Preface

INTRODUCTION

Over the last decade, dramatic advances have taken place in the use of the Web for teaching and learning (Bates & Poole, 2003). Central to these developments has been the role of Web 2.0 technologies and social media communities and applications. For learners and instructors today, the Internet is “always on,” making access to information ubiquitous, at least in the first world (Baron, 2009). These technologies and applications have transformed the way information is created, shared, and disseminated, presenting learners and instructors with a range of new ways of collaborating and interacting.

Digital technologies have also impacted the way research is conducted, and it is important that new methodologies emerge in order to investigate new forms of online learning and community engagement (Thomas, 2009). These methodologies need to incorporate mixed methods approaches involving both quantitative and qualitative data collection methods and provide more holistic or multimodal approaches to understand the complexities of both verbal and non-verbal interaction online (Thomas, 2011a, 2011b; Warschauer, 2011; Warschauer & Grimes, 2007). While there has been an explosion of interaction on the Web and learners and instructors are using the Web both inside and outside of formal educational contexts with increasing regularity, more research needs to be conducted on these environments and the types of digital age learners found within them (Oblinger, 2004; Oblinger & Oblinger, 2005). Research is necessary on the intercultural aspects of pedagogy, opportunities for utilizing social networking for teaching and learning, on new e-assessment practices, blended learning, and digital literacy, among many other areas (Lankshear & Knobel, 2008). From immersive worlds to digital gaming (Reinders, 2012), the potential of Web 2.0 and social media is evident, but it is by no means widespread in terms of adoption among a diversity of educators, nor has uptake been particularly dramatic in educational contexts outside of the US, UK, and western Europe.

Over the last decade in particular, a number of Web-based software systems have appeared to support the administration of courses of study, especially in the university sector. Variously referred to a Course Management Systems (CMS), Virtual Learning Environments (VLE), Learning Support System (LSM), or Learning Management Systems (LMS), they have been designed to enable students and faculty to manage every aspect of their study programs within a password-protected environment. Some of the most useful features include standardized templates for course documents and assignments, spreadsheet tools to track student assessment, templates to design multiple-choice quizzes, and a range of communication tools such as discussion forums and text chat. Developments in podcasting have led to additional features such as RSS feeds and Weblogs. While primarily developed to support distance learning and off-campus study programs, they have quickly become a part of the necessary foundation of any presence-based course of study as well.
Course management systems such as Blackboard have become staple features of pedagogical institutions around the world, especially in the university sector. Few would disagree perhaps that they represent a step beyond the university’s initial flirtation with the dissemination of course and administrative information on the Web by amateur enthusiasts, and that their appearance marks the sharpening of an institution’s corporate brand in an increasingly competitive global marketplace. While the use of the Web for pedagogical objectives dominated the early use of Web pages in university departments, they have developed into a gateway that presents access to the whole gamut of information required by today’s students and faculty, from library access to curriculum and assessment tools. Their popularity is due to a number of factors including:

1. Making resources available to students within a Web-based framework that makes savings on the time of faculty and students;
2. Address issues of quality assurance by standardizing all information in a professional format;
3. Improve the relationship between distance- and presence-based study programs.

Yet while CMS has sought to integrate features from the both the administrative and learning environments in which students find themselves, it has proved more useful as an administrative tool than for encouraging learning. It does little, for example, to develop a social constructivist pedagogy and play a fundamentally different role to that of social software. CMS is primarily concerned with the management of learning rather than furthering new, collaborative forms of learning.

According to O’Reilly (2005), Web 2.0 is related to a new attitude towards the use of Internet technology. Web 2.0 emphasizes the development of a truly networked environment in which new applications are automatically updated online in what O’Reilly refers to as an “architecture of participation.” By this he means that the online network allows the emergence of new hybridized or “MashUp” technologies to emerge from the climate of innovative collaboration. The task of defining the second generation of the Internet is improved if one considers the characteristics of Web 1.0 and the emergent Web 3.0. Whereas the first generation of the Internet is popularly conceived of as a one-dimensional “read only” experience, the applications associated with Web 2.0 open up users to a “read-write” Web in which they can actively contribute their own content. The nascent Web 3.0, sometimes referred to as the “Semantic Web,” goes further by anticipating the opportunity for users to engage in transforming the Web-based materials themselves.

