

# Education for a Digital World

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ADVICE, GUIDELINES, AND EFFECTIVE PRACTICE  
FROM AROUND THE GLOBE

## **Education for a Digital World: Advice, Guidelines, and Effective Practice from Around the Globe**

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# Chapter Abstracts

## Part 1: The Impact of Instructional Technologies

### EMERGING TECHNOLOGIES IN E-LEARNING

*Dr. Patricia Delich, Kevin Kelly, and Dr. Don McIntosh*

Emerging technologies can have a far-reaching effect on how teachers teach and learners learn. The ability to harness these technologies in the design of online classrooms can impact the engagement of teaching and learning by creating more options for learners to connect with course content as well as to other learners. This chapter identifies several emerging technologies, describes how they will impact education, and explores the challenges that could arise due to the nature of current technology adoption models in education.

### VIRTUAL DESIGN STUDIOS: SOLVING LEARNING PROBLEMS IN DEVELOPING COUNTRIES

*Dr. Kris Kumar*

Emerging technologies are moving the leading economies forward and, at the same time, enabling the developing world to leapfrog from their current status straight into the forefront of development. If they do not catch up with fast-growing potential technologies, the digital divide may leave them further behind than ever before! This chapter highlights the important role upcoming instructional technologies can play in Africa, Asia and elsewhere through the innovative use of Internet, Podcasting, Skype communications and desktop audio and videoconferencing. Studios for product design and architectural design need to be more than normal classrooms; they must provide design and drawing and modelling infrastructure, pin-up boards, and an inspirational environment. Connected global digital design studios can provide the digital equivalent of traditional studios, thus enabling global interactive and collaborative design more easily and accessibly. This chapter concludes with further thoughts on newer instructional technologies.

### CHALLENGES CONFRONTED AND LESSONS (UN)LEARNED: LINKING STUDENTS FROM THE UNIVERSITY OF GHANA AND KWANTLEN UNIVERSITY COLLEGE

*Dr. Charles Quist-Adade*

While Canadian communications scholar Marshall McLuhan put us all in a “global village,” the benefits of the village appear to elude a sizeable number of the villagers as the digital divide between the technology-haves and technology-have-nots grows ever wider and wider. Knowledge and ideas flow in a uni-directional, North-to-South (from the Global North to the Global South) fashion, with little going in the opposite direction. A lopsided flow of knowledge, values and ideas creates an atmosphere of mutual suspicion and recrimination, with some of the villagers complaining of “cultural imperialism” and others fending off such charges by saying they are only promoting the ideas of “democracy.” But for the cultures of the “global village” to flourish in a tolerant, mutually beneficial fashion, it is imperative that there be real sharing of ideas, knowledge, and values. There is no better forum to address the ever-increasing need for mutual understanding and mutual respect across cultures and national borders than via collaborative learning. The British Columbia–Ghana Online Collaborative Learning Project (BCGOCLP) did just that.

### ADDRESSING DIVERSITY

*Dr. Madhumita Bhattacharya and Maggie Hartnett*

The move towards globalization of education will be successful only if we can find the ways and strategies where people could collaborate and integrate to bring “Unity in Diversity”, which is of utmost importance for world peace, sustainability of our rich cultures and progress together towards a better future. To address the emerging challenges and issues towards globalization of education we need instructional systems and supporting technologies which will give considerations to learner characteristics, dynamics of interactions and pedagogical principles for effective learning in a global context. It is not only diversity among people but also tools, tech-

nologies and strategies which are constantly changing. This chapter will include the possible ways of instructional and interaction design, modes of delivery and approaches to assessment, giving consideration to differences among the learners. This chapter will discuss guiding principles to address diversity in a constructive way through analysis of the impact of learning activity systems on the learning process.

### **MOBILE LEARNING IN DEVELOPING COUNTRIES: PRESENT REALITIES AND FUTURE POSSIBILITIES**

*Ken Banks*

This chapter talks about how mobile phones are being used today, in a rather restricted technical space, in mobile learning initiatives in places like Africa, and then looks at what will become possible as new and higher-end phones work their way into these markets.

