

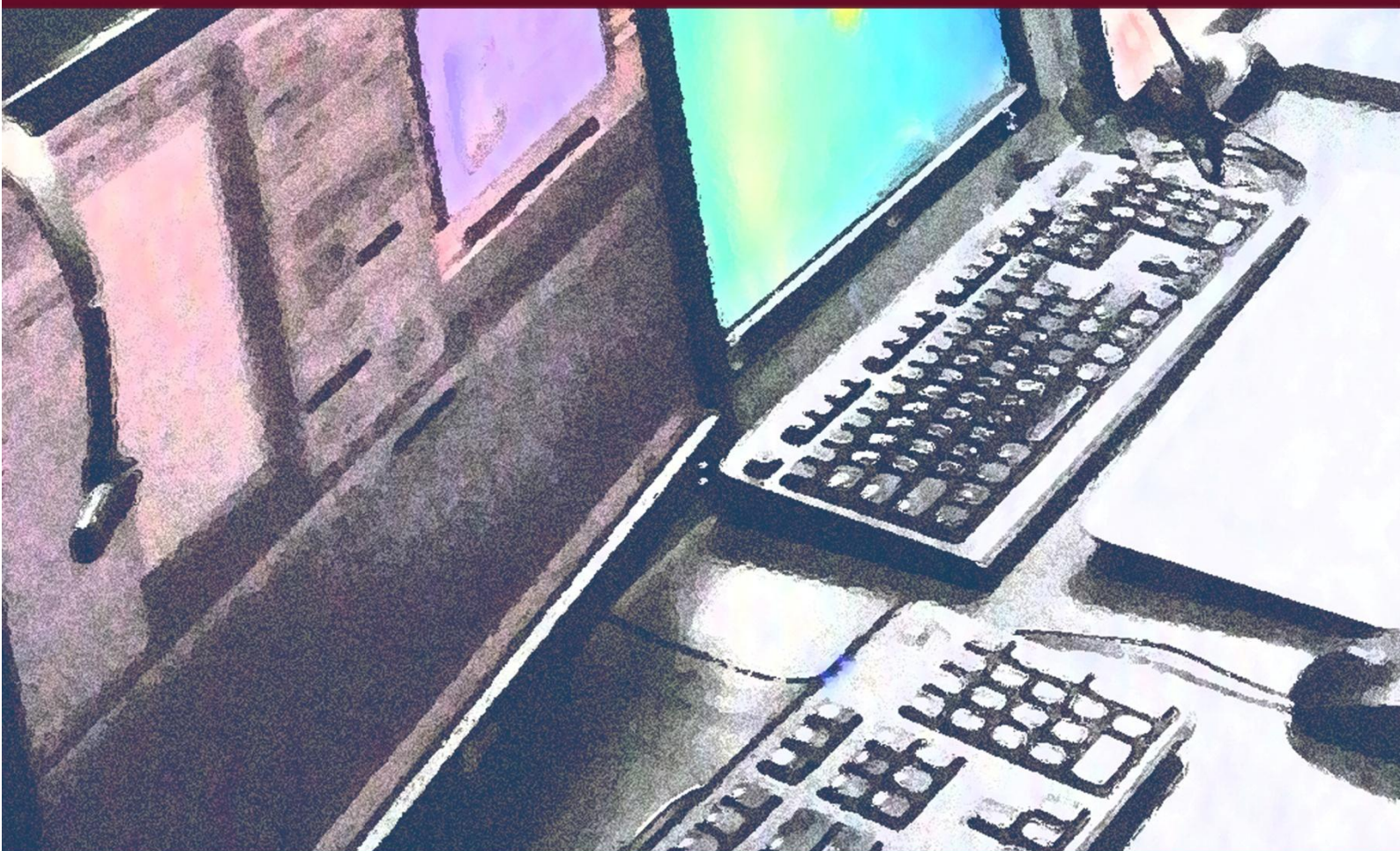
INTERNATIONAL JOURNAL ON



Vol. 1, Nos. 1 & 2

University of the Philippines Open University
Los Baños, Laguna, Philippines

ISSN 2467-7469
(December 2015)



Vision and Mission of the IJODEL

Vision

To be a leading international academic journal that publishes and disseminates new knowledge and information, and innovates best practices in open distance electronic learning.

Mission

The IJODEL shall publish and disseminate new knowledge and information based on original research, book reviews, critical analyses of ODeL projects and undertakings from various researchers and experts in the Philippines, the ASEAN Region, and the world, and concept articles with the intention of presenting new ideas and innovative approaches to interpreting and implementing best practices in open distance e-learning as alternative delivery mechanism for quality education.

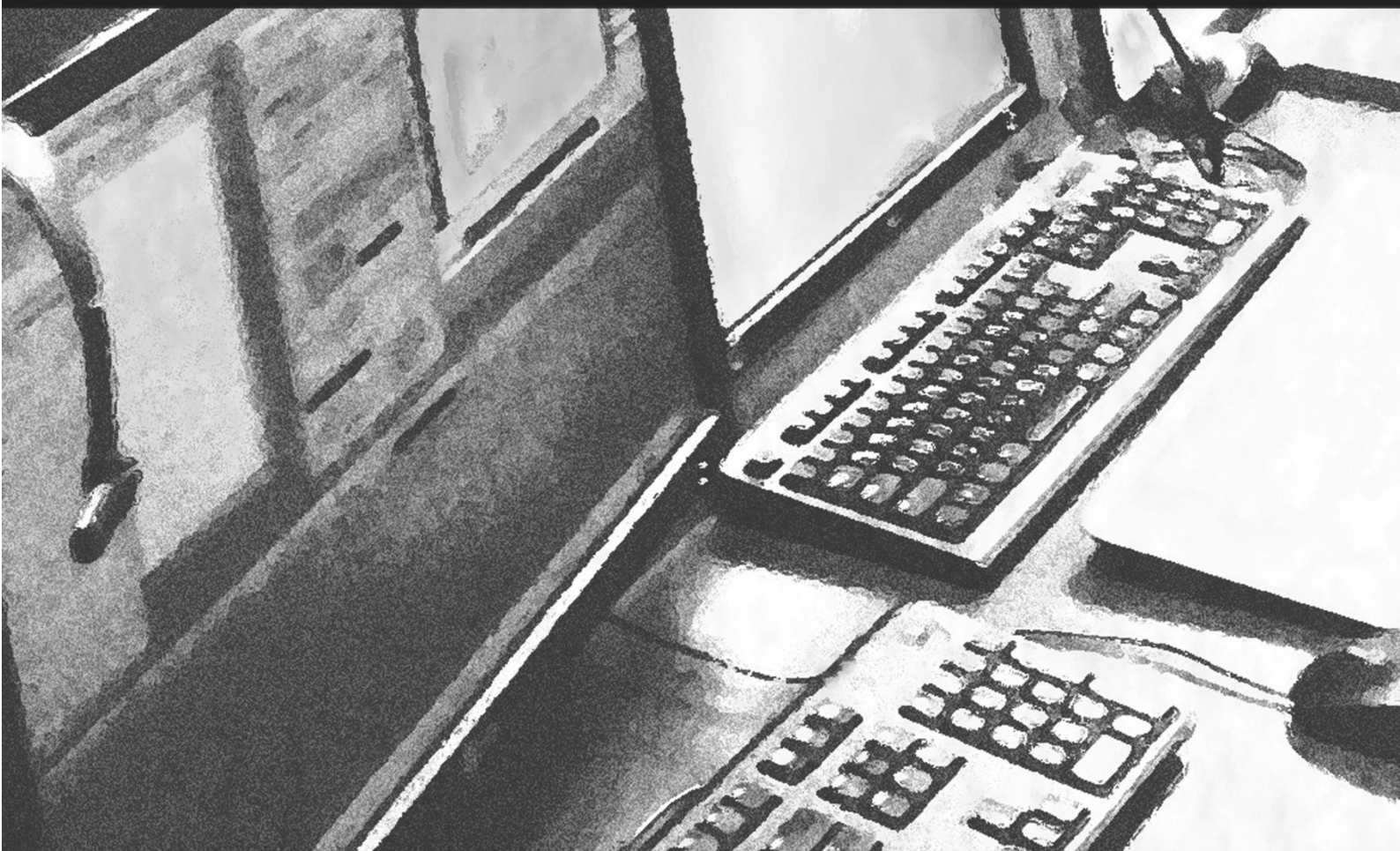
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International Journal on Open and Distance eLearning



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Welcome Message from the Chief Editor

It is with great pleasure that I welcome you to the International Journal on Open and Distance electronic Learning (IJODEL). This is our first issue. Yes, we are aware of the existence of the International Journal of Open and Distance Learning (IJODL), which we consider to be a worthy compatriot in the efforts to promote open and distance education worldwide. The IJODEL, however, focuses on the aspect of electronic or electronically mediated learning, which could very well be undertaken in an over-all conventional means of instructional delivery. It is the “electronic” means that this journal wishes to focus attention to as we do expect more cutting-edge studies and technologies in this area over time. This has become important to the publisher, the University of the Philippines Open University (UPOU), as it is this field that the UPOU has been fully operating within.

The content of ODeL shall be subject to high-level discourse through the articles that shall be published in the IJODEL, hence such is not discussed in this welcome note.

What we would like to do is give our readers assurance about the values and ethics that we go by. We are focusing on two major issues here.

First, over and above all else, we put extremely high premium on the appropriate and rigid process of peer review. All articles published in this journal, therefore, are subject to blind reviews.

Second, we shall strive to publish this journal on a regular basis. We take this to mean we shall comply with all the necessary ethical and publication standards expected of academic journals worthy of their name. Among other things, we wish to highlight the fact that the IJODEL shall not charge any publication fee from authors. Our main basis for publication will be worthiness of publication as has been determined through rigid review process. If articles are worth publishing, then they are worth publishing. There should be no need for the authors, who have expended effort, intellect, and time to write such good articles, to pay for the publication of their work.