According to O’Reilly, the platform of the second generation Internet is based on a number of features including user control and generated content, openness, participation, maintenance of standards, decentralization of authority, and a modular framework. The leap from Web 2.0 to Web 3.0 is based on the emergence of a new infrastructure to improve connectivity and produce the experience of ambient networks. This will be facilitated by the increasing ubiquity of Internet connectivity, either from computers or 4G portable devices such as phones and PDAs. When approaching the pedagogical context of learning in the era of Web 2.0, there are a number of related terms that are important: digital natives, ePortfolios, blended learning, and digital games for learning.

The net generation demonstrates a strong propensity for independence, being able to search for and access information that is required by them. Through the use of blogs and other communication tools, they demonstrate an emotional and intellectual openness to others. This spirit of openness is reflected in the net generation’s focus on social inclusion evident in their interest in online communities. According to Tapscott (1998), in addition they demonstrate “free expression and strong views,” “innovation,” and
in contrast to the “baby boomer” generation, net generation members emphasize their mature attitude to life and learning. Unlike their predecessors they are “investigators” by nature, and enjoy exploring the myriad of opportunities available on the Web. An investigative spirit is coupled with a great sense of “immediacy”; the need to do everything at a high speed is demanded by this generation. While being open to the excessive levels of information available on today’s Web, the net generation are sensitive to information being peddled for unseen corporate interests. Similarly, although surrounded by more information, they are sensitive to the continuous need to verify and authenticate the information that surrounds them.

E-portfolios are another innovative development in a Web 2.0 context. E-portfolios are collections of course work that reflect a student’s ability to utilize digital technologies to produce creative work. The work contained in the portfolios typically relates to one course or to an entire program of study and demonstrates a student has been able to reflect successfully on the learning process and translate these reflections into productive work. E-portfolios are increasingly popular in language education where they can be used to demonstrate a student’s writing and organizational skills. Emerging first in the 1980s, they became increasingly prominent in the 1990s and benefited from available digital technologies, allowing students to combine different documents, link them using hyperlinks, and to become a portable record of educational achievement. In terms of assessment, e-portfolios can be used to encourage both formative and summative forms of assessment, therefore catering for a wider range of students’ abilities. As a planned project work, they encourage students to consider their own study skills and to be cognizant of the learning processes they engage in. As well as producing different relationships between teachers and students, e-portfolios are encouraging more openness between students and enabling peer review procedures and generally greater opportunity for wider audience participation in the learning process. Based on an openly constructivist principle of learning, e-portfolios are underpinned by a non-linear type of learning, which emphasized a plethora of different points of origin, synergy, and reformulation for learners. E-portfolios contribute to a process of learning as continuous reflection and improvement. The e-portfolio becomes an interactive process between students and teachers engaged in allowing students to construct their own meanings and knowledge rather than relying on knowledge being transmitted from an authoritative teacher without any opportunity for a shared process of learning.

One of the most pressing challenges presented by e-portfolios is how such work can be effectively assessed and evaluated. While clearly students’ work often contains a higher level of student engagement and involvement in the learning process, it is not at all clear how this type of work can be evaluated. Other challenges relate to those students who do not yet possess the digital literacy skills to fully utilize and exploit the opportunities presented by e-portfolios.

As the name implies, blended learning is a mix of face-to-face and Web-based learning to suit the learning needs and objectives of the learners. While it is becoming particularly integrated into educational institutions, it has also become the preferred mode of learning in the workplace for a number of companies. Blended learning is a highly popular solution given that it is an unstable mix of both traditional and emerging technologies in a form that is negotiated by the instructors and students. As with other forms of e-learning previously examined, blended learning is advantageous to the extent that it promotes an interactive form of instruction that facilitates critical thinking and project-based skills.

