Preface

Technology is the very essence of development and it holds the key for bridging the gap between access to quality education and the need for enhanced learning experiences. Can we have a platform wherein we can share our experiences for technological adaptability and collaborative strategies for sustained development of education across the globe? How are the organizations and institutions of learning in the developing and developed world adapting to advancements in technology for providing educational opportunities with a transnational perspective? Can there be an international platform for policy makers, educators and trainers, educational administrators and researchers contributing and sharing their experiences, ideas, attitudes and perspectives on how institutions in their respective countries are addressing Social, Technological, Economical and Political (STEP) dimensions? In a single volume, is it possible to have case studies on one hand from developed world for innovation and application of technology in education and transnational learning and on the other from the developing world for cost effective technology towards improved access and equity to education and transnational learning experience through international collaboration? These were the core questions in our mind when we thought of developing this book.

These thoughts have now given a shape to a book with case studies on divergent themes of personalized learning environments, e-learning and virtual learning, inclusive learning for social change, innovative learning and assessment techniques, technology in training and development, cost effective technology for access and equity in learning and growth, collaborated and networked learning environments, virtual learning in transnational perspectives, emerging technologies and accessibility, technology enhanced learning, technology and international partnership and transnational collaboration for enhanced access under the core domain of technological adaptability and transnational learning.

In all, 18 chapters in this book provide excellent case studies from the USA, New Zealand, Japan, Swaziland, Austria, Australia, China, Malaysia, Hungary, Guatemala, Israel and Spain. In a single book, it is interesting to read thought provoking cases on future studies, social spaces, virtual explorations via the high performance wireless research and education network, interactive simulation for training, online course for teacher education, Second Life, performance art in hypermedia and transnational collaborative cases on e-learning technologies, e-mail bridging the cultural gap, virtual classroom exchange programs, teacher development, online teaching partnerships and development workers. Besides, this volume has case studies on problem based learning, influences of social capital upon internet usage in Guatemala, comparative perspective of learning patterns and assessment of flexible e-learning vis-a-vis face-to-face campus and technology for enhanced access in Swaziland.

The first chapter by Gilbert Ahamer and Josef Strobl in this compilation of cases explores the mutual link between education, structural evolution, social spaces and institutional change. It builds a theoretical perspective on “Space” which according to the authors is understood as being created by social, specially communicative action and can hence be generated anew by pervasive learning processes.
Learning across social spaces means both intercultural and interdisciplinary learning and places learners into diverse systems of meaning. This approach is then substantiated with the help of a series of cases exemplifying international and cross-cultural exchanges for learning which is thought to be the key to a harmonious development of nations.

The chapter *Online Teaching Partnerships in Diverse Socio-Cultural Institutions* by Julian Scheinbuks and Anthony A. Pina, is a case of Online Teaching Partnership (OTP) involving three public universities in the United States which possess diverse student population. This online cross-disciplinary collaborative initiative facilitated interactions amongst students and faculty through synchronous and asynchronous distance learning technologies. Scheinbuks and Pina believe that this partnership resulted into many positive outcomes and met the basic goals of providing enhanced technological exposure to the students, making the faculty better competent in using technology for creation and modification of courses that use technology in different settings, developing online courses for degree completion, and encouraging and providing an enriched learning experience. This inter-institutional effort positively affected the students and faculty resulting into better educational experience, broadened outlook and made the course more interesting.

This chapter objectively measures whether flexible e-learning is as effective as campus delivery mode. This case study *Balanced Assessment of Flexible e-learning versus Face-to-face Campus Delivery Courses at an Australian University* by Kenneth Strang assesses this important aspect not only by performance and student satisfaction but by six factors linked to Australian university accreditation, namely, industry focus, resources/content materials, critical thinking activities, teaching quality, student satisfaction, and student performance (including completion). During the research, Strang observed that due to 2008 global economic crises, the international student market is changing which is forcing the universities to change what and how they offer higher education in the future. While the case provides some ideas and benchmarks for competitive higher education, simultaneously it also explores the viability of Australian higher education model from international perspective.

With the increasing number of students at the post-secondary level, a need has been felt for developing viable alternative mode of providing education in developing world. This will help to provide adequate quality higher education facilities to the students. So more and more universities are turning towards distance education (DE) and/or a blend of conventional face to face (CF2F) and online learning methods for imparting education. Responding to similar needs, the University of Swaziland established the Institute of Distance Education (IDE) in 1994 to increase access to university education by offering its programmes through distance education. This successful attempt has however led to a number of challenges facing IDE that hinder in the realization of its goals. This chapter by Walter Sukati argues for the use of online learning, and the need for a new strategic plan for the University. The author believes there is a need for harnessing the new technologies in DE and in CF2F learning methods and thereby blur the boundaries between the two modes.

