Why technology? Technology has spawned a sphere of influence that encompasses a profound impact on the world of education. It alters teaching, learning, and thinking. The trend of higher education in the 21st century will continue to experience enormous growth in the areas of information and communication technology. Although technology is not the solution to poor teaching, it is clear that technology is facilitating the move from curriculum-centered to learner-centered, from individual to collaborative tasks, and from passive learning to active learning. Web-based learning, e-learning, online learning, technology-mediated learning, and technology-enhanced learning are the realities of today’s education.

Personal computers have developed into powerful and inexpensive machines capable of multimedia presentations using graphics, animation, audio, and interactive video. As computers have become smaller, more powerful, and more cost-effective, their use in educational settings has increased rapidly. The software has followed this advancement and has become easier to learn and more user friendly. One of the significant technological innovations in this digital age has been the Internet. Certainly Internet technologies increase communication flexibility while reducing cost by permitting the exchange of large amounts of data instantaneously, regardless of geographic distance (McNeal, Tolbert, Mossberger, & Dotterweich, 2003). Today’s reality makes clear that through Internet technologies, the learning process will never again be contained within a restrictive area.
What This Book Is About

This book explores a range of demanding challenges of technology-enhanced learning providing background information, and makes future predictions about educational technology for those interested in higher education, yet restricted by geographical distances such as the Asia-Pacific region. We were motivated to write this book because of the need to encourage collaboration across geographical borders to promote information literacy to facilitate the learning process, and to establish a greater infusion of technology throughout the Asia-Pacific region. This book is intended as a teaching resource. We look clearly at the impact of online Distance education (DE) programs, articulation issues, faculty computer competency levels, and offer solutions for policy makers and educators to remain current with basic technological applications. We explain how education is no longer confined to a geographical space and we offer a model to all interested in promoting quality higher education across geographical and cultural borders. Therefore, with the emphasis on faculty experiences and efforts to enhance higher learning in less developed regions such as Guam and Micronesia, we offer practical cases of teaching applications involving information technology. Sprinkled across the vast Pacific region, higher education teachers in the trenches share their fascinating journeys in the process of keeping pace with change and the challenges of technology-enhanced learning. We intend for this book to have understandable information and helpful resources and to be most useful to individuals who are enthusiastic about the potential of technology to improve higher learning. This book is a readable resource for educators to reference teaching examples that are relevant to a university or college setting.

Principal Objectives of this Book

We expect this book to be an insightful, practical guide for educators, with an emphasis on the following five principal objectives: (1) to examine educational technology, learning theories, human learning and cognition, and the multicultural implications of the Asian-Pacific region, (2) to provide firsthand experiences in which higher learning and educational technology have become successful academic partners, (3) to explore the impacts of technology integration in geographically remote regions such as Guam and Micronesia, (4) to assess technology reluctance among university faculty members and to offer remedies for keeping academics in stride in this digital age, and (5) to discuss the e-learning journey and associated challenges for the 21st century.
More specifically, the authors of this book (1) share with agriculture teachers throughout Micronesia the fascinating firsthand experiences from the initial design to the final assessment of a pioneer grant program to provide a DE baccalaureate degree, (2) encourage readers to expand their perspectives of educational technology to view applications with a broader lens, stepping outside their own technical environments to consider the vast Asia-Pacific region where technology becomes a global tool and opportunity involving 26 languages and a range of cultural traditions, (3) explain reasons for technical apprehension among faculty and offer institutional approaches to developing and sustaining appropriate levels of educational computing expertise to remain current, (4) address global language with emphasis on a unified global English as one solution for offering an equitable platform for academic programs across vast and multicultural regions, while remaining sensitive to the various versions of English, (5) offer future predictions in which technology will impact the Asia-Pacific region involving methods for establishing collaborative policies, hardware and software applications, and areas in which literacy and cultural aspects of the Pacific communities will be enhanced, and (6) provide examples that delve into the promotion and tenure process to look at how institutions regard technical innovations and applications during the peer review process.

The Audience for this Book

Although the audience for this book is not limited to the educational community, it goes beyond a discussion of online DE, providing a look at cultural and lifelong learning contexts and applications. The goal of the book is to appeal to individuals with a professional interest in colleges and universities: professors, researchers, librarians, learning resources directors, media specialists, directors of instructional design and development, coordinators of information and communications technology, curriculum and instruction supervisors, computer training personnel, software and courseware designers, and lifelong learning program directors.

How This Book Is Organized

This book falls into five parts and contains a total of nine chapters. Section I has one chapter and provides an introduction to Guam and Micronesia that
will elaborate on the rich and unique qualities of this region as a case study site. In particular, Guam is comprised of diverse ethnic elements that draw its strength from Asian, American, and European sources, though the Chamorros (the indigenous people of Guam) still constitute the largest group and still control the political structure of the government of Guam. Guam is a regional learning center in the western Pacific.