During the soft-launching of this journal on November 5, 2015, during the 4th National Conference on Open and Distance e-Learning in Manila, we made a public commitment to publish a good-quality academic journal. This, we shall strive to achieve with all the help and assistance we get from our readers and colleagues in the field of ODeL.

I take this opportunity to invite all of you to share the fruits of your intellectual efforts and pursuits in the field of ODeL with our readers. Submit your articles to the IJODEL for publication consideration. We shall be so glad to receive them at any time. This is an open invitation on continuing basis.

Felix R. Librero, PhD

Professor Emeritus and Chief Editor

Editorial
Volume 1, Issue Numbers 1&2

We are pleased to launch the maiden issue of the International Journal on Open and Distance eLearning (IJODEL), a university-based academic journal dedicated to the study and pursuit of open learning, distance education, elearning, mobile learning and other related concepts through research-based and conceptual papers, reviews and commentaries to further the understanding and appreciation of the theory and practice behind open and distance elearning. This first issue of IJODEL is introduced by a defining article that presents open and distance elearning (ODEL) as a world view providing a framework with which to organize theorizing, research and practice in the field of open and distance elearning.

The lead article, “Open and Distance eLearning: New Dimensions in Teaching, Learning, Research, and Extension for Higher Education Institutions” written by Grace Javier Alfonso and Primo G. Garcia, suggests that the philosophy of openness, the affordances of distance education and the modalities of elearning imbued with the university value system and operating in a digitized and connected world can lead to social transformation. Further, it shows the relevance of the ODeL framework in the higher education context particularly in relation to its teaching, research and public service functions using the experiences of the University of the Philippines Open University (UPOU). It recognizes the role of information and communication technologies in contemporary education and espouses the use of open educational resources (OERs) in a culture of sharing that could be exemplified by the concept of a knowledge hub bringing together all elements of 21st century education in a digital environment.

Central to a digitized teaching and learning environment, ubiquity and portability are affordances of ICTs that are recognized as enhancing the learning process. In this issue, three articles deal with mobile learning in the Asian educational context. Tuliao, Duldulao, Pagtaconan, and Galang presented a mobile learning tool for Kindergarten which provides a new learning pedagogy integrating ICTs in the learning process. The study focused on the development of the “iSuro”, a mobile learning application. The iSuro provides a new tool in teaching and learning in the Kindergarten curriculum, digital information content, a user-friendly environment, and a solution to the scarcity of learning materials.

Similarly, the paper by Miguel, Salvador, Guillen, and Nisperos presented the results of a research on mobile application as a supplementary tool in teaching Philippine history. “HiStorya” is an interactive mobile game developed using the Android platform; the Digital Game-based Learning-Instructional Design Model was used to evaluate the mobile application. The topics, teaching methods and evaluation techniques of teachers, and game preferences of students were identified through surveys and interviews. The immersive, challenge, and reward aspects of the game were shown to motivate the students to study and learn more about the country’s history. Teachers identified the game statistics report generated by the system as a useful aid to evaluating subject proficiency level of students.

Following is Ahmad Sobri Shuib and Muhammad Nidzam Yaakob’s article on the perceptions and willingness to use mobile equipment and mobile technology among 120 randomly selected pre-service teachers in the Institute of Teacher Education Campus Darul Aman, Malaysia. The study reported that pre-service teachers had a positive attitude towards the use of mobile technology in teaching and learning.

Finally, in this maiden issue, we feature a historical report on the journey of the University of the Philippines Open University (UPOU) as it responded to challenges in the learning environment through its 20 years of existence. Written by Felix Librero, UPOU's former Chancellor, the account details the technological, organizational, socio-political and academic antecedent events that played out at critical stages of UPOU's development as an institution. The article narrates how UPOU addressed salient issues of online learning leading up to a collective and continuous effort to understand the emergent concepts in open and distance elearning.

Melinda F. Lumanta, PhD

Vice Chancellor for Academic Affairs

Table of Contents

Editorial - Volume 1, Issue Numbers 1&2

Melinda F. Lumanta

Articles

- Open and Distance eLearning: New Dimensions in Teaching, Learning, Research, and Extension for Higher Education Institutions** 1-13
Grace Javier Alfonso and Primo G. Garcia
- Development of a Mobile Learning Application for Kindergarten: Process, Issues, and Challenges** 15-26
Darwin Paul C. Tuliao, Thaniel Jay G. Duldulao, Wilben Christie R. Pagtaconan, and Annjeanette Alain D. Galang
- HiStorya: a Game Based Mobile Learning Application** 27-40
Zeus Gean Paul R. Miguel, Ritzmann C. Salvador, Christian Jade D. Guillen, and Saturnina F. Nisperos
- Perception and Readiness of Pre-service Teachers on Mobile Learning** 41-54
Ahmad Sobri Shuib and Muhammad Nidzam Yaakob
- Special Report to the IJODEL***
- ODEL at UPOU: Some Historical Antecedents (How Did We Get Here, Anyway?)** 55-73
Felix Librero

Open and Distance eLearning: New Dimensions in Teaching, Learning, Research, and Extension for Higher Education Institutions

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Abstract

Open and Distance eLearning has helped evolve the idea of openness in education which expands to include the following (Alfonso, 2014):

Openness in admission policies; openness in credit recognition and accreditation; openness in delivery modes; openness in cost and affordability (some are free); openness in choosing educational track through multiple bridges and pathways, exits and entrances; openness in course design and evaluation; openness in strengthening digital literacies and e-pedagogies, emerging e-Research paradigms. The digitization of open and distance learning led to the Open Educational Resources (OER) movement and popularity of Massive Open Online Courses (MOOCs).

Based on UP Open University's experience in Open and Distance eLearning (ODEL), new dimensions of openness in instruction, research, and extension are explored, including the use of analytics in research, teaching and learning particularly in the areas of assessment and evaluation; openness in the shift from faculty-centered to learner-centered teaching; openness in flexible, distributed, blended, technology-enhanced and active learning; openness in the use of new digital technologies for course materials and for being in the core of teaching and learning process; openness in sharing resources and linking digital repositories; and openness in the use of Massive Open Online eLearning Systems as free and accessible to all.

Keywords: e-learning, open and distance learning, open and distance e-learning

Introduction

The 21st century has presented opportunities to educational environments in this ICT and digital age. Today's media connectivity, interactivity, and ubiquity provides a powerful platform to all thereby also strengthening the concept of learning for all. More than ever, higher education institutions are called upon to be more open (Morgan and Carey 2003; Irvine et al, 2013; Knox, 2013; Stewart, 2013).

Open learning is a philosophy of learning that is based on flexibility of access for equity in education. It is learner-centered, where learners determine what they want to learn, how, when and where they want to learn, how to get their learning assessed and determine their career direction.

While openness in distance education is very much tied to flexibility of the educational system, it can occur in any of the following various forms:

- Openness in admission policies
- Openness in giving credits and degrees
- Openness in delivery modes
- Openness in cost and affordability
- Openness in choosing one's educational track (open curriculum)
- Openness in course design and evaluation

These modes of openness have been applied in open learning institutions in varying degrees over the years. The idea of openness in education is not new. Even before the onset of digital media, people have always been hungry for open access to education. Peter and Deimann (2013) wrote a historical review on openness in education dating back to as early as the late Middle Ages. In the 14th century, public lectures were demanded to be held while affordable printed works were rampant in the 15th and 16th century. This was followed by the use of coffee houses as venues for research conversations and lectures in the 17th century, the founding of self-education societies in the 18th century, the establishment of miners' libraries in the 19th century, and the offering of distance education in universities like the British Open University, University of South Africa, and Indira Gandhi National Open University in the 20th century.

Drivers of Openness in the Digital Age

The arrival of the digital era and recent developments in the global economy has offered vast opportunities and challenges to universities worldwide. The globalization of ideas has increased the movement not only of products, but also of people and ideas. Information and communication technologies have also given rise to knowledge-based industries and jobs that were nonexistent several years ago. Compared to our generation, graduates of today are expected to change careers several times in their work life. The rise of the so-called network society shall further increase the mobility of professionals and require people to regularly acquire knowledge and skills in dynamic environments (Lundmark, 2010). As people and organizations expand their exposure to international markets, more and more learners will require transnational education that goes beyond traditional modes of learning (Bannier, 2016).

As such, higher education institutions need to re-examine their approaches in the light of the demands of the global era and the digital age. Universities of today should produce graduates who have the ability to seek new information from different sources, translate this information into applicable knowledge, and communicate this knowledge in various forms and situations. They should be able to solve problems creatively and work in different cultural teams (Scott, 2015).

To cater to the needs of this new breed of learners, many educational institutions have considered alternative modes of educational delivery, including distance education and e-learning. The flexibility that distance education has opened up opportunities never before seen in the educational system. With its flexible and open philosophy, Open and Distance Learning (ODL) has made education accessible to people who are not reached by conventional universities (Morgan and Carey 2003; Irvine et al, 2013; Knox, 2013; Stewart, 2013).

From the early print-based models of delivery, advances in information and communications technology have transformed distance education. In the past most ODL institutions deliver a large part of their course content through print, radio, and television. The arrival of the Internet has enabled ODL institutions to get into what is called the "digitized" distance education (Wiley & Hilton, 2009).

In recent years, educational institutions have also felt the need to cater to the increasing demand for cross-border education. Institutions of open, distance and e-learning are well positioned to propel them to cross-border education given their experience in ICT-enhanced modes of delivery. In their efforts to control border education, governments may be forced to internationalize their accreditation systems.

Another trend in the higher education sector is the increasing demand for professional graduate and continuing education (UNESCO, 2005). There is a growing number of mature learners out there who do not see the university as central to their lives. These students will prefer to study part-time and acquire the skills necessary to advance themselves in their careers (Smith, 2008).

e-Learning has proven to be a viable option in reaching out to this group of professionals. To cater to these learners, many conventional universities have gotten into blended learning, combining traditional classroom practice with e-learning solutions. However, many conventional universities have been unable to adapt online teaching methods fast enough to ensure increased access, quality, and sustainability through the use of teaching technology.

