and the instructional designer) would constitute the principal sources of information. The description of work accomplished jointly by faculty and the designer, and the analysis of their respective experiences, allowed for the precise identification and description of the instructional design process as it unfolded and the model's degree of responsiveness to faculty needs as it was iteratively implemented and adapted to a dual-mode university context.

Results

Following a comparative components analysis, the following phases were retained for the initial model as being theoretically sound and representative of actual faculty course planning practices at the dual-mode university where the study was conducted:

(1) *Analysis* (student needs assessment, course & program requirements, faculty interests, etc.)
(2) *Module-Building* (Web-based course-related resource material i.e. readings, etc.)
(3) *Teaching Activities Development* (in-class activities)
(4) *Learner Support Activities Development* (additional, individualized resources for purposes of formative evaluation)
(5) *Student Performance Assessment Instruments Development* (various testing instruments for purposes of summative evaluation)
(6) *Items for Ongoing Improvement* (the 'wish list', i.e. course resources, etc. to be developed at a later date)

Table 1. Version 1 of the prototype with the original design phases set in a grid.

Week	1	2	3	4	5	6
	Analysis	Module-building	Teaching activities development	Learner support activities development	Evaluation instruments development	Items for ongoing improvement

Results from the study were reintegrated into the prototype as they emerged during weekly working sessions. Ongoing designer–faculty interaction made it possible to document desired improvements to the prototype as it was being used to design courses. Indeed, the richest sources for prototype improvement came from faculty feedback and instructional designer reflections which were incrementally integrated into the prototype-building process as it occurred.

In Case 1, the faculty member felt that the initial phases of the model were 'rigourous, demanding' and 'very cumbersome' and that the process was 'arduous, at times even embarrassing'. From the designer's log: 'The phases, as they were identified, did not seem to provide faculty with what they wanted, which was some kind of a worksheet or a grid'. This and other feedback led the designer to set the phases into the working grid presented in Table 1.

Feedback from Case 2 resulted in the term 'phases' being replaced by the term 'categories' which proved to be more faculty-recognizable and faculty task-related and which better represented actual components to be produced when designing a course. Hence, further feedback led to the category *Analysis* being dropped from the grid because it was felt, by that faculty member, that it was simply not helpful as a part of the model grid. Moreover, the designer felt that it did not represent, as such, an actual course component category but was rather the first and most essential phase of the overall design process. As a result, in-depth analysis, both of learner and program needs as well as faculty preferences, preceded the actual design process, although its outcome was directly integrated into the course component categories retained (contents of course modules, exercises, activities, etc.).

As feedback started coming in from Case 3, it became evident that further changes in the grid were required:

> I want to maximize the impact of my reading material by adding exercises (like Q&R sheets) that are directly linked to my course objectives; that should help my students get more out of the readings … I need a template to develop these exercises, something like an automated exercise tool which I could adapt to any of the individual readings….

Thus, the *Module-Building* phase was replaced by two categories, *Objectives* and *Content*, the former emphasizing faculty recognition of the need to specify set, minimal learning objectives in order to guide content development and to establish acceptable student performance thresholds when designing assessment instruments, and the latter reflecting faculty concern over prioritizing the planning of course material.

Major changes also occurred in the last four phases which were prompted by a realisation of the need for increased student-centeredness in design, inspired by Janovy (2003) who, in just a few words, seems to define the very essence of instructional design '…course design consists primarily of the activities you ask your students to perform' (p. 67). With regard to *Teaching Activities*, faculty seemed to experience difficulty in defining and developing such activities and they found it more useful to identify first who would actually be involved in these activities. They also experienced difficulty in distinguishing between *Teaching Activities Development* and *Learner Support Activities Development.* Finally, they experienced confusion when having to undertake what they perceived as yet a further and separate task – that of *Evaluation Instruments*

Development. Thus, these original phases were all replaced by two newly-emerging categories: that of *Individual Activities* and *Team Activities*. This reconceptualisation actually solved a number of problems: (1) it avoided the unnecessary and purely theoretical distinction between *Teaching Activities* and *Learner Support Activities*; (2) it allowed faculty to design assignments according to a learning hierarchy, i.e. individual activities feeding team activities; (3) it allowed faculty to specify what activities they wanted students to complete prior to coming to class; and (4) it allowed them to integrate assessment instructions and criteria directly into the activities being developed. Therefore, as faculty began identifying activities according to individual or team activities, the overall design of their courses rapidly emerged.