There are numerous interpretations of the relationship between face-to-face and online learning in blended learning approaches developed by educators around the world to date. One of the most important aspects is the built-in focus on independent or self-paced study. The balanced combination of instructional and learning styles is also reflected in the mix of different types of traditional and participative
digital technologies and applications. In a Web 2.0 context, blended learning strategies have evolved to include the use of applications from blogs to chat rooms.

Literature in the field of blended learning identifies four main areas of concern: integration issues, the adoption of innovative strategies to integrate learning technologies, the articulation of new and appropriate learning methodologies to support blended learning in the classroom, and appropriate evaluation and assessment criteria to sustain them and bolster quality across students with different abilities and learning styles. Other benefits associated with blended learning include a blend of reflective and interactive modes of learning, enhanced cost effectiveness in delivering educational programs, access to resources 24/7, and more opportunity for personalized learning tailored to fit individual learners’ behaviors.

A number of challenges can also be identified, which educational institutions and instructors have to overcome if they are to successfully integrate blended learning strategies. These include, for example, providing instructors with appropriate professional development to take advantage of the mix of opportunities that are available, challenges presented to administrators to provide the infrastructure necessary for blended learning technologies to develop, and the opportunities for instructors to engage in course redesign and evaluation processes necessary to fully exploit the benefits presented by blended learning approaches.

Blended learning is particularly appealing to foreign language educators as a result of its stress on constructivist principles and the emphasis on interactivity as a means of producing enhanced language output. In a foreign language setting such as Japan where learners have little opportunity to practice their communicative skills, blended learning environments can enhance opportunities for a content rich learning environment. The Japanese students who find themselves brought up on a grammar translation method typically find that they have not been exposed to English as it is actually spoken in English speaking countries. In EFL contexts as opposed to ESL, blended learning can be used to reduce a number of anxieties confronted by learners and provide a series of engagements with native speakers mediated by Web-based technologies. Therefore, more access to native English speakers is possible through the additional e-learning-based approaches, whether over the on-demand video sites or via virtual learning environments.

Finally, there has been a recent rise in the interest in the use of computer games for learning purposes, especially in language-related areas. Where formerly they were dismissed as bastions of violence, a waste of time, a distraction from substantive learning, or a corruption of students’ social skills, recent research emphasizes their use for enhancing students’ creativity and higher order thinking skills. A number of futurist thinkers have argued that games enhance interactivity and students learn a range of digital technology skills from their simulated online environments. Students become used to confronting real world decision-making processes in situations that have often more reality and relevance than the typical classroom. The highly sophisticated virtual reality presented by contemporary games gives students opportunities to make mistakes while lessening their real world impact. Research is also examining the impact of gaming on children with disabilities and special needs. The latest generation of games benefit from a new network-based element that gives gaming an added social dimension. Gaming adds to students’ enjoyment of the learning process as well as increasing student motivation.

This current volume draws together 14 chapters to provide a fascinating insight into contemporary approaches to teaching and learning in Web-based environments over the last 5 years. All of these chapters have been through a process of peer review and represent state-of-the-art engagements with the pedagogical implications of the Web, as well as advancing new research-based approaches to mapping the contours of digital learning environments (Shaffer, 2008). Authors from 11 different countries (Australia, Canada, Egypt, France, Germany, Iran, New Zealand, Portugal, Spain, the UK, and the US) consider these and related issues of importance to pedagogy in the digital age.
AN OVERVIEW OF THE BOOK

In Chapter 1, “Learning Languages via Social Networking,” Brick discusses the findings from a research study on the social networking site Livemocha (Livemocha.com) aimed at establishing an online community of language learners. Language learning has been at the forefront of my developments in Web 2.0 and social media over the last seven years and this research continues to position the discipline as a gateway to innovations that may have wider ramifications across education in general. The research took place over a period of three months and involved a case study of 7 language learners. Though Livemocha has attracted millions of users since it was founded in 2007, few research studies have considered it in-depth. Brick examines the features of Livemocha and how they need to be developed if the site is to provide a successful social networking site for language learners and educators. The study provides an introduction to the potential of social networking for language learning, and participants were asked to enroll for and study a language of their choice. Findings discovered that participants were supportive of 2 main areas of the Livemocha site, namely, the combination of both synchronous and asynchronous communication for target level communication, often with native speakers, as well as its ability to provide instant peer-based feedback on performance. In terms of challenges, findings indicated that there were several deficient areas in need of further improvement. These included in particular the “word-list” function. Interestingly, participants also suggested that complaints emerged as a result of cyber-flirting. Overall, Livemocha was shown to have a significant amount of potential for language learning in a supportive social networking context and the functionality of the Web site interface was commended for its accessibility and promotion of learning relationships. In conclusion, Brick considers the future potential of this form of network in the context of higher education and outlines a number of implications for designers and participants.