The author of *Using Portable DVD Players to Deliver Interactive Simulations for Training Health Care Workers in Kenya*, Hannum Wallace believes technology-based learning using simulations such as portable DVD players holds great promise as an alternative or supplement to traditional classroom-based training in low-resource settings. This case study looks into technological interventions for providing training to health care workers in Kenya. It reports on a project in Kenya for using interactive simulations by portable DVD players for providing continuing education to nurses at their workplace without compromising with their professional commitments. This study demonstrates that technology can bring learner-centered interactive video simulations for consistent content and uniform learning experiences towards significant learning gains.
Elizabeth A. Beckmann and Patrick Kilby in the present case study describe the STEP factors impacting on transnational learning in Master of Applied Anthropology and Participatory Development program at the Australian National University. The case shows how flexible delivery of education allows development workers to continue their career progression while remaining fully active in the field, and enables them to engage in stimulating high-level discourse with their development practitioner peers as they apply theory to practice and thus enhances their day-to-day work activities.

The seventh chapter of the book by Wu Bing, Teoh Ai Ping and Ye Chun Ming provides a comparative study on vital aspects of learning and learner’s interaction in the Learning Management System of universities in China and Malaysia. It looks into the varied and important dimensions of online learning such as teaching and learning, the role of the teacher, communication patterns in the virtual scenario, learner-tutor relationships and attitudes towards learning achievement. This case also explores the influence of national culture on learners’ interaction in virtual learning environment.

This case focuses on a transnational teacher development program, the European Pedagogical ICT License (EPICT), which equips the teachers with the requisite skills to use information technologies with greater efficiency in their everyday practice. Beyond introducing the program through the Hungarian experience, the present state of teacher training is discussed by Katalin Csoma, under transformation in line with the Bologna process and the joint European harmonization of education systems. It examines how alternative forms of learning and international collaboration and networking bring about changes to the teaching profession in Europe and other affiliated countries.

Can the systematic and analytical study of the future help the students to shape their future with desired set of outcomes? The ninth chapter of this book by Michael Vallance and David L. Wright attempts to address this strategic question. It illustrates how a Futures Studies approach encourages Japanese students to strategically analyze their futures by anticipating problems and stimulating collaborative solutions. The studies in the chapter Japanese Students’ Digitally Enabled Futures Images: A Synergistic Approach to Developing Academic Competencies support that the students become active participants of a learning process by creative digital media integration which results into measurable outcomes of academic competencies. The case explores two foresighting contexts i.e. local community and personal employment futures and the data from both the contexts are analyzed to assess the effectiveness of digitally enabled Futures Studies so that academic competencies of students in Japanese Higher Education can be promoted. The article concludes with personal critiques from digitally enabled learning and Futures Studies perspectives.

The tenth chapter of the book is a case study by Deryn Graham that looks at the creation of a Transnational Framework for e-Learning Technologies. The author attempts to describe how the original study which aimed to “Develop a Framework for e-Learning” has gone through several iterations from e-Tutoring/e-Moderating to the adoption of Blended Learning as a solution to problems revealed by the Framework. The author also highlights challenges of e-learning such as other forms of interaction and their requirements in developing the framework. The author has explored e-Learning in terms of PESTE (Political, Economic, Social, Technical and Environmental) factors, and led to the realization of major external issues for e-Learning. Most recently, the study evolved to revisit e-Learning from an HCI and Computer-Supported Cooperative Work (CSCW) perspective, by applying a Cooperative Work Framework.

This case study presents the challenges and successes experienced by a university while attempting to offer a course in Second Life, a new online virtual learning environment (VLE), which is community driven and connects individuals through a new, avatar-driven interface offering spontaneous experience and companionship. The authors in this chapter Jace Hargis and Kevin Yee are of the view that overcoming the resistance towards change requires many aspects—innovation, expertise, funds, culture, persistence,
attitude, collaboration, willingness to take risk and possibly open to experiencing a failed event and above all, a necessity for addressing the individual needs of student learning. The authors also believe that the success of this new VLE in higher education largely depends on the ability of the institutions to develop networks and reach outside of those networks for expertise, input, and commitments.

The subsequent chapter by Douglas Tedford is a case study for identifying the influences of bonding, bridging and linking social capital upon teacher Internet usage in the rural Guatemalan town of San Lucas Toliman by a collaborative effort of the author as a facilitator here with the Fundación Rigoberta Menchú Tum in Guatelmala. Employing Participatory Rural Appraisal, community perspectives were invited for identifying the study problem, designing interview questions, and evaluating data. The research findings revealed that bonding and bridging social capital influences of family, friends, technology experts and school administrators were found to have significant positive and negative implications on teacher decisions to use the Internet in a region with inadequate buying power and limited telecommunications infrastructure.