This complete reconceptualisation of the model continued throughout Cases 3 and 4 with the addition of a *Plenary Session Activities* category which effectively replaced the *Teaching Activities Development* phase by focussing on the description of activities to be conducted during the weekly, videoconferencing-based, site-to-site virtual classroom. Overall, faculty were satisfied with this remodeled grid as it focussed directly on familiar tasks which they felt competent in completing. 'I realized that it was reassuring to plan the scenario for each week of classes. Overall, it makes for less work and my students are reassured too; they know what to expect'. Consequently, fairly early in this study, the prototype had undergone its most significant transformation as it rapidly evolved into a working, course development grid which provided, on one page, the overall look and feel of a course. It thereby became known as the 'working grid' prototype (see Table 2).

A further refinement of the prototype dealt with setting parameters for each week of class. For instance, some faculty found that students had difficulty completing both an individual activity and a team activity in the same week so they began alternating them. They also began systematizing and standardizing activity guidelines for both individual and team activities, thereby promoting greater learner autonomy and enhancing student activity completion rates. As a result, faculty began developing 'individual work sheets' and 'team work sheets' which described in detail the work to be completed by individual learners or team members. For instance, some faculty members would have students read weekly prescribed texts and would provide them with both closed- and/or open-ended questions to be answered. A subsequent team activity required that students discuss their answers to these questions while completing another series of open-ended questions, allowing them the opportunity to negotiate meaning and to categorize their results.

By this point, as Case 5 was beginning, the model-as-grid had gone from being simply a planning tool to becoming an actual course syllabus grid. Henceforth, it was dubbed the *Horizontal Course Syllabus Grid* which emerged as an innovative departure from the traditional course syllabus design model. Indeed, the new appellation highlighted a contrast with the traditional course syllabus. The latter, usually vertical in nature, presents course information in such a way that links are not always obvious between objectives, content, activities, calendar of events and evaluation instruments. The main difference between the horizontal course syllabus grid and the traditional course syllabus resides in the way the course syllabus is designed, as it displays the various course components on a horizontal plane. Faculty were thus required to identify content, individual and/or team activities and/or plenary session activities for each and every objective, thereby demonstrating by what means each specific objective was to be reached. By doing so, faculty established concordance between each of the components in their course syllabi:

Table 2. The 'working grid' prototype.

Week	Objectives	Content	Individual activities	Team activities	Plenary session activities
X					

> The horizontal grid allowed me to see the link between each objective and each of the required readings. As a result, I decided to drop some of the articles which were interesting but non essential. … I ended up keeping only those readings which allowed students to meet the weekly objectives.

The Case 4 faculty member found that using the Horizontal Course Syllabus Grid greatly improved her course planning:

> …I found the horizontal syllabus relevant, whether I'm teaching on-campus or at a distance. It is actually independent of how I'm teaching. …For instance, right now, I'm working on a course which I'll be giving with a colleague at another university but we didn't use the horizontal grid to plan it. I was unable to participate in the initial planning phase and now I'm having a little trouble understanding the rationale used…. With the horizontal syllabus, you can see all the sequencing (*sic*) from one week to the next… …. Now I'm stuck; I only have a vague idea of what we'll be doing each week.