### **THE IMPACT OF TECHNOLOGY ON EDUCATION**

*Dr. Mohamed Ally*

This chapter provides a brief history of technology in education, outlines the benefits of using emerging technologies in e-learning, provides design guidelines for developing learning materials, describes the support required for these technologies, and discusses future trends in e-learning.

## Part 2: Preparing Online Courses

### **LEARNING MANAGEMENT SYSTEMS**

*Dr. Don McIntosh, with contributions from Kevin Kelly and Randy LaBonte*

The Learning Management Systems chapter is a non-technical look at the features and capabilities of learning management systems for both corporate training and formal education use. It considers open-source systems as an alternative to commercial proprietary ones. It discusses the processes of needs analysis, selection, and implementation of the systems choices. Case studies are provided for illustration. It also describes technical and development standards and associated software such as course development/authoring tools, Learning Content Management Systems and virtual classroom tools.

### **EXPLORING OPEN SOURCE FOR EDUCATORS**

*Julia Hengstler*

This chapter presents an overview of open source and free software with reference to programs of interest to educators. It distinguishes between the Free Software and Open Source Movements, describes why these types of software should be of particular interest to educators, highlights the importance of the General Public Licence, summarizes key challenges to adoption of freely sourced software, reviews common misperceptions about this software and provides a methodological framework for the potential adoption of such software. Citations include personal communications from Free Software Movement founder, Richard M. Stallman.

### **QUALITY ASSURANCE BY DESIGN**

*Niki Lambropoulos*

A shift from the Industrial Age to the Information and Collaboration Age is evident in the changes in our lives. E-learning has become accessible to a wider population, providing flexible ways to learn, but it has not reached its potential. This chapter insists upon the importance of ensuring quality in the early stages of e-learning design. The design process must acknowledge the dual persona of the e-learner, as a learner and as a user of a system. This ongoing process is based on three pillars: the identification of a pedagogical focus or an existing problem; the integration of the design phases (analysis, design, development and use) unified by real-time evaluation; and awareness of the importance attached to e-learning communities in order to enhance collaborative learning, imagination, and co-creativity. Such a process provides information and feedback for proactive decision-making to support all participants in e-learning. Quality assurance by design helps e-learning to evolve and meet the requirements of the 21st century.

### **GENERAL PRINCIPLES OF ONLINE INSTRUCTIONAL DESIGN**

*Peter Fenrich*

This chapter describes the instructional design process which is defined as a systematic, repetitive process of activities aimed at creating a solution for an instructional problem. It provides details and practical guidelines for completing the process. The instructional design process entails conducting a needs assessment, goal analysis, subordinate skills analysis, and learner analysis. This process also entails writing complete learning outcomes at the highest appropriate level based

on a revised Bloom's taxonomy. The learner will ultimately be able to apply the skills learned in creating effective courses. This content will remain valid in the future in that the instructional design process is based on solid principles supported by years of research.

## ACCESSIBILITY AND UNIVERSAL DESIGN

*Natasha Boskic, Kirsten Starcher, Kevin Kelly, and Nathan Hapke*

Great efforts have been made to give every student equal access to high-quality learning and to remove barriers for people with disabilities. However, most of these efforts are focused on the traditional, face-to-face classroom experience. Less attention is devoted to those taking courses fully online and their ability or inability to cope with web-based interactive content. While standards and guidelines have been developed to support and assist with accessible web design, their primary focus has been on technical specifications, assistive technologies, or legal issues. Fewer studies have been conducted to investigate how that "accessible" content is perceived from a learner's perspective and how helpful it really is. As distance learning adapts to new technology, instructors should be innovative in their relationship with students and in methods for developing educational content, accommodating the diverse needs and learning styles which will be beneficial for all, regardless of their (dis)abilities.