In addition to exploring more flexible teaching approaches and open system of admission, universities are also beginning to see the value of openly sharing their learning resources at no cost. The development of free and user-friendly ICT has brought down the cost of producing learning resources. This coupled with the principle that knowledge must be free has contributed to the propagation of Open Educational Resources (or OER). According to OECD, OERs are “digitized materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research.” As Lane (2009) stated, OER promotes: 1) freedom from paying to access and use a content for specified purposes, 2) freedom to copy and make many more copies, 3) freedom to take away and re-use without asking prior permission, and 4) freedom to make derivative works (but not necessarily freedom to make profits from them). OER is especially applicable in the Philippines where the distribution of printed books is hampered by natural disasters and other logistical constraints (Arinto and Cantada, 2013). OER also fits with the open learning philosophy as they expand access to learning for everyone particularly the non-traditional groups of learners.

Related to the spread of OERs is the rise of Massive Open Online Courses (Alfonso, 2014). MOOCs are online courses that are openly accessible to large numbers of learners. It makes use of OER and is meant to make education more reachable to ordinary people.

While these outcomes have dominated the discourse on openness in distance learning, dramatic changes in information and communication technologies in recent years have been the major driver in the evolution of the openness dimensions. With the entry of digital media in the 21st century, the supersystem in which higher education is embedded in has become even more complicated and critical for the latter to recognize and understand (Wiley & Hilton, 2009). Wiley (2006) categorized how the human society is being transformed by technological innovations:

- 1) From Analog to Digital – MP3s, DVDs, digital broadcasts, and online newspapers have taken over VHS tapes, print newspapers, and analog broadcasts in the media industry;
- 2) From Tethered to Mobile – wireless devices and online platforms have enabled people to perform activities in such a way that they are not confined in a limited space;
- 3) From Isolated to Connected – hyperlinks in online journals, social networks, Voice Over Internet Protocol (VOIP) services, and mobile phones now provide real-time exchange of information among two or more parties;
- 4) From Generic to Personal – “mass customization” of goods and services have offered a more personal approach to consumers;
- 5) From Consumers to Creators – online platforms and mobile devices

have empowered more people to write, record, and publish their own ideas and creations freely; and 6) From Closed to Open – the Internet has opened up possibilities of free sharing and access to information.

While numerous industries, particularly commercial ones, have adapted to these advancements in technology and used these to further their scale of consumers, higher education has been left ignoring these changes in its supersystem (Wiley & Hilton, 2009). This could be disadvantageous for higher education as the areas they once held monopoly on (i.e. structuring and providing access to content, tutoring and learning support services, curating and providing access to research materials, acting as a hub for social activities, and assessing learning and awarding degrees) could now also be offered through various media. “Mass participation, distributed expertise, valid and rewardable roles for all who pitch in” (Irvine et al, 2013) are now being pursued more than ever. Higher education must begin to innovate and see openness as a core organizational value to both remain relevant to the society and to contribute to the advancement of the field of higher education (Wiley & Hilton, 2009).

In this paper, we shall attempt to discuss the new dimensions opened up in teaching and learning, research and extension as framed by the world view of open and distance e-learning (ODEL) and within the context of the experiences of UP Open University as it has enacted this world view in the past years. The paper ends with some ideas on expanding the development of ODeL through institutional exchanges.

The ODeL Worldview

Open and Distance Learning (ODL) as a concept has been well entrenched with its rich literature and application. Institutions and associations have thickened the discourse on this and have exchanged best practices and have built this strong community through many years.

ODL is the merging of two concepts, that of Open Learning and Distance Education. This occurred when distance education institutions stated and agreed that distance education is a mode of learning in which students and teachers are physically separated from each other. Students undertake guided independent study of specially designed learning materials in various media, and two-way communication exists between the teacher and students commonly called continuing education, learner centered education, distance learning, flexible learning and distributed learning (Keegan 1980).

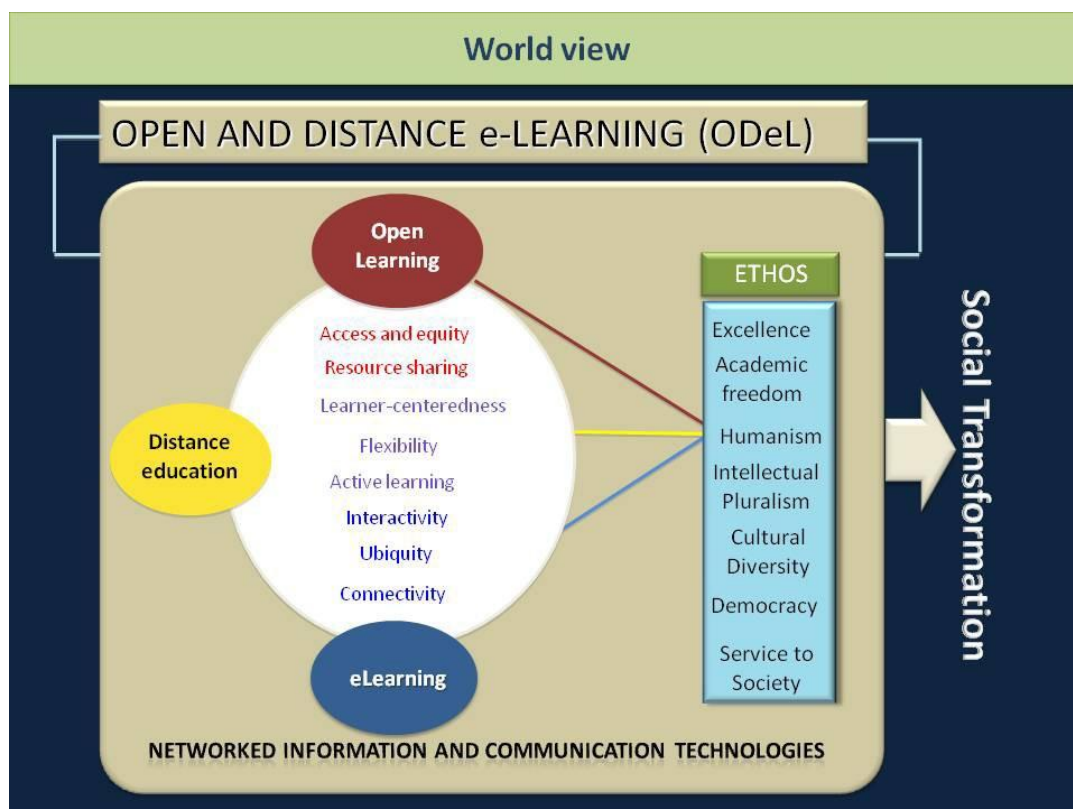
The ODL academic community has declared that distance education should always be together with the concept of Open Philosophy of Learning. As previously mentioned, open learning is a vision of an educational system accessible to every individual with minimal restrictions (Bates, 1995). Open and distance learning (ODL) is therefore a system which combines the methodology of DE with the concepts of open learning and flexible learning (Belawati 2008). So the community of ODL as we know it today can be traced to the establishment of the National Extension Institute in the United Kingdom in 1963 and later on the creation of the UK Open University in the late 1960s.

Given UP Open University's unique position as an open university within a national university and its establishment at the dawn of the internet revolution, the university has developed a unique path towards openness. The first author has coined the term open and distance e-learning (ODEL)

to capture the worldview within which the university has enacted openness, distance education, and online learning in its own context (Alfonso, 2014a). ODeL draws from the features and affordances provided by open learning, distance education, and e-learning – access and equity, resource sharing, learner-centeredness, flexibility, active learning, interactivity, ubiquity, and connectivity (see Figure 1). Some of these features – like access and equity – are more in tune with open learning. Others – like learner-centeredness, flexibility, active learning – are shared by the three domains. Ubiquity, interactivity, and connectivity are more of e-learning's contributions.

These affordances and features are infused with values that underpin the universitas – excellence academic freedom, humanism, intellectual pluralism, democracy, and service to society. These ethos create the spirit of the university as we all recognize. Together, all these elements are embedded and facilitated by networked information and communication technologies and make up what is referred to as Open and Distance e-Learning (ODeL). The interweaving of these components can bring about social transformation. It must be noted that the first author wishes to state that she was not the first one to espouse these values. Many ODL institutions have actually practiced these values in one form or another. ODeL is not a normative framework but is more of an expression of values. As such, various educational institutions can draw upon ODeL depending on their own needs, priorities, target learners, and structures. The ODeL framework can open up new pathways for Higher Education Institutions and usher in new dimensions in teaching, learning, research and extension.

Figure 1. Open And Distance E-LearningWorldview



The UPOU Experience

Instruction

The UPOU was established in 1995 as the fifth constituent university of the University of the Philippines System. It aims to provide education opportunities to individuals aspiring for higher education and improved qualifications but who are unable to take advantage of traditional modes of education.

The creation of UPOU was a response to a felt need. Because of the limited resources of the residential colleges in other UP campuses, UP can only accommodate a certain group of applicants for admission. Through the distance education provided by the UPOU, the University is able to respond better to the demand for quality higher education especially in areas which do not have a UP campus.

When UPOU was established twenty years ago, the University taught primarily through stand-alone modules in print. With the growth of the internet at the turn of this century, the University shifted its gears and adopted online teaching and learning. At that time, there were concerns about the readiness of students to do their studies online. The university weighed the pros and cons of going online. We examined the technological and learning environments. We have noticed how academic texts in print are partially migrating into other forms of media. Harnessing the advantages of these technologies, the UPOU decided to look at e-learning as a means to enrich the learning experience of our students. In addition, e-learning also enabled UPOU to expand its reach abroad. In 2001, the UP Open University shifted to online learning to enhance the learning experiences of its students. Since then, UPOU is the only university in the country to deliver all its courses completely online. The hub of online learning at UPOU is Myportal, a virtual classroom powered by MOODLE. Teachers and students interact with each other at Myportal through asynchronous discussion boards, chats, wikis, and blogs. Students submit their assignments as well as take their quizzes and examinations in the said site. Through online technologies, UPOU is able to reach students from over 60 locations in over 40 countries. At present, offshore students come from over 60 countries and comprise 20% of the total student enrollment.