In light of the use to which the grid was being put, it was expanded during Cases 6 and 7 to include information typically found in any well-written course syllabus, such as course identification, faculty coordinates, as well as a series of hyperlinks (in the form of icons) for direct access to student resources. Finally, the *Plenary Session* category was renamed *Weekly Class* as yet another attempt at making the grid more faculty-friendly. Other minor adjustments continued to be made to the grid throughout Cases 7–10 as a result of integrating feedback from the faculty working with it, namely a sequencing protocol with regard to the writing of main objectives and specific objectives, what became known as 'vertical design' as opposed to 'horizontal design' and, secondly, a protocol aimed at systematizing activities development for weekly classes. This became necessary as the university administration, in an attempt to lower course delivery costs, asked the technical team to begin experimenting with a Web-based, virtual classroom system which, although being more cost-effective, lacked the video component to which faculty had grown accustomed. Faculty reacted in two ways to this new environment: on the one hand, they enjoyed direct access from their office or home to a more flexible online learning environment yet, on the other, they disliked the resulting increase in workload. The increase was a direct result of the loss of the video component and the ocular contact which they had enjoyed with their learners. To compensate for this loss, they developed activities and visual material they could display on-screen during their weekly classes. Figure 3 presents the final version of the 'Horizontal Course Syllabus Grid' (Power, 2007).

Discussion

The results of the present study indicate that the conceptual framework retained for this study was instrumental in the iterative adaptation of the final model. Indeed, in reference to the theory of transactional distance (Moore, 1990, 1993), the Horizontal Course Syllabus Grid is structurally robust while being designed to include numerous opportunities for dialog. Learner autonomy is addressed by means of a pyramid-like, graduated approach to learning whereby individual learning activities form the base, team activities the mid-section, culminating in faculty-led plenary sessions at the top (Power, 2007).

The other source of the conceptual framework – the congruency principle (Power, 1996, 2005), emphasizing an overlap between planning, teaching and student evaluation activities – influenced prototype development by adding the horizontal feature to the course syllabus grid. This required that faculty plan their courses by addressing correspondence issues between objectives, content and individual, team and plenary session activities.

Although faculty initially found course design for online delivery more time-consuming than for on-campus delivery, they quickly realized that the materials and resources developed would serve them well in teaching both on-campus and online. The design model was thus adopted by faculty because it took into account their prior course planning practices and was adapted to their principal limit – time. It was also observed that initial university administration expectations as

Figure 3. The Horizontal Course Syllabus Grid (reproduced with permission from Power, 2007).

per online course design outcomes – that is, high-level instructional design translating into structure-intensive, stand-alone asynchronously-delivered, didactic material-based courses – never completely materialized. Instead, faculty limits as per availability and professional preferences resulted in lighter-weight instructional design and campus-like, dialog-intensive teaching and learning opportunities, as witnessed by the adoption of a synchronous, online, desktop audioconferencing-based delivery system, effectively simulating on-campus, student–faculty interaction.

Conclusion

Despite the limits inherent in a study with a limited sample, this model may enable designers and faculty in dual-mode universities to understand better the instructional design process as it

applies to their particular circumstances which, in the context of the USA, are likely somewhat similar to those encountered in this study. Moreover, this research may facilitate the adoption of policies and practices which optimize the expansion of online learning within dual-mode universities.

A wider application of this model to educational development requires more research in the field, pertaining namely to faculty pedagogical and technical support and to learner autonomy levels. This will enable developers to set appropriate levels of structure and dialog for the courses they assist in designing and in embedding appropriate resources and activities in online courses. It also suggests that faculty development efforts may well be deployed in focusing on higher levels of congruency in online course development.

Notes on contributor

Thomas Michael Power, PhD is an Assistant Professor of Education & Technology at the Faculty of Education, Laval University in Quebec City, Canada. He is a former instructional designer and his research interests include faculty development, instructional designer practice, online learning and synchronous mode learning environments.

References

Allen, I.E., & Seaman, J. (2006). *Growing by degrees: Online education in the United States, 2005* (Southern ed). Needham, MA: The Sloan Consortium. Retrieved September 4, 2006 from http://www.sloan-c.org/publications/survey/pdf/growing_by_degrees_southern.pdf

Anderson, T., & Elloumi, F. (2004). *Theory and practice of online learning.* Athasbasca, AB: Athabasca University. Retrieved August 12, 2006 from http://cde.athabascau.ca/online_book/

Anderson, R., Beavers, J., Vandegrift, T., & Videon, F. (2003, November). *Videoconferencing and presentation support for synchronous distance learning.* Paper presented at the 33rd ASEE/IEEE Frontiers in Education Conference, Reno, NV, USA.