## ARTICULATION AND TRANSFER OF ONLINE COURSES

*Finola Finlay*

Students are increasingly mobile, moving between post-secondary institutions and carrying their accumulated credits with them. They expect that they will receive appropriate transfer credit for relevant courses they have taken and be able to apply that credit to fulfill program requirements in the institutions they attend. Online learning has had a significant impact on mobility and transfer: students can and do access high-quality courses from all over the world. However, this virtual mobility creates challenges for post-secondary institutions. The articulation agreements used by institutions and systems to generate and record transfer credit arrangements have traditionally been negotiated locally and have concerned the assessment of courses offered in the familiar face-to-face classroom environment. Few resources exist that will assist practitioners at sending institutions to ensure the successful articulation of their online courses,

and few provide evaluators at receiving institutions the tools they need to make confident decisions. This chapter aims to fill that gap.

## PLANNING YOUR ONLINE COURSE

*June Kaminski and Sylvia Currie*

Where does the process of planning a course begin? Where does it end? What does a course plan look like, and how does it differ from a course design? This chapter provides an overview of the broad considerations in preparing an online course plan. A plan is a starting point for moving forward with the design, implementation, and evaluation of an online course.

- Who will you work with to design the course?
- Who will take the course and why?
- What do we know about the learners?
- How do instructor styles factor into the planning?
- What are the main components of the course?
- How will the course be organized?

Even the most open-ended learning activities begin with a plan. However, a plan will and should be refined and adjusted during implementation. In this sense a plan evolves, but it continues to provide a sidebar of sorts, or something to guide the decisions about the design work that needs be carried out. A plan can be both an ongoing reality check and a way to focus on important elements of course design.

## ASSESSMENT AND EVALUATION

*Dan O'Reilly and Kevin Kelly*

This chapter reviews some of the basic issues of evaluation and assessment relevant to both online testing and authentic assessment techniques. While WebCT version 4.1 is the primary example, the information can be applied to most online platforms used in a lab setting.

The chapter begins by detailing some of the more important security issues for online testing, ones that generally are not covered in most reference material. It looks in detail at some third-party software, namely NetSupport and Excel, for managing computer labs. NetSupport provides a means of monitoring every computer in a lab from one workstation. Excel, through its web query function, provides a means of collecting data from any page in WebCT in order to monitor activity on that page. Detailed examples are provided for both packages. The quiz settings relevant to monitoring a WebCT quiz in a computer lab are discussed in detail.

Here, the discussion focuses on WebCT 4.1 and a computer lab environment. The chapter ends by describing other ways to evaluate student performance, such as using rubrics and peer review to evaluate writing assignments submitted electronically, or asking students to submit items within an electronic portfolio.

## Part 3: Implementing Technology

### **UNDERSTANDING COPYRIGHT: KNOWING YOUR RIGHTS AND KNOWING WHEN YOU'RE RIGHT**

*Dan McGuire*

This chapter features an explanation of the ethical and legal requirements that must be met before using copyright material in your online course.

### **'OPEN LICENCES' OF COPYRIGHT FOR AUTHORS, EDUCATORS, AND LIBRARIANS**

*Julien Hofman and Paul West*

An open licence, as defined in this chapter, is a licence granted by someone who holds copyright in material, allowing anyone to use the material subject to the conditions in the licence but without having to pay a royalty or licence fee.

There are many different open licences, some for computer software and some for other forms of material. Each has its own terms, conditions and vocabulary. This chapter is an introduction to open licence language and to the open licences that are important for authors and educators. It is not legal advice. Individuals or institutions thinking of committing themselves to open licensing should get professional legal advice about the implications of the licences they are considering using.

### **E-LEARNING STANDARDS**

*Dr. Randy LaBonte*

Standards exist for many things, from safety standards in the home for construction and manufactured goods to standards of practice for professionals. The systemic implementation of new technologies and delivery of online courses requires adoption of standards and specifications in both the development of e-learning content and its delivery through e-learning technologies. Standardizing the gauge of a railroad track enabled the

locomotive to lay the groundwork for the industrial economy, and in much the same way in today's information age the Internet was born from the standardization of TCP/IP, HTTP, and HTML protocols for the World Wide Web. The historical emergence of standards for railway track gauge, as well as telephones, videotape/DVD formats, and HTML, typically started with proprietary technology that did not integrate with other technologies. End-users and consumers of the technology demanded changes that led to interoperability, enabling several products designed to serve common needs to coexist. This convergence of technologies provides the groundwork for the development and description of standards that provide end-users with assurance of longevity and consistency. Given the initial costs for developing e-learning programs, establishment of standards for e-learning is driven by similar demand for consistency and longevity of use by the end user.