Open Educational Resources

When UPOU was established in the mid-1990s, the UPOU's take on educational resources was solely anchored on copyright principles. The approach then was to teach primarily through copyrighted stand-alone modules in print. A few years later, UPOU had seen an explosion in the collective sharing and creation of knowledge as more people got more connected through social media. With the rise of web 2.0, internet users have been transformed from mere consumers to producers of knowledge. In this digital age, knowledge is not merely transmitted. It is constructed through the interaction of people across classes, disciplines, borders, and cultures. Instead of relying on the monologue offered by a teacher or a printed module or textbook, we can now take advantage of the wide array of resources available in the Internet. In the past, academics propagate ideas primarily through the print media. With the advent of web 2.0, we can now use a wide array of free online resources to facilitate learning. Compared to previous technologies, where the audiences of the learners are mere consumers of information, these technologies have given our teachers and learners the chance to share what they know, critique each other's position, and discuss problems from different angles. In this way, knowledge creation becomes more relevant, participatory, and context specific.

All these developments have also changed the way we develop our educational materials. Instead of producing stand-alone course modules in print, we have decided to utilize various open educational resources in the web to deliver content. More than the accessibility and affordability, our reason for using OER is first and foremost pedagogical. We believe that learning goes beyond a simple transmission of knowledge from the educator to the student. Adopting a resource-based approach meant moving away from the traditional notion of the ‘talking teacher’ to the use of different media to communicate content and develop learning activities. We have used open educational resources as a material and tool for imparting concepts, developing thinking skills, and promoting creativity, self-discovery, and interactivity (Alfonso, 2014a).

OERs have been quite useful in offering our programs. However, we also recognize that a lot of these educational resources were created by foreign authors and for foreign audiences. For learning to be truly authentic, it has to be based on the realities of our learner’s context. Even scientific concepts that are largely universal can be explained more effectively and appreciated more if these are applied and grounded in the everyday conditions of our students. There is a need to design, construct, and produce our own information, stories, experiences, interpretations, and course materials and claim our voices and spaces in the vast limitless Web. More importantly all these OERs shall be grounded on Philippine experiences and realities showing the Filipino solutions and discourses on major concerns regarding our culture, health, environment, education, livelihood, labor, governance, and the like. We must create our own materials the way we want to create them and proliferate the web for the world to see (Alfonso, 2014b; Alfonso, 2014c).

As we source OERs from outside the country, it is also our responsibility to participate in the knowledge commons by producing and sharing educational resources with the members of this global community. In this way, we focus our moves towards a constructivist view – creating quality and accessible educational resources, co-creating texts with teachers and learners in a global community, and making social networking go beyond generic entertainment to a repository of teaching and learning texts.

The UPOU has taken some efforts towards designing and creating OERs that are framed within the local perspective. In response to this challenge, we have recently created the UPOU Networks - an online web-based repository of open educational materials in rich media, delivering scholarly productions through the Web using a content management system programmed with various applications. The UPOU Networks produces research-based scholarly texts in various formats, from hypertext to rich media, for use in regular course offerings, special courses, and programs for the general public. The materials vary from open educational courseware (or freeware) to courseware designed for the exclusive use of specific client groups. The materials stored in the UPOU Networks are accessible on demand subject to curatorial and programming approval by the university.

Massive Open Online Courses

Corollary to the spread of OERs is the begging question about how OERs should configure in the actual process of learning. The OER movement has been made manifest in participation in the creation of OERs including open textbooks, participation in Creative Commons, and sharing of these resources through course management systems (CMS). At UPOU, our OERs are not only used in formal degree programs but more so in massive open online courses (MOOCs).

UPOU's version of MOOCs is encapsulated in MODEL (massive open and distance elearning). MODEL courses draw upon the scalability offered by the existing MOOCs as well as the learner-centeredness of open and distance elearning. The assessment activities go beyond cognitivist-behaviorist approaches to include constructivist and connectivist activities (Bandalaria, 2014).

Learning materials developed for MODEL courses are often packaged in multimedia formats. Online learning activities like quizzes and discussion forums are usually incorporated. Individual learning is highlighted and one is virtually connected to the ideas of both experts and learners in the fields of studies. Peer evaluation may be used but in tandem with tutor assessment. MODEL courses are usually in the format of rich media, like videos.

The UPOU launched the first MOOC in the Philippines in partnership with Smart Communications, Inc., through the development and delivery of MODEL courses on android apps development and technopreneurship. Learning materials developed for these were also designed as OERs. The University has also worked with the local Business Processing Outsourcing Industry for the development and delivery of MOOCs in service management to address the rapidly increasing demand for talent of our burgeoning BPO sector. Recently, the University has also offered MOOCs in child rights protection and promotion, inter-local cooperation, art in the ASEAN, and distance education readiness. We are aware of the issues surrounding around present-day MOOCs and are thinking of ways on how to stamp the UPOU approach on our own OOCs. The course materials for all these initiatives were also developed and shared as OER.

Opening Up New Dimensions in Teaching and Learning, Research, and Extension

Teaching and Learning

Our experiences have shown that ODeL has allowed us to take a closer look at new modalities of teaching and learning, e-pedagogies and methodologies for new knowledge, changing paradigms in research and specifically multimedia as research, engagement of communities of scholars communities of practice as co-creators of theorizing and practice of traditional and emerging fields and areas of study (Alfonso, 2013; Garcia, 2014).

In terms of teaching, ODeL has allowed the university to reach Filipino learners in over 60 locations across the world. Through its graduate programs, UPOU has allowed thousands of Filipinos to upgrade their competencies in their chosen professions.

At UPOU, learners study at their own pace and place using specially designed multimedia materials and interact with their teachers and co-learners in Myportal, a Moodle-powered learning management system or virtual classroom. Social media like Facebook and Twitter are also used in some subjects.

Just like their counterparts in the conventional classrooms, UPOU students are required to submit assignments, research reports, take examinations, and participation in online discussion forums. In all these assessments, we normally require our students to apply their theoretical lessons in their own personal and professional contexts and in solving realistic problems. In discussion forums, they are also encouraged to pose questions to each other and critique each other's position.

The good thing about this mode of learning is that students' outputs can easily be made open to

the scrutiny not only of the teacher but also the classmates. When students are required to write down their reflections on their learning in the form of blogs, students can actually read and comment on each other's ideas. When they post their responses to the teacher's question in online discussions, they need to write down their ideas and post these on the discussion board for everybody to read, analyze, and evaluate. To be credible, they must ensure that their postings apply the concepts covered in the modules, provide evidence for their position, and even cite other literature if necessary. Not only does this format allow the other learners to scrutinize the ideas of their classmates in a much more detailed manner, it also enables them to respond to those questions and defend their stand on issues in more organized and transparent way. In addition, the online discussions also require a certain level of decorum, which fosters ethical behavior (Alfonso, 2014d).

In online learning, the teacher becomes more of a facilitator of learning (Alfonso, 2013; Garcia, 2014). The teacher is no longer the sole source of knowledge in class. In addition to video lectures and written modules, our students are also required to read scientific papers like journal articles which exposes them not only to the content of the subject matter but also the empirical process by which the content has been arrived at. In an environment where the students' power relative to the teacher is increased, peer-to-peer learning and evaluation becomes more possible. This enables the learner to think for herself and not accept everything at face value. In this way, students are given the opportunity to imbibe the scientific cultural values of rationality, critical thinking, and openness to scrutiny, transparency and ethical behavior through the learning experiences they undergo.

While majority of e-learners are mature students who do not see themselves as part of the university life, ODeL promotes the instilling the universitas ethos in the electronic environment. In conventional universities, the ethoses of universitas were made manifest from the way classes are conducted to the way research is undertaken. The students' socialization to these values occurred in cultural activities as well as sporting events held on campus. While efforts have been made to instill those ethos in terms of the content and design of the courses, there is still a need to study and explore how to best propagate these values in an online environment, particularly the use of social media as spaces for the creation of rituals for the performance of these ethoses.

Research and Extension

As part of its quality assurance, UPOU has conducted research to evaluate the impact of teaching innovation or address the operational problems associated with delivering courses at a distance. To date, the university has conducted several researches on ODeL learner profile, learning styles, learner performance, online teaching and learning, virtual learning environments, computer-mediated collaborative learning, gender and ODeL, pedagogical approaches in ODeL, OER, DE program evaluation, and management of ODeL. The fact that much of students' behavior takes place in a virtual learning environment also allows open education institutions and teachers to use these online data to better understand learner profiles and behaviors through learner analytics. Many of these studies have been published in academic journals (many of which are open access).

Open Educational Resources has found its way into the options of technology enhanced teaching and learning but also in research and public service. Not only did OER enable the university developed its learning packages more efficiently, it also allowed developed our students' capacity

to “read and comprehend” a range of learning resources in various media. In addition, OERs have provided academics a space for scholars and academics from developing countries to claim their spaces and bring their narratives, solutions to problems, thickening of discourse and authentic contributions to various concerns and disciplines. This then adds to respect for diversity of cultures in approaching areas studies and discipline. New academic partnerships collaboration and networking are also opening possibilities in OER.

At the UPOU, we have considered OER as one of the pathways to making education more open to more people. The university tried to parlay these values as it designed and delivered its MOOCs or MODEL as the university defines its own version of such open courses. In the context of MOOCs, the usefulness of OERs has become more emphasized. Through MODEL, overseas Filipino workers, out-of-school youth, career shifters and other non-traditional learners were able to access relevant programs of the university (Bandalaria, 2014).

OER offers the higher education sector numerous possibilities. To maximize these opportunities, however, there is a need to catalyze the right environment for its long-term success and relevance of OER as it is tied up with the future of universities that support it. For OER to flourish and to be truly enriching, OER must be seen within the context of the “universitas”—the larger community of scholars. By going back to the concept of the universitas, there could be a better appreciate what education is—a social contract. At the core of the universities’ social contract is its role in social transformation. Universities have helped shape society not only by producing competent professionals but also by nurturing innovative ideas, facilitating discourse on important social issues, and developing technologies that people can use. Universities are able to do this as they encourage the free exchange of ideas, thereby allowing its community of scholars to think critically, creatively, and collegially (Alfonso, 2014b).