Bates, A.W. (2005). *Technology, e-Learning and distance education.* London & New York: Routledge.

Berg, B.L. (2001). *Qualitative research methods for the social sciences* (4th ed.). Boston, MA: Allyn and Bacon.

Bogdan, R., & Biklen, S.K. (2006). *Qualitative research for education: An introduction to theory and methods* (5th Ed.). Boston: Allen and Bacon.

Branson, R.K. (1975). *Interservice procedures for instructional systems development: Executive summary and model* (Document Nos. AD-A019 486 to AD-A019 490). Tallahassee, FL: Florida State University, Center for Educational Technology.

Brien, R. (1992). *Design pédagogique: Introduction à l'approche de Gagné et de Briggs.* [Instructional design: Introduction to the Eagné and Briggs approach]. Ste-Foy, QC: Les Éditions St-Yves.

Bullen, M., & Janes, D. (Ed.) (2007). *Making the transition to e-Learning: Strategies and issues.* Hershey, PA: Information Science Publishing.

Collis, B., & Knezek, G. (1997). *Teaching and learning in the digital age: Research into practice with telecommunications in educational settings.* Denton, TX & Eugene, OR: TCET and ISTE (co-publishers).

Daniel, J. (1996). *Mega-universities and knowledge media: Technology strategies for higher education.* London: Kogan Page.

Dick, W., Carey, L., & Carey, J.O. (2005). *The systematic design of instruction* (6th ed.). New York: Allyn and Bacon.

Drucker, P. (1997, March 10) Universities won't survive. *Forbes:* 14–18.

Fink, D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses.* San Francisco, CA: Jossey-Bass.

Gagne, R.M., Briggs, L.J., & Wager, W.W. (1988). *Principles of instructional design* (3rd ed.). New York: Holt, Reinhart and Winston.

Goodyear, P. (2005). Educational design and networked learning: Patterns, pattern languages and design practice. *Australasian Journal of Educational Technology. 21*(1), 82–101.

Green, K. (2005). *National survey of information technology in US higher education.* Encino, CA: Campus Computing.

Hativa, N., & Goodyear, P. (2002). *Teacher thinking, beliefs and knowledge in higher education.* Dordrecht, The Netherlands: Kluwer Academic Publishers.

Hiltz, S.R., & Goldman, R. (Eds.) (2005). *Learning together online: Research on asynchronous learning networks.* Mahwah, NJ: Lawrence Erlbaum.

IJAD (2005). The International Consortium for Educational Development in Higher Education – ICED. *International Journal for Academic Development, 10*(1), 71–73.

Janovy, J. Jr. (2003). *Teaching in Eden: Lessons from Cedar Point.* London: Routledge Falmer.

Katz, R.N. (Ed.) (1999). *Dancing with the devil: Information technology and the new competition in higher education.* San Francisco, CA: Jossey-Bass, Inc.

Keegan, D., Schwenke, E., Fritsch, H., Kenny, G., Kismihok, G., Biro, M., et al. (2005). Virtual classrooms in educational provision: Synchronous elearning systems for European institutions. Retrieved April 12, 2007, from http://www.fernuni-hagen.de/ZIFF/synchronous.pdf

Keegan, D. (1994). *Otto Peters on distance education: The industrialization of teaching and learning.* London & New York: Routledge.

Kenny, R. F., Zhang, Z., Schwier, R.A., & Campbell, K. (2005). A Review of what instructional designers do: Questions answered and questions not asked. *Canadian Journal of Learning and Technology, 31*(1),.

King, B., & McCausland, H. (2000). Distance education in dual mode universities. In V.V. Reddy & S. Majulika (Eds.) *The world of open and distance learning* (pp. 399–416). New Delhi: Viva Books.

Kohn, R.C., & Nègre, P. (1991). *Les voies de l'observation. Repères pour les pratiques de recherche en sciences humaines* [Ways of observing. Tips for the practice of research in the humanities]. Paris: Nathan.

Kinuthia, W. (2004). *Impediments to faculty engaging in web-based instruction: Clarification of governing policies.* Paper presented at the Association for Educational Communications and Technology Conference, Chicago, IL, October (ERIC Document Reproduction Service No. ED485016).

Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of Educational Research, 76*(4), 567–605.

Leedy, P.D., & Ormrod, J.E. (1999). *Practical research: Planning and design* (7th ed.). Colombus, OH: Prentice-Hall.

MacDonald, R., & Wisdom, J. (Eds.). (2002). *Academic and educational development: Research, evaluation and changing practice in higher education.* London: Kogan Page.

Mason, J. (1979). Cooperation in course teams at the Open University. In R. Cox (Ed.), *Cooperation and choice in higher education* (pp. 53–63). London: University of London Teaching Methods Unit.

McVay-Lynch, M. (2002). *The online educator: A guide to creating the virtual classroom.* London and New York: Routledge-Falmer Studies in Distance Education.

Moore, M.G., & Kearsley, G. (2005). *Distance education: A systems view* (2nd ed.). Belmont, CA: Wadsworth.

Moore, M.G. (Ed.) (1990). *Contemporary issues in American distance education.* Oxford, UK: Pergamon Press.

Moore, M.G. (1993). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. 22–38). London & New York: Routledge.

Pittinsky, M.S. (2003). *The wired tower – perspectives on the impact of the internet on higher education.* Upper Saddle River, NJ: Financial Times Prentice Hall.

POD – Professional Organizational Development Network in Higher Education. (2007). *Ethical Guidelines* and *Definitions* Sections. Retrieved April 22, 2007, from http://www.podnetwork.org/development/ethicalguidelines.htm and http://www.podnetwork.org/development/definitions.htm.

Power, M. (1995). La congruence, un principe fondamental dans la planification de l'enseignement [Congruency, a fundamental principle in designing instruction]. In *Actes de Colloque de l'Association International de Pédagogie universitaire* [the International Association for University Teaching] (AIPU) (pp. 241–246).

Power, M. (2005). *Le design pédagogique dans un contexte de bimodalisation de l'enseignement supérieur: une étude multi-cas* [Instructional design in the context of hybrid university teaching: a multi-case study]. Unpublished doctoral thesis, Université Laval, Quebec, Canada. Retrieved from http://www.theses.ulaval.ca/2005/23258/23258.html

Power, M. (2007) From distance education to e-learning: A multiple case study on instructional design problems. *E-Learning, 4*(1), 64–78.

Power, M. (2008). *Le concepteur pédagogique réflexif: un journal de bord* [Creating the reflective instructional designer]. Athabasca, AB: Athabasca University Press.

Prégent, R. (1994). *Charting your course: How to prepare to teach more effectively.* Madison, WI: Magna Publications, Inc.

Reiser, R. A. (2001). A history of instructional design and technology: Part II: A history of instructional design. *Educational Technology Research & Development, 49*(2), 57–67.

Richey, R.C., Klein, J., & Nelson, W. (2004). Developmental research: Studies of instructional design and development. In D. Jonassen (Ed.), *Handbook of research for educational communications and technology* (2nd ed.) (pp. 1099–1130). Bloomington, IN: Association for Educational Communications & Technology.

Saroyan, A., & Amundsen, C. (2004). *Rethinking teaching in higher education.* Sterkling, Virginia: Stylus Publishing.

Sauvé, L., Villardier. L., Probst, W., Boyd, G., Kaufman, D., Sánchez-Arias, et al. (2005). *Playing and learning without borders: A realtime online play environment.* Paper presented at the International DiGRA Conference: 'Changing Views – Worlds in Play', Vancouver, Canada, 16–20 June.

Taylor, J.C. (2001, June). *5th Generation distance education: DETYA's Higher Education Series* (Report No. 40): DETYA.

Taylor, J.C. (2001). *5th generation distance education: DETYA's higher education series.* Report No. 40. Canberra, Australia: DETYA.

Van der Maren, J.M. (1998). *La recherche pédagogique. Introduction aux recherches appliquées en éducation* [Pedagogical research: Introduction to applied research in education]. Montréal, Canada: Presses de l'Université de Montréal.

Yin, R.K. (1994). *Case study research, design and methods.* (2nd ed.) Thousand Oaks, CA: Sage Publications.