### **LEADERSHIP AND E-LEARNING: CHANGE PROCESSES FOR IMPLEMENTING EDUCATIONAL TECHNOLOGIES**

*Dr. Randy LaBonte*

It is one thing to have innovative technology and preach about its ability to transform and revolutionize learning; it is another to actually make this happen within traditional, structured education and training environments. Sound leadership and change management skills are key to implementing the use of new educational technologies to support e-learning programs and foster transformation. While leadership, reform and change management have been well studied and documented in the literature, little has been written about the role leaders play in the success or failure of e-learning program design, development and implementation. Traditional theoretical and practical constructs do not adequately reflect emerging e-learning environments, yet one theory, transformational leadership theory, does provide insight into fundamental assumptions about change, control, order, organizations, people and leadership in e-learning program implementation. Promising research affirms the critical role of leadership in systemic change for e-learning design, development and delivery, and confirms that without a clear vision combined with collaborative leadership organizations could end up committing precious resources to the development and deployment of courses for e-learning without much success.



## BUILDING COMMUNITIES OF PRACTICE

*Shawn Berney*

This chapter focuses on the development of collaborative technologies that underpin a community of practice. The bottom-up approach provides the foundation for greater understanding of these emerging collaborative spaces. Concepts that underpin online engagement and evolving digital communication standards are addressed. These concepts provide the basis for examining operational and social processes, including administrative and technological frameworks, as well as leadership techniques. Modelling techniques are then described to show how to integrate foundational concepts with social and operational processes. These modelling techniques encourage interdisciplinary communication and broad engagement in community planning and development.

## Part 4: E-learning in Action

### INSTRUCTIONAL STRATEGY

*Peter Fenrich*

An instructional strategy describes the components and procedures used with instructional materials to have the students achieve the learning outcomes.

This chapter first introduces instructional strategies and discusses strategies for verbal information, intellectual skills, psychomotor skills, and attitudes. The chapter then describes how to sequence learning outcomes and then how to motivate learners in online courses. Instructional events, the foundation for course design, are then presented. After this a variety of instructional strategies are discussed that can support learners beyond the more common online strategies that are described in other parts of this book. The chapter closes with some comments on developing and selecting instructional materials.

### MEDIA SELECTION

*Peter Fenrich*

A major part of the instructional design process is selecting the appropriate media mix to effectively teach the learning outcome(s). Selecting the best media mix can increase learning and maximize cost-effectiveness. Some concepts are extremely difficult to teach without the correct media mix.

This chapter introduces the different media categories: text, audio, visuals, video, animations, and real ob-

jects. The chapter explains how each medium relates to learning and describes how media can affect a learner's motivation. The strengths and weaknesses of each medium are presented with respect to the different learning outcome classifications, as previously discussed in Chapter 10, General Principles of Instructional Design. This chapter also provides ideas on how to keep the message clear.

### COMPUTER-BASED RESOURCES FOR LEARNING

*Peter Fenrich*

This chapter focuses on the viability of virtually teaching lab, shop, and other practical skills. Topics include how educational technology may support learners, problems with "live" labs, instructional design, controlling real equipment, and how lab tests can be handled, as well as some thoughts on articulation and the future of online labs. The instructional design topic will address learning outcomes that focus on important skills, content areas that will be stronger or weaker than traditional labs, and strategies for effectively teaching lab skills online.