Institutional Exchanges for ODeL Development

The university is mandated to assist the educational system in the country, in general, by developing, testing and utilizing innovative instructional materials and technology, and sharing these with other colleges and universities through cooperative programs. UPOU’s role in this area is brought to the fore with the signing of the Republic Act 10650 of 2014 (Open and Distance Learning Act). The law has added to the need to actively practice and engage in technology enhanced teaching, learning, research and extension in this new environment in the 21st century. Academics are faced with this mandate of addressing the challenges that go with it. The UP Open University has been specifically tasked by the law to assist the Commission on Higher Education (CHED), the Technical Education and Skills Development Authority (TESDA) to promote ODL in the country. UPOU was mandated to assist HEIs and technical and vocational institutes in the design, delivery, and management of ODL programs and services. UPOU is presently crafting a program to address these concerns.

The law provides an opportunity for the expansion of the higher education mission and is pivotal in helping to create a culture of continuing education and lifelong learning and more importantly to participate in mainstream media through claiming spaces and filling it with the rigor and scholarship that we are familiar with in academe. The ODL law highlights the roles of traditional media (e.g., broadcast media and telecommunications networks) and new media (e.g., web-based applications) in increasing the capacity of HEIs and post-secondary schools offering ODL programs not only within the Philippines, but also outside the country. This scenario will certainly play a significant role in making teaching, learning, and research and extension part of the Filipino way of life.

In the end, the evolution of ODeL as practiced in different contexts lies on the strength of institutional partnerships among the stakeholders, the adoption of both “regulatory” and “developmental” approaches in dealing with HEIs interested in pursuing ODeL, and the openness of both academic leaders and academics in the adoption of more flexible approaches in instruction, research, and extension.

It is hoped that the model of collaboration, networking and partnerships that the university has gone into with more vibrancy, where MODeL/ MOOCs and OERs play a central role, can lead to the creation of an active knowledge hubs, expanding and engaging the communities of scholars and communities of practice in partnership with HEIs, industries, and media institutions. Academic spaces blend with the community, national and local government, industries and entrepreneurs. We design develop, produce teaching learning and research using ICT infrastructure and move processes, involving scientific and creative solutions to our education systems. Academic work becomes more challenging but ushers in countless possibilities as we mainstream ODeL culture and engage all through diverse media, a culture of evidence-based decision making, lifelong learning, innovation and creativity in our digital times.

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Development of a Mobile Learning Application for Kindergarten: Process, Issues, and Challenges

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Abstract

Mobile learning is now considered as a branch of ICT in education. Because it makes use of technology that is more affordable and more easily self-procured and managed than tethered computers, mobile learning requires reconceptualizing traditional models of technology use and implementation. This study aimed to develop a mobile learning application that provides new learning pedagogy and integrate ICT in the learning process of Kindergarten. This study focused on the development of a mobile learning application for Kindergarten named iSuro. The contents of the application were based from the existing learning modules of kindergarten in mother tongue (Iloco). The application is implemented in android-based mobile devices. It provides a digital content of information, a user-friendly environment to kindergarteners that enables them to be more productive and engaged in classroom activities, and a one-size-fits-all learning. The system should be adopted by schools in the Province of Ilocos Norte for the Kindergarteners to have an additional material for learning as well as more fun and exciting learning experiences. Since the dialect used in the contents of the application is Iloco, a language selection feature should be incorporated so that other Regions could also use the application.

Keywords: Mobile Learning, Kindergarten, iSuro, AndroidApplication

Introduction

Mobile devices such as mobile phones and tablet computers are now being used by an increasing number of learners and educators as tools in accessing information. These mobile devices are also being used to restructure administration and to facilitate learning in new and innovative ways.

Mobile technologies are continuously evolving. At present, there is a wide variety of mobile devices on the market like mobile phones, tablet computers, e-readers, portable audio players, and hand-held gaming consoles. Mobile devices are digital, portable, and are usually owned and controlled by an individual rather than an institution. These devices can also access the internet, have multimedia capabilities, and can facilitate a large number of tasks, particularly those related to communication. Mobile technologies have opened up a new learning pedagogy and have introduced an innovative platform.

Mobile learning involves the use of mobile technology and can be integrated with other information and communication technology (ICT) resources to facilitate learning anytime and anywhere. Learning can unfold in a variety of ways. People can use mobile devices to access educational resources, connect with others, or create content, both inside and outside classrooms. Mobile learning includes efforts to support broad educational goals such as effective administration of school systems and improved communication between schools and families.

Mobile learning is now considered as a branch of ICT in education. Because it makes use of technology that is more affordable and more easily self-procured and managed than tethered computers, mobile learning requires reconceptualizing traditional models of technology use and implementation. While computer and e-learning projects have historically been constrained by a hardware that is expensive, fragile, heavy, and kept in tightly controlled settings, mobile learning projects tend to assume that students have uninterrupted and largely unregulated access to technology.

Today, mobile technologies are common even in areas where schools, books, and computers are scarce. As the price of mobile phone ownership continues to decline, more and more people, including those in the remote areas, are likely to own and know how to use a mobile device. With this, mobile technologies provide an excellent medium for extending educational opportunities to learners who may not have access to high-quality schooling. Utilizing the relative affordability of mobile devices do not replace but rather complement existing educational investments such as textbooks, infrastructure, hardware, training, and content.

Moreover, as the amount and type of information these mobile devices can collect and provide to their users increase, mobile technology can soon personalize learning. For example, for a student who is a visual learner with an interest in maps, historical information could be presented in an interactive atlas which can be manipulated on a touch-screen device. Meanwhile, students with different learning preferences could be presented with similar information in a very different way, such as a timeline indicating important events with links to informational videos and primary-source documents. Over time, personal technology will supersede one-size-fits-all models of education.

In the Philippines, the K to 12 Program covers Kindergarten and 12 years of basic education (six years of primary education, four years of Junior High School, and two years of Senior High School) to provide sufficient time for mastery of concepts and skills, to develop lifelong learners, and to prepare graduates for tertiary education, middle-level skills development, employment, and entrepreneurship. These domains are the developmental tasks or milestones that kindergarteners are expected to attain. These include: (1) Physical Health, Well-being, and Motor Development, (2) Social-Emotional Development, (3) Character and Values Development, (4) Cognitive/ Intellectual Development, (5) Language Development, and (6) Creative and Aesthetic Development.

In the enhanced Kindergarten curriculum, students learn the alphabet, numbers, shapes, and colors through games, songs, and dances, in their mother tongue. Examples, activities, songs, poems, stories, and illustrations are based on local culture, history, and reality. This makes the lessons relevant to the learners and easy to understand (K to 12 Curriculum Guide – Kindergarten, 2012).

With the implementation of the Kindergarten curriculum, teachers experience difficulty in providing each student with individual attention and in engaging Kindergarteners to perform their activities in class. Kindergarteners, on the other hand, experience difficulty in carrying textbooks and notebooks, making them weary of going to school. Also, education is only confined to the four walls of a classroom using the traditional chalk and board teaching approach.

This study aimed to develop a mobile learning application for Kindergarten that will provide new learning pedagogy and integrate ICT in the learning process of Kindergarteners. The Cognitive/ Intellectual Development domain was considered. This domain refers to a child's ability to abstract,

to understand concepts and their logical relations, and to manipulate them to arrive at new ideas or conclusions. In this domain, Mathematics was used as subject. At the same time, this study was conducted to provide solution to the difficulties encountered by Kindergarten and Kindergarten teachers.

Objectives of the Study

The general objective of the study is to determine and analyze the process of developing a mobile learning application for Kindergarten.

Specifically, this study is intended to:

1. Identify the Kindergarten teachers' teaching strategies and the challenges they face when it comes to implementing Kindergarten curriculum in terms of:
 - a. Policy
 - b. Materials
 - c. Teaching Methods
2. Determine the development tools and platform for the mobile learning application.
3. Design and develop the mobile learning application appropriate for the Kindergarten curriculum.
4. Determine the users' acceptability in terms of the mobile learning application's:
 - a. Functionality
 - b. Usability
 - c. Performance

Review of Related Studies

Theoretical Framework

Mobile technologies, both hardware and networking applications, are necessary components for the existence of mobile learning. As instructors and designers, practitioners of mobile learning need to be fluent in the use of these technologies and be cognizant of what technologies their learner population has access to. Application of specific pedagogical theories is directly connected to the technologies in use in a mobile learning system; as such, design of mobile learning environments demands a systems approach where development accounts for all aspects of the environment. As technology continues to improve and innovate, the options open to mobile learning will expand. The key is to focus on the fact that the goal of mobile learning is to facilitate learning, no matter what form the delivery may take (Caudill, 2007).

Mobile technologies are recognized pieces of our lives and are necessary attachments to our bodies. Educators need to understand and consider the advantages of mobile technologies to education and expand their use.

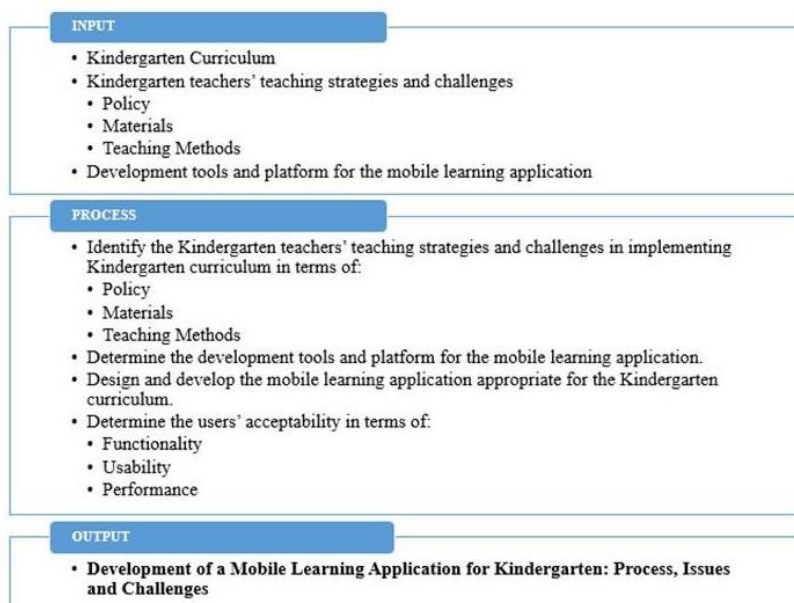
According to Herrington et al (2009), design principles are being expressed in active terms that enable their ready use by teachers and designers similar context and problems. It may refer to the characteristics of a planned learning design on what it should look like, or its procedure on how it should be.