In Chapter 2, “Assessing Learning with Web 2.0 Tools: Lessons Learned from a Portuguese Initiative,” Clara Pereira Coutinho focuses on the types of skills required by learners engaging in today’s networked information society. Increasingly, institutions of higher education are underlining the importance of mastering digital literacy and ICT skills to promote employability skills for graduates. One aspect of this concerns the ability to provide networked and digitally sophisticated environments in which learners can receive the kind of dedicated and specialized personal learning required by today’s learners. Learners require flexibility and styles of learning which allow them to engage seriously or casually any time anywhere, whether on or off campus. The chapter investigates the key aspects of the social Web, focusing in particular on how best to support the skills such as collaboration, reflection and learner creativity. While there has been an increasing amount of research on the positive implications of learner collaboration with Web 2.0 tools, more research is required on the implications for designing appropriate assessment strategies that are consistent with the principles of the social Web. Based on a project with learners in teacher education at the University of Minho in Portugal between 2006-2012, the chapter discusses findings arising from research on Web 2.0 assessment tools. The chapter presents a rationale for using Web 20 collaborative tools in this context and reflects on the implications for establishing an authentic task-based approach.

Chapter 3, “Teachers’ Experience as Foreign Language Online Learners: Developing Teachers’ Linguistic, Cultural, and Technological Awareness,” investigates data from a qualitative study among K-12 learners in the United States. Foreign language teaching is increasingly being adopted for online learning environments and this is a timely study of potential synergies that reflect the interest in digital technologies. Perceptions are an underutilized area in many research studies to date on Web 2.0 and it
is particularly important to redress this imbalance with ethnographic studies or those adopting a mixed methods approach. There were 35 participants in the study that took place over nine weeks and involved a Chinese language/culture course. Incorporating a range of data collection instruments including surveys, the findings suggest a number of positive implications that will need to be further deepened and enhanced if online language education and teacher education are to be successful. These include how to engage trainee educators with a variety of learning styles and proclivities; what strategies can be used to develop learners’ linguistic, cultural, and technological awareness; and how to facilitate diversity in these areas in online environments.

In Chapter 4, “A Hybrid Analysis of E-Learning Types and Knowledge Sharing Measurement Indicators: A Model for E-Learning Environments,” Qorbani, Vanani, Sohrabi, and Forte examine a conceptual model aimed at administrators/directors of e-learning environments. The model combines individual, social, organizational, and technical indicators as a means of improving the quality of learning in e-learning environments. Building on this model, a number of different approaches are presented and discussed for facilitating e-learning in contemporary online contexts.

Social media has become central to many innovations in e-learning over the last few years as we have seen. Chapter 5, “Building a Model for Online Distance Courses through Social Media and Networks,” focuses on social media networks in the context of an Elementary German course at the University of Pennsylvania that has been running online for over 3 years. Based on a flexible learning model intended to present campus-based learners with opportunities to accrue credits during the summer vacation, the courses were established according to the key principles of communicative language teaching. A key aspect of the design was to consider how to operationalize these pedagogical principles in online environments while retaining the most significant aspects of face-to-face communication. The chapter is important in demonstrating how online language-learning environments offer learners not only linguistic competence but opportunities to develop intercultural communication skills as well as digital literacy skills. Data analysis examines instructor experience of online and face-to-face environments and considered the dynamic relationships between them.