Section II consists of two chapters and discusses the connection between educational technology and human learning. Chapter II is an overview of educational technology and instructional media, in addition to a seminar report on U.S. government e-resources. Chapter III discusses educational technology and learning theories, and also provides a discussion on human information processing theory. One of the central metaphors of the information age is that the human mind is a computer. Just as the human mind has functions that receive data, store them in memory, and retrieve them as needed, the computer has functions that accept data, process them, and display information. Today human information processing theory is particularly applied to cognitive development, looking at knowledge bases, strategies for dealing with cognitive material, and self-awareness as a knower or as a processor of information (Lefrançois, 1999). Chapter III focuses on human learning and information technology, comparing cognitive theory (which views learning as an acquisition of knowledge and cognitive structures because of information processing, focusing on the brain processing such as the memory) with behavior theory (which views learning as a change in the frequency of behavior as the consequence of environmental events, focusing on the way in which the stimulus-response relationship is formed).

Section III consists of three chapters and focuses on faculty’s voices regarding technology integration. This section begins with Chapter IV, which presents higher education faculty experiences in teaching with educational technology in Guam, and Chapter V continues by focusing on the experiences of college and university teaching with educational technology throughout Micronesia. The highlight of these two chapters is the faculty’s voices concerning professional development for technology integration, the connection of technology to student learning, hands-on technology use in teaching, and technological literacy to support meaningful learning. Chapter VI deals with technology competency and associated challenges among faculty members in general, with a focus on the cases of Guam’s faculty members in particular. Like any other educational innovations, when used for the purpose of the teaching-learning process, technology needs to be accepted by teachers before it can be utilized productively and effectively.
Section IV has one chapter that discusses e-learning, online learning, and distance learning based on three online programs in higher education, and examines the critical issues in online DE in Micronesia. Challenges involving DE are not new in the American Pacific. An article titled *From Coconut Wireless to High Speed Video Teleconferencing* states as follows:

*When ADAP’s (Agricultural Development in the American Pacific) five Land-Grants joined forces in 1988, fax machines, computers, and even telephones were scarce in some locations. Investment in a communication system became one of ADAP’s first priority purchases, starting with hardware, such as fax machines (and for some, phones), and later computer hardware and software. Computers were followed by on-site computer training to develop local staff capacity.* (ADAP, 2004, p. 1)

In Chapter VII, the authors emphasize that technologies today have begun to globalize educational opportunities, especially in language literacy and training, while accommodating multicultural diversity. A regional project titled the University Challenge Grant Program is described in detail as to how this particular DE program had been designed, implemented, and evaluated. Finally, Section V of the book, consisting of two chapters, is about technological values and challenges in the Asia-Pacific region. Chapter VIII focuses on academic digital database resources that support those involved in education programs and higher education research in all capacities. The prevalence of specific databases focused on academic and scholarly clientele, accessible by remote areas such as the Asian Pacific region, is “reaping the benefits of information and communication technologies” (Rao, 2003, p. 48). In this chapter, the authors identify scholarly databases as well as specific gateways to U.S. government information available on the Web, representing a sampling of resources either initiated by academic interests or a source for the dissemination of public information. In Chapter IX the authors discuss future directions of technology-enhanced teaching and learning in general; in particular, they identify a range of opportunities, challenges, and strategies of educational technology appropriate for the Asia-Pacific region. These new directions for teaching and learning with instructional technology include both the critical and changing roles of higher education faculty and policymakers. The purpose of teacher education is the self-development of the teacher, and the ultimate goal of education is to enhance the students’ development and learning. No matter how technology plays an increasing and necessary role in
learning today, every teacher in higher education faces four areas of concern: (1) designing and preparing courses, (2) teaching and lecturing in the classroom, (3) assessing student learning, and (4) evaluating the effectiveness of teaching. Teaching is very complex and demanding, especially in a diverse learning environment. The ongoing faculty development of those currently in the teaching force is the key to educational improvement, which, in turn, helps and facilitates students to live and to work in today’s global world. Education itself is becoming a global product, having a definite practical application, such as information technology as used on the Internet. Higher education in contemporary times must be understood as a globalizing process. This process includes an important mission of higher education to assist students in participating in the global economy. For this reason and to facilitate the practical application of human learning concepts, the authors provide an education essay at the end of each chapter. Higher education faculty members are defined as teachers, scholars, and researchers. Keeping this notion in mind, each essay is also a reflection related to faculty development to motivate and engage students in ways that are consistent with teachers’ philosophies of teaching and learning and also consistent with theories of development, motivation, and learning.

Unique characteristics of this book can be summarized as follows: the authors of this book through firsthand experiences, (1) provide a window on technical approaches and applications in higher education, (2) address cultural diversity among faculty and students as a natural resource, (3) march forward by addressing faculty members’ technological reluctance and provide remedies for academic technophobes, and (4) with the objective of enhancing teaching effectiveness and efficiency with technology, link theory to practice. Further, from an international perspective, the authors (1) look at global language, computer literacy, and a variety of ways to reach diverse learners, and (2) provide a comprehensive study of educational technology and its applications, including identifying the responsibilities of both faculty and administrators to support and take full advantage of technology initiatives and investments.

It is intended that this book, which contains instructional technology case studies based on faculty technology experiences voices regarding technology, library services, electronic resources, and global language in the Asia-Pacific region, will be instrumental in promoting and advocating information and communication technology in higher education. Finally, of great significance to the authors is that this book will inspire tomorrow’s communities of e-learners and will
serve as a practical tool for all devoted to emerging partnerships of digital information and the processes of teaching and learning.

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