The following are the characteristics of mobile learning applications, as recommended by Herrington et al (2009): 1) Real world relevance – use mobile learning in authentic contexts; 2) Mobile contexts - use mobile learning in contexts where learners are mobile; 3) Explore - provide time for exploration of mobile technologies; 4) Blended - blend mobile and non-mobile technologies; 5) Whenever - use mobile learning spontaneously; 6) Wherever - use mobile learning in non-traditional learning spaces; 7) Whomsoever - use mobile learning both individually and collaboratively; 8) Affordances - exploit the affordances of mobile technologies; 9) Personalize - employ the learners' own mobile devices; 10) Mediation - use mobile learning to mediate knowledge construction; and 11) Produce - use mobile learning to produce and consume knowledge.

Conceptual Framework

The Input-Process-Output (IPO) model was used in describing the conceptual framework of the study. As shown in Figure 1, the input consists of the needed data requirements in this study. Among the inputs are: 1) Kindergarten curriculum; 2) Kindergarten teachers' teaching strategies and challenges in terms of policy, materials, and teaching methods; and 3) development tools and platform for the mobile learning application.

Figure 1. Conceptual Framework



The processes included are as follows: 1) identify the Kindergarten teachers' teaching strategies and challenges in implementing Kindergarten curriculum in terms of policy, materials, and teaching methods; 2) determine the development tools and platform for the mobile learning application; 3) design and develop the mobile learning application appropriate for the Kindergarten curriculum; and 4) determine the users' acceptability in terms of functionality, usability, and performance.

Methodology

This section presents the research methods used in this study. The study was conducted at Banna Central Elementary School (BCES) in Banna, Ilocos Norte, Philippines. BCES was chosen to be the pilot school of this study since it is currently the adopted school of the Department of Computer Science for the Project F1 – an extension activity of the department.

To identify the Kindergarten teachers' teaching strategies and challenges in implementing Kindergarten curriculum in terms of policy, materials, and teaching methods, the researchers conducted interviews to two (2) Kindergarten teachers.

The development tools and platform for the mobile learning application were determined thru Internet and library research.

On the other hand, the Mobile-D Development Methodology by Kynkäänniemi and Komulainen (2006) in Figure 2 was utilized in the design and development of the mobile learning application. This development methodology is an agile development approach for mobile devices with five (5) phases, namely: Explore, Initialize, Productionize, Stabilize, and System Test and Fix. Explore. The initial plan of the developed application was formulated based from the inputs. Initialize. The researchers prepared the architectural design, use case diagrams, User Interface (UI), and their different functionalities. Productionize. The researchers implemented the planned activities based on the prepared design. The researchers used the identified mobile development tools and platform in constructing the application and implementing the functionalities of the application. Stabilize. In this phase, the researchers finalized the documentation of the application. System Test and Fix. In this phase, the researchers did testing and debugging of the application. After that, they released a functional mobile application named iSuro.

Figure 2. Mobile-D Development Methodology



To determine the users' acceptability in terms of functionality, usability, and performance, User Acceptance Testing (UAT) was conducted. Twenty (20) parents and twenty-five (25) Kindergarteners were considered as respondents. The respondents were given time to use the application and were asked to evaluate the application using the UAT rubric. Table 1 was used to interpret the data.

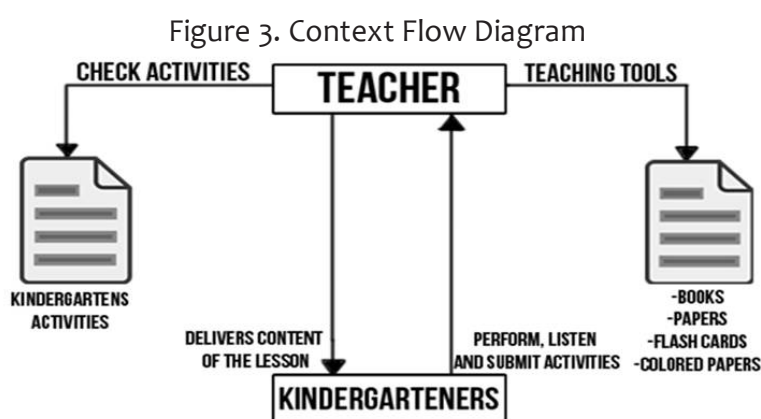
Table 1. Scale to measure the users' acceptability

Weighted Mean Range	Interpretation
4.20 – 5.00	Strongly Agree (SA)
3.40 – 4.19	Agree (A)
2.60 – 3.39	Moderately Agree (MA)
1.80 – 2.59	Disagree (D)
1.00 – 1.79	Strongly Disagree (SD)

Results and Discussions

Based on the interviews conducted, the following are the difficulties encountered by the kindergarten teachers and kindergarteners in the current process of teaching and learning. Teachers having large class sizes have difficulty in providing each child with individual attention. Teachers also have difficulty in encouraging pupils to participate and perform their activities in class. Kindergarteners, on the other hand, have difficulty in carrying textbooks and notebooks which makes them weary of going to school. Also, there are problems in the Department of Education (DepEd) in relation to the scarcity of learning materials or textbooks.

The context flow diagram of the existing teaching strategies is shown in Figure 3. The figure shows the current method or workflow practiced in the teaching and learning process of the Kindergarten curriculum. Teachers use books, flash cards, and colored papers as teaching tools. The teachers also check activities manually to know the scores of every pupil. In delivering the content of the lesson, the teacher discusses the lessons to the whole class and asks pupils for feedbacks. After or during the lesson, pupils are expected to participate, listen, and submit their activities in class.

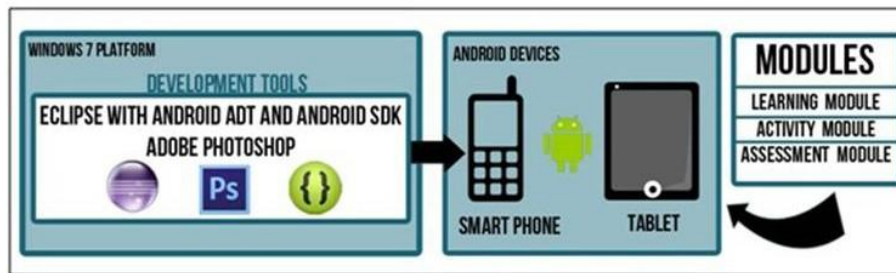


In parallel to the curriculum, the topics were selected and the lessons were derived from the module “Umuna A Panagbaniaga Kadagiti Numero”.

The development architectural design in Figure 4 indicates the technologies and tools used for the development of the application. The application was developed in a Windows 7 operating system. Eclipse 4.2 (Juno) was used as a tool in building the system, from setting the user interface, implementing images and videos, to implementing the source codes. After developing the system,

the iSuro application was deployed to an android device. SQLite served as the database of the application.

Figure 4. Development Architectural Design of the Application



The users can manage all the lessons, activities, assessments, options and demonstrations, as shown in Figure 5.

Figure 5. Use Case Diagram

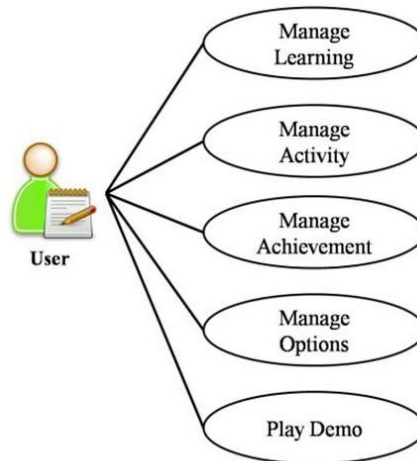


Figure 6 presents the main menu of the application with buttons: “Rugian ti Sesion” (Start Session), “Pagpilian” (Options), and “Pagtuladan” (Play Demo).

Figure 6. Main Menu of the iSuro



The application includes three (3) main modules:

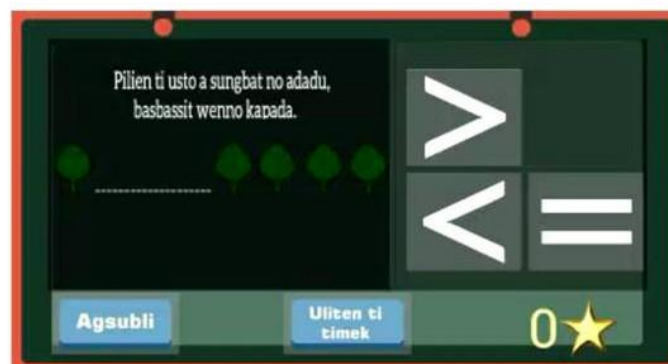
Learning Module: This module enables the user to read and understand the lessons. The application provides a digital flipbook and a voice over. The user can choose lessons from different units. Figure 7 presents the Learning Module of the iSuro application.

Figure 7. Learning Module



Activity Module: This module enables the user to answer the questions that pop out. After reading and understanding the lessons, the application provides a question and answer to evaluate the user's skill. Figure 8 presents the Activity Module of the iSuro application.

Figure 8. Activity Module



Assessment Module: This module enables the user to view the rewards. After answering the activities in the activity module, the application reveals the correct answer. The answers are saved and checked against the database before the score or reward is shown to the user. The application allows the user to save his name in the score board. Figure 9 presents the Assessment Module of the iSuro application.