In Chapter 6, “Improving the Perception of Technology-Supported Learning Situations: What are the Factors Affecting the Adoption of Technology in Egypt?” Mabed and Köhler investigate the factors influencing the integration of Learning Management Systems (LMS) in Egypt. Given the widespread reliance on this form of technology, the researchers sought to examine learner expectations and behavior in order to understand how best to develop effective implementation strategies. Focusing on the specific cultural context of Egypt, the chapter identifies a number of factors that influence learner behavior and articulates a model—the Technology Acceptance Model (TAM)—to theorize a range of variables that are central to the process. These include self-efficacy and system quality. Findings from the data underlined the importance of system quality in terms of the ease of use and usefulness of the learning management system.

Chapter 7, “The Application of Affective Computing Technology to E-Learning,” considers an area of research relating to intelligent computer-assisted learning. Affective tutoring systems are e-learning applications that are able to respond to learners’ behavior. Designing and implementing these systems has been complicated by the importance of non-verbal communication implicit in human social intercourse. The difficulty of designing computer systems to recognize this level of complex communication has been labeled the “affective gap.” The chapter explores how new forms of affective computing attempt to close this gap by designing human–computer interfaces that recognize these forms of behavioral and emotional communication. The chapter discusses developments in this field as well as relevant theories of learning
relating to them. Building on this, research is examined which focuses on how digital technologies can infer affective states in human communication. In this respect, there are 2 main types: 1) methods that require the user’s input, and 2) those requiring input methods that are independent of forms of user input. Of these 2 categories, the latter is particularly interesting to future research in the field as it provides the potential for a more natural interface that will recognize a wide range of communication patterns, such as vocal patterns, facial expressions, and physiological state. Chapter 7 concludes by providing a useful summary of current research and the potential for future research developments in this fast moving and influential field of Web-based learning.

Building on previous contributions from the field of language learning technologies, chapter 8, “Writing and Culture in CALL: 21st Century Foreign Language Learning via Email Tandem Exchanges,” by Reyes Llopis-García, investigates writing in the English as a Foreign Language/English as a Second Language classroom. Telecollaboration research projects using synchronous and asynchronous technologies have been prominent over the last decade. Such research has highlighted the importance of integrating both linguistic competence as well as intercultural communicative competence. The project presented in this chapter continues this theme but does so by concentrating on developing learners’ writing skills through the use of a tandem project to foster what it calls authentic cultural learning. The tandem project utilized email and involved 94 intermediate level students working in 47 dyads drawn from Columbia University/Barnard College in New York and the Universidad Autónoma de Madrid in Spain. The research took place over 3 years between 2010 and 2012 and was driven be a number of objectives. These included focusing on how to enhance learners’ English writing skills, developing their cultural awareness through language learning, familiarizing learners with peer review processes, and encouraging acceptance of regular self-assessment as a means of raising awareness among learners of the need for their own active involvement in the learning process. Findings from the project suggest that learners viewed the combination of cultural and linguistic competence favorably and that improvements in both written English language proficiency and lexical development were identified.

In Chapter 9, “E-Learning Readiness and the Effects of Organizational Culture,” Hosseini, Salimifard, and Yadollahi focus on the important issue of how an institution’s organizational culture can influence and affect the integration and direction of e-learning initiatives. Based on a sample of 68 participants, a survey was used in the research to investigate to what extent an organizational culture is ready for e-learning integration. Data analysis using the Beta coefficient test suggested that there was a positive impact of Clan and Adhocracy cultures on e-learning readiness and that Market culture may have a negative impact on the process. The research identifies the importance of considering the wider sociocultural context and macro level analysis that will be beneficial in a range of cultural contexts in which e-learning is becoming more prominent as a solution to educational underachievement.