### COMPUTER-BASED GAMES FOR LEARNING

*Dr. Alice Ireland and Dr. David Kaufman*

This chapter gives you a broad introduction to the use of computer-based games for learning. We start with basic terms and move on to look at why these activities can be powerful learning tools, drawing on current learning theory, game research, and recent experience. After presenting examples to spark your own learning-game ideas, we discuss factors that make learning games effective. The chapter closes with tips for successfully getting started using games in your learning context.

### EVALUATING AND IMPROVING ONLINE TEACHING EFFECTIVENESS

*Kevin Kelly*

"Teaching effectiveness" is a broad term used to describe an instructor's ability to impact student success. It is usually defined according to several factors, such as how well an instructor organizes a course that contains relevant material, how well he or she knows the course material, how clearly he or she communicates with students, how frequently he or she provides timely feedback, and other such criteria. In classroom situations, effectiveness definitions sometimes include the instructor's enthusiasm or disposition. During fully online and

blended learning courses, students often need greater amounts of structure and support to succeed because online course activities usually require students to take greater responsibility for their own learning success. Therefore, many of the criteria mentioned above take on even more importance when evaluating online teaching effectiveness.

## Part 5: Engagement and Communication

### TOOLS FOR ONLINE ENGAGEMENT AND COMMUNICATION

*Richard S. Lavin, Paul A. Beaufait, and Joseph Tomei, with contribution from David Brear*

This chapter combines two sections on relatively new technologies, blogs and wikis, with a third on digital storytelling, to introduce the possibilities of creating sets of many-to-many relations within and between classes, and to encourage educators to take up blogs, wikis, and digital storytelling in their classrooms as a way of returning to a state of “beginner’s mind”. These tools are not only powerful in and of themselves, but may have an even greater potential when used together. The first section on blogs argues that they may be the best all-around tool for computer-mediated communication (CMC), allowing learners and educators alike to build their online identities in a semi-enclosed space from which they can venture out on their own terms to engage with others. The following section on wikis points to possibilities of using these powerful tools for collaboration, suggesting that in many cases wikis work better when learners and educators already have a solid foundation in blogging. This section outlines work that attempts to merge the functions of blogs and wikis, and highlights issues associated with usability and flow. The third section takes up digital storytelling, to walk educators through the process of planning and creating their own stories, and to prepare them to teach their students how to do the same. The process of assembling various media and pieces of information into a story encourages deep learner engagement, and can be a wonderfully effective way to master curricular content, while helping to encourage development of computer literacy. Blogs, wikis, and digital media are but a narrow selection of the tools for online engagement, but we feel they cast a wide enough net to familiarize readers with some of the options that now exist.

### TECHNO EXPRESSION

*Kevin Kelly and Dr. Ruth Cox*

This chapter lays a foundation for online teachers to recognize K–12 and postsecondary students’ needs to express their ideas and viewpoints, both within and outside the context of their coursework. There is a human at the other end of each web page, discussion thread, chat entry, blog, or wiki contribution. We outline specific strategies to create a safe environment for techno expression, and offer specific examples of how educators can model and encourage this expression through various technological means. We also describe various tools that instructors can use to facilitate the process. This chapter complements Chapters 25, 26, and 27 related to instructor and student engagement by looking at course design, effective online practices, and technological tools that give students opportunities to express themselves.

### SOCIAL MEDIA FOR ADULT ONLINE LEARNERS AND EDUCATORS

*Maira Hunter*

Social media allows working adult learners to be connected, and encourages them to use all four language skills of reading, writing, listening and speaking.

The cluster of technologies in one support does not overload the learner in their immediate need to learn what they need and to access their learning environment at any time, and anywhere.

The online environment engages the learners in discussion, collaboration, exploration, production, discovery and creation.

Adult learners have the choice to create and develop their own personal learning environment.