Figure 9. Assessment Module



Table 2 shows the result of the user acceptance test taken by the kindergarten teachers. Based on the survey conducted, the system garnered an overall mean of 4.54 which means that the teachers strongly agree on the functionality, usability, and performance design of the system.

It is interesting to note that the respondents appreciated the application. “The teaching and learning process is more permanent using this device and the lessons are well organized”- Teacher Respondent.

Table 2. User Acceptance Test (Teacher)

Categories	Mean	Description
1. Functionality	4.98	Strongly Agree
2. Usability	4.26	Strongly Agree
3. Performance	4.37	Strongly Agree
Overall Mean	4.54	Strongly Agree

Table 3 shows the result of the user acceptance test taken by the Kindergarteners. The overall mean is 4.37 which signifies that Kindergarteners strongly agree on the functionality, usability, and performance design of the system.

Table 3. User Acceptance Test (Kindergarteners)

Categories	Mean	Description
1. Functionality	4.23	Strongly Agree
2. Usability	4.18	Agree
3. Performance	4.69	Strongly Agree
Overall Mean	4.37	Strongly Agree

Table 4 shows that the researchers also conducted a user acceptance test to the parents of the Kindergarteners. The respondents tried the system and they feel good about it. The respondents marked the application 4.43 which implies that the parents strongly agree on the functionality, usability, and performance design of the system.

Table 4. User Acceptance Test (Parents)

Categories	Mean	Description
1. Functionality	4.75	Strongly Agree
2. Usability	4.38	Strongly Agree
3. Performance	4.15	Agree
Overall Mean	4.43	Strongly Agree

Conclusions and Recommendations

Mobile learning provides the ability to use mobile devices to support teaching and learning. Its mobility makes it stand apart from other types of learning, particularly designing learning experiences that make the most of the opportunities that can offer us. Although some say that physical books count as mobile devices too, mobile devices have distinct features and functionality for supporting learners. Moreover, its convergence with the internet further offers potential

opportunities to support teaching and learning.

The iSuro application provides a new tool in teaching and learning in the Kindergarten Curriculum, a digital content of information, a user-friendly environment to kindergarteners that enable them to be more productive and engaged in classroom activities, and a one-size-fits-all learning.

Through careful analysis and design of the system, the researchers recommend that the system be adopted by schools in the province of Ilocos Norte. This is for the Kindergarteners to have an additional material for learning as well as more fun and exciting learning experiences. Also, the researchers further recommend that the system should have more lessons and activities.

In addition, it is recommended that since the dialect used in the contents of the application is Iloco, a language selection feature should be incorporated in iSuro so that other regions could also use the application.

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HiStorya: a Game Based Mobile Learning Application

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Abstract

In mobile learning approach, game-based learning techniques have been popular to engage learning while still enjoying. This study sought to design and develop a mobile game application for Araling Panlipunan (AP) that could be used as a supplementary tool in learning the subject by Grade 8 students under the K-12 Curriculum of the Department of Education (DepEd) in the Philippines. The researchers identified the topics, teaching methods and evaluation techniques used by the AP teachers and the game preferences of the AP students by conducting interviews and surveys. HiStorya, an interactive mobile game, was developed using the Android platform and the Digital Game-based Learning-Instructional Design Model. An evaluation survey of the application was also accomplished by the AP teachers and students.

HiStorya is relevant to the current state of technology today where smart devices are very popular. It is beneficial to the Grade 8 students taking up AP, the teachers of AP and the current education system of the Philippines. The students who used the application played and learned AP during or outside of school hours. The immersive, challenge and reward aspects of the game motivated the students to study and learn more about AP. The application was also utilized by AP teachers as a supplementary tool in teaching the subject. With the game statistics report generated by the system, HiStorya demonstrated it could help the teacher evaluate the subject proficiency level of his students. Moreover, HiStorya emphasized the significance of using games for student learning and introduced itself as another tool for teaching AP in the Philippines.

Keywords: HiStorya, game-based mobile learning, Araling Panlipunan

Introduction

With the rapid development of smart devices and technology today, there is a shift from desktop PC's to smart devices for mobility. According to the International Data Corporation (IDC, 2013), the rapid growth of the market for smart devices is driven by massive global consumer interest in tablets and smartphones. New smart devices which are capable of running customized applications are continuously growing. Tablet shipments in the world experienced the latest largest growth in 2012 with 78% over 2011, while smartphone grew by 60% (Reith, 2013). With this development comes the opportunity to use smart devices for learning because of their portability and widespread use.

There are already mobile systems that integrate gaming and learning which is called game-based mobile learning. In this approach, real world applications are embedded in virtual game contents without losing the motivation benefits of games (Yen, Wang, & Chen, 2011). Schwabe and Goth (2005) found in their evaluation of the effects of game-based mobile learning that gaming provides motivational learning experiences. In another study conducted by Huizenga, Admiraal, Akkerman and Dam (2009), it was found that pupils who played the game about medieval Amsterdam got

more engaged and gained significantly more knowledge about the topic than those pupils who received regular project-based lesson series. Harnessing these innovations in the education system of the Philippines brings a digital and high technology learning opportunities for students.

As to the education system of the country, the Philippines recently adopted the K to 12 curriculum which is regarded as the international education standard. Social Studies or “Araling Panlipunan” (AP) is among the subjects offered to the students. Based on the K-12 curriculum (DepEd, 2012), AP for Grade 8 focused on developing skills and giving importance to the essential qualities of geography, history, culture, society, government and economy which identify and make the Philippines part of Asia. It was found in the interviews with some AP teachers that some students easily get bored with the subject because it required a lot of memorization. Having a game as a tool aided the AP teachers in motivating the students to learn AP. Hence, the researchers aimed to develop a game-based mobile learning application for AP particularly for Grade 8 students.

Objectives

This study aimed to design and develop a game-based mobile learning system for the Araling Panlipunan (AP) subject would be used as a supplementary tool for Grade 8 students.

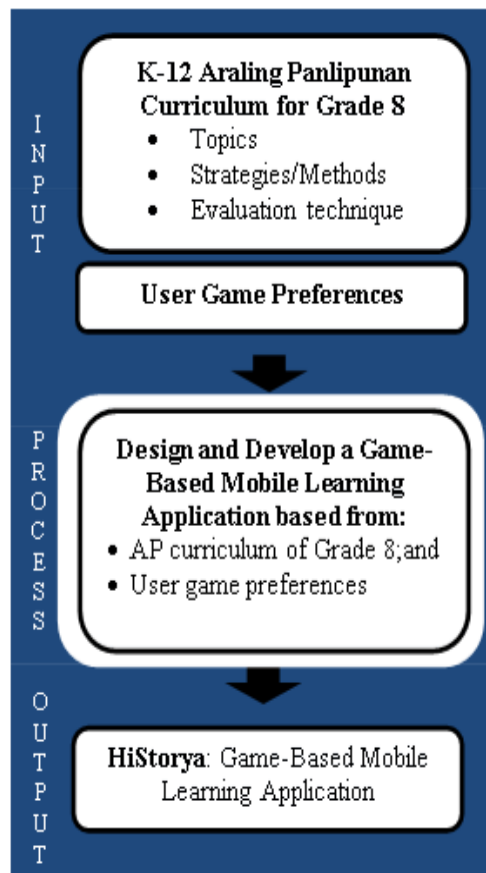
Specifically, it sought to:

1. Gather relevant information and knowledge about AP under the curriculum in AP, particularly in terms of a) topics discussed, b) teaching strategies/methods used, and c) evaluation techniques used by the teachers;
2. Determine the game preferences of the students;
3. Design and develop an interactive learning application based from the a) AP curriculum of Grade 8; and b) game preferences of the students.

Conceptual Framework

Figure 1 illustrates the conceptual framework of the study using the input-process-output model. The inputs of the study include a) K-12 AP Curriculum for Grade 8; and b) User Game Preferences. For the K-12 AP Curriculum input, the topics included in the different modules of the grade 8 curriculum were identified. The strategies and methods used by AP teachers were also considered in order to have knowledge about the practices of the teachers in teaching the subject. Considering these inputs, an interactive mobile learning system was designed and developed. As a result, HiStorya, a game-based mobile learning application was created which can be used by Grade 8 students enrolled in AP.

Figure 1. Conceptual Framework



Methodology

A. Determine the relevant information and knowledge about the curriculum in AP

Information about the K-12 curriculum in AP was gathered with the use of unstructured interviews. The researchers obtained the information from the personnel of the Department of Education and the AP teachers at MMSU Laboratory High School in Laoag City. Artifacts such as modules, AP curriculum, and assessment guidelines were also collected in order to have more knowledge about the techniques and methods used in teaching by the AP teachers.

B. Determine the gaming preferences of the students

A survey was administered to Grade 8 students of MMSU Laboratory High School in Laoag City to determine the game preferences of the students.

C. Design, develop, and test an interactive learning application

This study adapted the Digital Game Based Learning-Instructional Design Model (DGBL-ID) for the design and development of HiStorya. DGBL-ID originated from the Universiti of Kebangsaan Malaysia and it was developed by Nor Azan Mat Zin, Azizah Jaafar and Wong Seng Yue (Zin, Jaafar, & Yue, 2009). The DGBL-ID model consists of five phases: the analysis phase, design phase, development phase, quality assurance phase, implementation and evaluation phase.

The data gathered about the AP curriculum and game preferences were considered in the analysis and design phase. Based from these inputs, the content, game types/categories, difficulty levels, and game assessment method were identified. The Android platform was used in the development of the application.

Results and Discussions

A. K-12 AP Curriculum

The researchers conducted an interview to validate what has been commonly known about the current education system of the Philippines in relation to the AP subject for grade 8. AP teachers were also interviewed regarding their teaching techniques and how they assess students in AP.

Araling Panlipunan Curriculum for Grade 8

The Araling Panlipunan grade level standard for Grade 8 showcases Asian geography, history, culture, society, government, and economy. It is being taught 3 hours a week. The AP topics are grouped into four units, including a) Heograpiya ng Asya, b) Sinaunang Kabihasan sa Asya, c) Ang Timog at Kanlurang Asya sa Transisyonal at Makabagong Panahon and d) Ang Silangan at Timog-Silangang Asya sa Transisyonal at Makabagong Panahon. These four units are taught sequentially in the four grading periods (Unit 1 in 1st grading, Unit 2 in 2nd grading and so on) of the academic year.