Research on testing in the context of e-learning has been a significant area of potential for the last few years, driven by developments in intelligent computer-assisted learning. This is the subject of chapter 10, titled “A Software Platform for Enhancing Integrity in Online Testing,” written by Westin from the University of Rhode Island. At the heart of the issue is the design of e-learning testing systems that are rigorous, effective and have a high level of integrity and coherence. The research outlined in this chapter centers on a software platform that is designed to maintain these characteristics of Web-based examinations. The custom-designed application is entitled eTAP or the Electronic Test Administration Platform. It was designed in response to a specific educational context and with the aim of hindering e-cheating as well as incorporating real-time attendance monitoring and activity logging. The system has the advantage in that it incorporates a software sandbox mechanism that enables it to add a high
degree of control to the process and to limit functionality when and where required to a relevant area of
the Web. Testing and examinations in online environments will be a significant area for research over
the next decade as digital technologies and applications develop in response to security and interactivity
and this chapter will be beneficial for those involved in this highly dynamic field of research.

In Chapter 11, “Online Courses and the Job Satisfaction of University Professors,” Scott Reid dis-
cusses findings from a qualitative research study with 32 participants. More e-learning research on job
satisfaction is required and the study provides a fascinating insight into the perspectives of university
professors on a subject that should be of widespread interest across the field. Findings suggest that
while a number of issues such as work satisfaction are highly subjective and personal, other themes of
wider significance did emerge, such as how to interact effectively with learners online and the need for
opportunities to experiment with online environments and new forms of pedagogy. Addressing these
perspectives over time, the research study should be of value to administrators and researchers who
require an in-depth appraisal of faculty perspectives on the opportunities and challenges presented by
the adoption of e-learning systems.

Chapter 12, “The Agile Hour in a Virtual World: Teaching Agile Methods with Open Wonderland,”
focuses on multi-user virtual environments or MUVEs that have become increasingly prominent as col-
laborative learning spaces, particularly for virtual teams. The chapter investigates a study incorporating
a design-based approach, which evaluated a virtual agile software development workshop hosted in the
Open Wonderland MUVE. The chapter explores the approach through a reflective process involving
multiple iterations, tracing the implementation of the workshop and critically analyzing the philosophy
and artifacts involved. The chapter concludes by articulating the key insights from the process and re-
reflecting on the learner perceptions and practical ramifications of the project for wider use.

In Chapter 13, “The Role of Strategic Management Simulation as a Tool for Teamwork KSA Learn-
ing,” Pérez and Cruz consider how virtual environments can enhance team working, particularly in the
area of Knowledge, Skills, and Abilities (KSA). Findings from a study of the strategic management
simulation with undergraduates studying in a School of Business are discussed. Findings suggest that
simulations demonstrate the importance of individual knowledge in team building and development,
while a range of other variables, such as intelligence, personality, attitude to teamwork, and teamwork
self-efficacy, are rejected.

In the final chapter, “Environmental Science Education in the 21st Century: Addressing the Challenges
and Opportunities both Globally and at Home through Online Multimedia Innovation,” McLaughlin and
Baker synthesize a number of themes that have been integral to the collection as a whole. The chapter
highlights the importance of moving science education from instructor-centered modes of delivery and
responsibility to those that provide opportunities for learners to engage in higher-end enquiry, analytical
and critical thinking skills. Using multimedia tools to stimulate learner interaction in classroom environ-
ments is central to this re-articulation of education in a 21st century context. One particular module (the
“Chance” research module) is examined in detail, particularly in relation to its use with undergraduates
and the analysis of authentic research data derived from international environmental science. The chapter
explores the benefits and opportunities presented by this approach in science education and foregrounds
the implications for assessment research.

Overall, the 14 chapters in this collection demonstrate the continued importance of more high quality
research on e-learning pedagogy. An evidence-based approach is essential if the field is to continue to
advance as new digital technologies emerge on a regular basis (Selwyn, 2011a, 2011b; Selwyn, Potter,
& Cranmer, 2010). Researchers need to respond to these environments with approaches and rigorous
research methodologies that attempt to present a more holistic understanding of the complex array of
variables and data that are evident in digital environments (Bennett, Maton, & Kervin, 2008). The field of e-learning and Web-based learning depends on moving beyond the dominance of experimental and lab-based studies to engage with learner and instructor perceptions and reflections, and to consider the function of applications and technologies “in the wild” and in naturally occurring learning environments (Lave & Wenger, 1991), both inside and outside traditional institutional contexts (Ito, 2009).

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REFERENCES