### ONLINE COLLABORATION: AN OVERVIEW

*Paul A. Beaufait, Richard S. Lavin, and Joseph Tomei*

In this chapter we explore the notion of collaborative learning from theoretical as well as practical perspectives. Our first step is to distinguish collaborative from cooperative learning, because much so-called collaborative learning, although collective and often cooperative, is not necessarily collaborative. We attempt to clarify what we may be failing to do when attempting to foster collaboration, prior to formulating clearer ideas of what else is possible, and what is transferable to online learning and working environments. With rapid development and expansion of technological infrastructures, possibilities for harnessing technology to enable collabo-

ration are expanding. Yet, as we move to take advantage of these possibilities, we encounter new challenges and discover unexpected complexities in fostering collaborative endeavours online. The chapter concludes with stories and reflections representing online educational collaboration from learners' and educators' perspectives.

## IDENTITY IN ONLINE EDUCATION

*Joseph Tomei, Paul A. Beaufait, and Richard S. Lavin, with contributions from Tod Anderson, Kathryn Chang Barker, Karen Barnstable, and Lynn Kirkland Harvey*

In this chapter we suggest that identity is the base from which learners' engagement with content, as well as communication with others, begins. As students establish their identities, they have to negotiate and engage with other students, and in online courses channels for negotiation and engagement are necessarily different from those in traditional classrooms. The power of online classrooms arises not simply out of their time- and space-shifting potentials, but also from the potential for diverse sets of many-to-many relationships as students engage with each other. Many of the lessons that we aim to teach students are not simply to do with mastering course content, but also involve understandings of issues involved in working with others and collaborating towards shared goals. Deliberate appraisals of learners' identities in online environments can help us realize these aims. This position is supported by Tod Anderson's summary of secondary student participation in online learning, which provides a snapshot for technological understanding from a locale that might represent a best-case scenario—or at least a fairly advanced one—in which the technologies in use have to a large extent been adopted from higher education. We note that secondary schools face many of the same issues that tertiary and adult educators began grappling with years ago and continue to face today. These observations provide a springboard into a wide-ranging discussion of online learners' identities, underscoring the necessity for considering learners' identities from the very beginning of online work, rather than just as a concern of secondary

and tertiary educators. The chapter concludes with a concrete example of identity construction and a possible end point to online education in the form of Kathryn Chang Barker and Karen Barnstable's discussion of e-portfolios.

## SUPPORTING E-LEARNING THROUGH COMMUNITIES OF PRACTICE

*Dr. David Kaufman, Kevin Kelly, and Dr. Alice Ireland*

This chapter examines the theoretical and practical aspects of community of practice (CoP). It presents a practical guide to developing and maintaining your own CoP. It also provides an overview of the conceptual foundations of CoPs. Case studies throughout the chapter describe the conception, growth, challenges and triumphs of several CoPs in action.

## LOOKING FORWARD: STORIES OF PRACTICE

*Dr. Susan Crichton and Dr. Elizabeth Childs*

Much of the contemporary literature about online and/or blended learning casts it as innovative, and talk abounds about leading edge technologies supporting teaching and learning opportunities for K–12 education, post-secondary education, and corporate training. Typically, both are about flexible access and increased learning opportunities.

In the K–12 or post-secondary educational environment, these learning options enable students to complete work that they wouldn't otherwise be able to do. Initially, this audience included students with an extended illness or disability who were now able to complete course work that otherwise they would miss or be required to take again. It also included rural students who were unable to have access to courses required for post-secondary entrance. Increasingly, this audience has expanded to include any student who is working towards their personal learning goals and needs access to courses and/or content at their pace and in their time-frame.



# Introduction

Enlisting the practice-based knowledge of educators to address the aspirations and goals of today's information-savvy students is surely a key to providing enriching experiences using learning technologies.

Faculty, instructors, staff, administrators, policy makers and governance bodies have their own unique perspectives on the role of learning technologies within higher education and each has a sense of what would constitute an enriching experience. That experience might include highly flexible and engaging course offerings, convivial tools for instructors, more learners for academic departments, increased recognition and reputation for an institution, more mobility for learners between programs and across institutions—items with specific success indicators, depending on viewpoint.