The present case is an example of learning the performance art i.e. a dynamic, ill-structured knowledge domain in a hypermedia environment. The authors Billie Eilam and Ofir Gortler opine that interpretation of performance art is highly complex, but is important in visual culture. Generally, this learning environment enabled most students to overcome some of the difficulties involved in this dynamic visualization, but presented them with other difficulties. A careful consideration of these issues as related to the design, by curriculum developers and teachers may yield a successful students’ performance. This case examines the students’ performance art interpretation when they are learning and interacting with information in a hypermedia-based environment. The case illustrates how students learning art experienced for the first time the processes involved in the interpretation of a dynamic performance art in a hypermedia-based learning environment. The case explores learning a hypermedia–based curriculum unit concerning this complex skill, and concludes how to transfer this acquired knowledge for interpreting a new, different artwork. Cognitive aspects of students’ profiles of understanding and models of enactment i.e. the multi-stage interactive model, the model of intermediate stages, and the deficient stages model are described in this chapter.

Sandra Wilson Smith in this study focuses on the ways by which discussion through email can be incorporated organically into a learning/writing task, and how this discussion can be student-framed. She states that the fact that the students initiate the email communication of their own volition taps into the positive qualities that computer-mediated communication (CMC) has and it can assist in bridging the cultural gap experienced in the learning process by transnational students who are less familiar with social, political, and cultural issues in theme based composition and rhetoric courses.

In the next chapter Integrated Cross-cultural Virtual Classroom Exchange Program: How Adaptable Public Schools are in Korea and the USA authored by Eunhee Jung O’Neil, the author discusses the adaptability of public schools in Korea and USA in a cross-cultural virtual classroom exchange program i.e. International Virtual Elementary Classroom Activities (IVECA) which is designed to provide cross-cultural learning opportunities by using ICT to effectively develop intercultural competence through public school curricula. The overall objective of this paper is to suggest strategies for international collaboration with education stakeholders to disseminate the cross-cultural virtual learning in public schools worldwide. This paper attempts to investigate technological, pedagogical, and organizational factors responsible for the adaptability of public schools in Korea and the USA with respect to integrating cross-cultural virtual exchange activities within their respective curricula.

Kimberly Mann Bruch and Hans-Werner Braun of San Diego Supercomputer Center and Susan Teel of National Park Service, California Mediterranean Research Learning Center have authored this chapter wherein they have discussed case studies of distance learning experiments conducted at National
Science Foundation funded High Performance Wireless Research and Education Network (HPWREN) connected science sites such as California Wolf Center, Cabrillo National Monument, the Palomar Observatory, and the Santa Margarita Ecological Reserve. The paper also explores the technology transfer activities that enable Live Interactive Virtual Explorations (LIVE) hard-to-reach science sites and an array of education communities.

This case study illustrates the practical experience in a Model Rocket Workshop (MRW), where students design, simulate, build, test and launch a small model rocket. The workshop itself provides a learning experience which is a Problem Based Learning (PBL) involving group puzzle technique and covering a wide spectrum of educational aspects, ranging from theoretical disciplines, such as fluid dynamics and rocket dynamics, to topics more related to experimental work and hardware utilization like the certification of the rockets, as well as the rocket altitude measurements. The case in this chapter attempts to explore some problems and improvements, academic results and lessons learned from the PBL approach in MRW. Finally, a series of new ideas related to MRW and the subject it belongs to are presented.

Finally, the chapter on using How People Learn (HPL) framework as the conceptual model to examine online courses in a teacher education program for evidence of high level learning outcomes by Sharon Dole and Lisa Bloom, demonstrates that this framework provides a powerful structure for creating and assessing environments conducive to the work of prospective professionals. This study assumes significance in the wake of growing demand for online teacher education programs not only in the United States but also in other countries.

The case studies in this volume evidently point towards an important fact that the technology is one of the principle catalysts for transnational collaborative interventions in providing learning and professional development opportunities to the people both in developed as well as in developing world. More so, collaborations with the help of technological innovations are instrumental in bringing the educational prospects to the people in the lesser developed part of the world thus providing them the much needed support required for their socio-economic development.

Finally, we as editors of this volume would like to extend our sincere thanks and gratitude to the authors of the case studies who shared their valuable experiences and insightful thoughts making this an excellent platform for presenting innovations in technological adaptability with a transnational perspective. It is hoped that the readers will find this book useful and it will prove to be an interesting reading for all those in the field of education and technology. We also take this opportunity to thank the IGI-Global team for being so supportive and helpful in every phase of the development of this book.

Siran Mukerji
Purnendu Tripathi
Editors