But despite the proliferation of information and communication technologies (ICTs) within the higher education sector, ICT use in higher education may not yet have made as significant an impact on the fundamentals of teaching and learning nor revolutionized classroom practice as predicted, according to a report on tertiary education from the Organisation for Economic Cooperation and Development (OECD, 2005).<sup>1</sup> Instead, the report pointed to administrative services such as admissions, registration, fee payment, and purchasing as areas of measurable ICT impact. ICT use may have changed the nature of the learning experience for many learners, providing convenient access to information resources from libraries and online databases, and it may have relaxed the time, space, and distance constraints of education. But the fundamentals of how higher education institutions teach or the ways that learners learn has remained largely unchanged—until now.

How do we currently approach the enrichment of teaching and learning using ICTs? Are there emergent models of practice arising from educator experiences that may apply broadly to ICT applications for teaching and learning? Are there best practices with learning technologies emerging from particular institutions or jurisdictions that could have wider application across

the higher education sector? How has the proliferation of ICTs, and particularly mobile technologies, been incorporated by educators into their practice in diverse communities around the globe?

This book addresses these questions. It was collaboratively developed and edited by experienced practitioners in the higher education sector. It is the output of ongoing discussions among practitioners who participated in an online community of interest that stimulated dialog among and between interest groups that shared a common vision of providing best practice knowledge for the benefit of their peers. This is a book that had its roots in the organic discussions of practitioners and became a larger work through their collective intention to disseminate their knowledge more broadly.

The book addresses issues of learning technology use in five sections that deal with:

- The impact of instructional technologies
- Creating online course
- Implementing technology
- E-learning in action
- Engagement and communication

In Part 1, the book provides a view of the many ways in which information technologies can be configured to suit the diverse range of situations in which learning can take place, including descriptions of emergent approaches such as those afforded by social networking technologies and collaboration tools. Part 1 also flags issues of diversity, as well as the challenges and opportunities for ICT use in the developing world.

In Part 2, the book provides insights into key design issues in the creation of online courses, including matters of instructional design, assessment and evaluation, diversity, accessibility, quality assurance, and the impacts associated with making technological choices in an instructional context.

In Part 3, the book explores issues of leadership and change management with chapters that discuss copyright and licensing, the implementation of learning management systems, the use of emerging open source tools and open educational resources, and the development and maintenance of standards of practice. It em-

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<sup>1</sup> OECD (2005). *E-learning in tertiary education: where do we stand?* Organisation for Economic Cooperation and Development (OECD). Paris.

phasizes the building of communities of practice as a means of sustaining innovation in the context of a dynamically evolving instructional ecosystem.

From the action perspective, in Part 4 the book provides chapters on instructional strategies, selection of media, the use of games, and the evaluation and improvement of instructional practices.

In Part 5, the book deals with the tools for engagement and communication and their use as a means for expression, as well as for giving voice to learner identities and communicating their stories. The authors discuss the power of communities of practice as a tool for sustaining change and maintaining colleague support as we look forward to what may be next on the learning technologies horizon.

In a paper describing the creation of a national e-learning strategy for New Zealand, Higgins (2002) described the “way forward” as a learner-centred approach that encompassed the complete range of interactions between learners and the higher education system. “E-learning can deliver many benefits, but only if learner-centred opportunities are developed that ensure it is an effective educational tool. This means giving learners much greater choice in how their learning is delivered, enabling them to interact easily with teachers and access appropriate levels of administrative, educational, and technical support. It means designing our systems in ways that best fit the circumstances and needs of our learners.”<sup>2</sup>

What Higgins was describing was the need for a technological approach to the issues of access, choice,

flexibility, and mobility within the higher education system using ICTs and learning technologies that can enhance the functional aspects of the entire higher education ecosystem. It is from an ecological perspective that the authors of this work present emerging practitioner knowledge for enriching learning and teaching using learning technologies. In this book, the authors have described and evaluated instructional approaches that draw upon technological innovations with the power to change teaching and learning practices in positive and transformative ways.

From the perspectives outlined in this book there is a wealth of available practitioner knowledge on the use of learning technologies that requires additional dissemination. This book is one potential creative outlet. And, as the authors have demonstrated through their approach to disseminating their work online, the power of ICTs may only now be emerging in the hands of practitioners who actively dialogue with their peers on relevant issues as a means to elevate the use of learning technologies to a transformative plane in the higher education sector.

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<sup>2</sup> Higgins, A. (2002). *Creating a National E-Learning Strategy in the Open Learning Environment: A New Zealand Case Study*. Distance Education Association of New Zealand. Available: [http://www.col.org/pcf2/papers%5Chiggins\\_1.pdf](http://www.col.org/pcf2/papers%5Chiggins_1.pdf)

*Part 1:*  
*The Impact of Instructional*  
*Technologies*



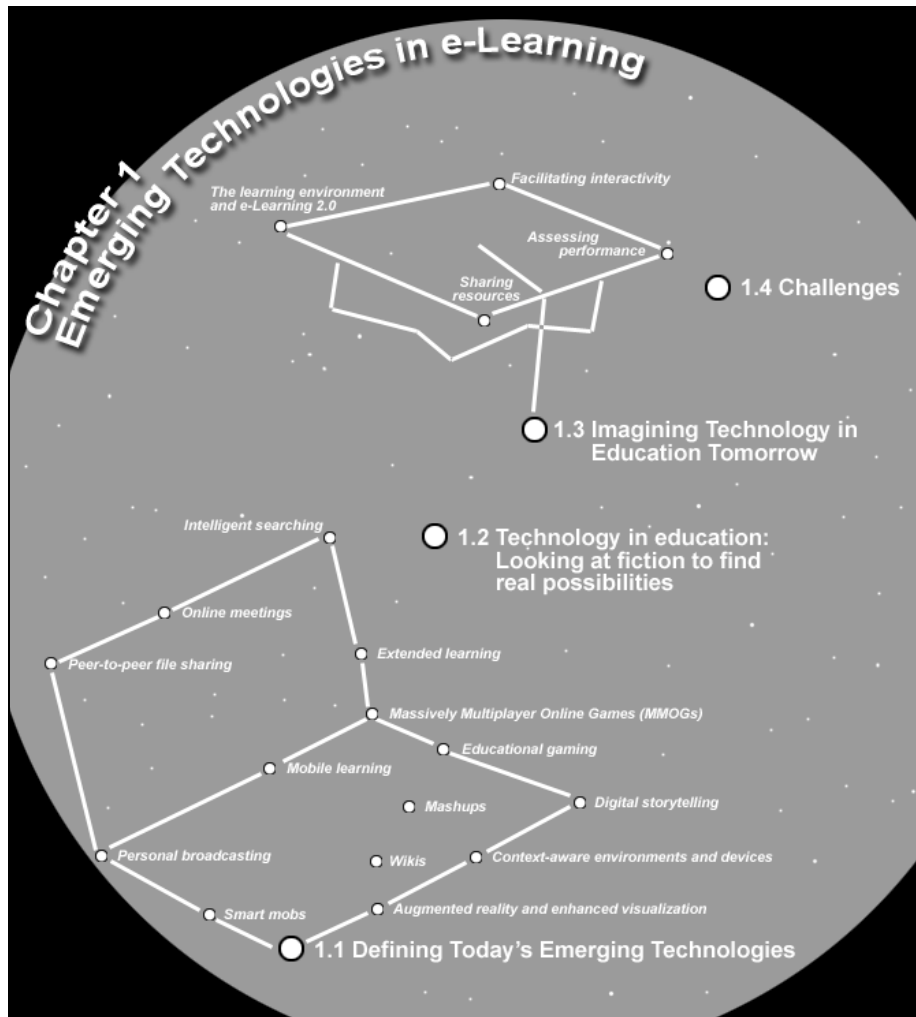


# 1

## *Emerging Technologies in E-learning*

Patricia Delich, Kevin Kelly, and Don McIntosh

Creativity is an important part of modern teaching and learning. It makes sense to take students' ideas and upgrade them using emerging twenty-first century technology. – Scott (2006)



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