Levels of Assessment

DepEd Order No. 73, s. 2012 (DepEd, 2012) contains the guide on the assessment and rating of learning outcomes under the K-12 Basic Education Curriculum. The levels of assessment listed are: a) Knowledge, b) Process or skills, c) Understanding and d) Products/Performances.

As defined in the DepEd Order, knowledge is the substantive content of the curriculum, the facts and information that the student acquires. To determine the student's knowledge of specific facts and information, this level may be assessed using multiple choice, true or false, or matching type of tests.

Process is the skills or cognitive operations that the student performs on facts and information for the purpose of constructing meanings and understandings. It is evidenced by the student's ability to process and make sense of information.

Understanding focuses on the meanings or understandings that the students themselves make or develop. The assessment in this level should be able to draw from the students the meanings they have, which may be expressed using any of the facets of understanding which include interpretation. Students understand if they can interpret by making sense of data, text, and experience through images, analogies, stories, and models.

The highest level of assessment is focused on the products or performances. It is reflective of what is wanted from students for them to be able to do with their learning.

Levels of proficiency

The performance of students is described based on the following levels of proficiency: a) Beginning (B), b) Developing (D), c) Approaching Proficiency (AP), d) Proficient (P) and e) Advanced (A). Table 1 shows the numerical value associated with the levels of proficiency.

Table 1. Level of Proficiency

Level	Equivalent Numerical Value
Beginning	74% and below
Developing	75 – 79%
Approaching Proficiency	80 – 84%
Proficient	85 – 89%
Advanced	90% and above

B. Game preferences of the students

The survey was conducted to determine the students' game preferences and their familiarity with the mobile technology especially the android platform.

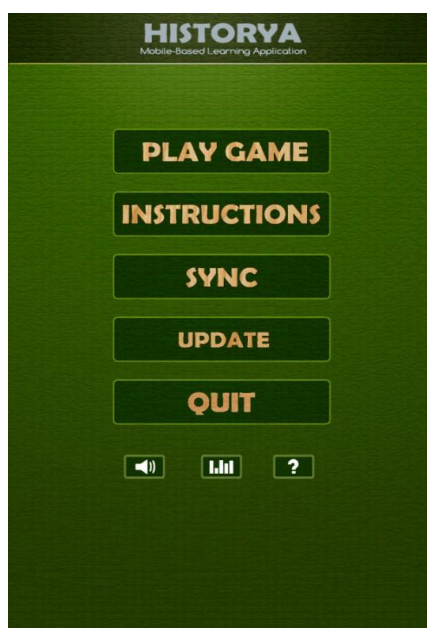
Ninety percent of the respondents said they had a smart device, 63% were using Android operating system, 93% played games using their own or others' mobile device, and 89% played one to two hours per day. The top games played by the respondents included 4 Pics 1 Word, Logo Quiz, IQ Test, Flow Free, and Text Twist. Also, the top mobile game types preferred by the respondents include analogy, quiz, and memory games.

C. HiStorya: a game-based learning system

Based on the gathered information about the AP Curriculum for Grade 8 and game preferences of the students, the HiStorya application was developed.

Figure 2 shows the main menu of the android application. The menu items included Play Game, Instructions, Sync, Update, Quit, Music Control, Stats, and About. The Play Game menu displays the game categories. Stats show the game statistics of the player. The Sync feature allows the player to upload his or her stats to the online database which can be viewed by the teacher for assessment purposes. It also has an update feature wherein the player can download new questions from the online database.

Figure 2. Main Menu



A player needed to register to be able to sync his scores to the online database. Figure 3 shows the registration form of the application which allows the player to input necessary information needed in assessing his progress. Users who are not registered may still use the application but their scores will not be synced to the online database.

Figure 3. Registration

The image shows a registration form with a black background. It contains five white input fields with labels above them: 'First Name' (with 'Juan' entered), 'Last Name' (with 'Dela Cruz' entered), 'Student Number' (with '0000' entered), and 'Section' (with 'Get from your teacher' entered). Below the fields are two white buttons: 'Submit' and 'Skip'.

Figure 4 shows the three categories in the game. The game preferences of the students and levels of assessment in the K-12 curriculum were considered in identifying the game categories. The analogy game represents the understanding level, the quiz game for the knowledge level and the memory game for the process or skills level.

Figure 4. Game Category



Figure 5 shows the four levels in every game category. The four levels represented the four units in the AP curriculum. The player needed to unlock the next level to be able to play it. To unlock a level, the player had to answer the required number of questions correctly. This feature intended to make learners feel immersive and absorbed when playing the game and to motivate them to continue the game play and overcome the difficulties of each game level.

Each level had sub-levels which represented the different parts of a Unit in the AP curriculum. The sub-levels were used to organize topics and future updates on the content.

Figure 5. Game Level

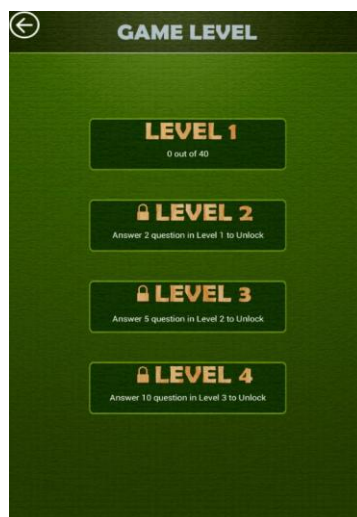
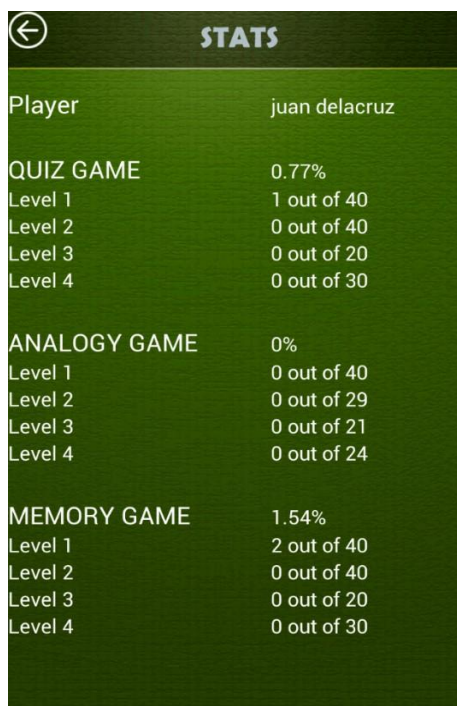


Figure 6 presents the stats of the student. It illustrates the progress of the students in answering the questions per category and level. When synched, the stats would be uploaded to the online database, where the teacher could view and evaluate the performance of the player through the web-based module.

Game samples are shown in Figures 7 – 10. The questions were formulated from the selected modules of Araling Panlipunan under the Grade 8 curriculum.

The Quiz game was a multiple choice question and a Trivia associated to the answer is displayed when the player answers the question correctly. Analogy Game lets the player analyze how the images are related and determine the word that best describes the four images. The Memory Game category aims to determine how students could recognize significant images related to Asia. An image was displayed and the player identified what was being depicted in it.

Figure 6. Game Statistics



Player	juan delacruz
QUIZ GAME	0.77%
Level 1	1 out of 40
Level 2	0 out of 40
Level 3	0 out of 20
Level 4	0 out of 30
ANALOGY GAME	0%
Level 1	0 out of 40
Level 2	0 out of 29
Level 3	0 out of 21
Level 4	0 out of 24
MEMORY GAME	1.54%
Level 1	2 out of 40
Level 2	0 out of 40
Level 3	0 out of 20
Level 4	0 out of 30

Figure 7. Quiz Game

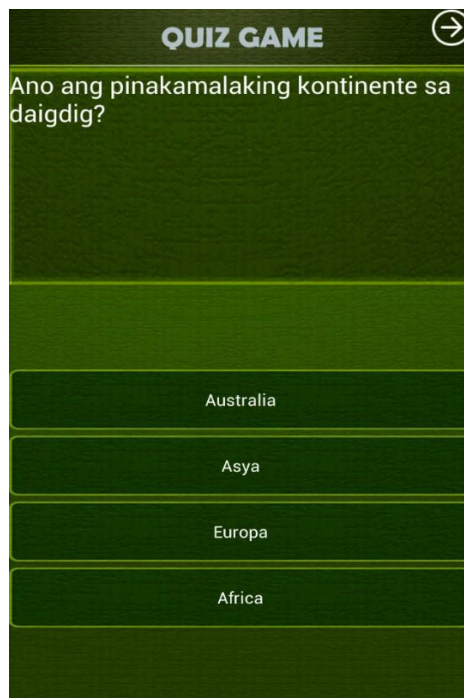


Figure 8. Trivia for Quiz Game

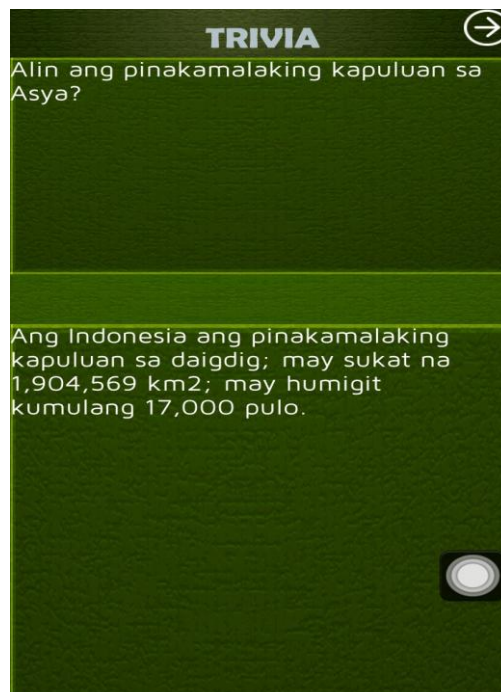


Figure 9. Analogy Game

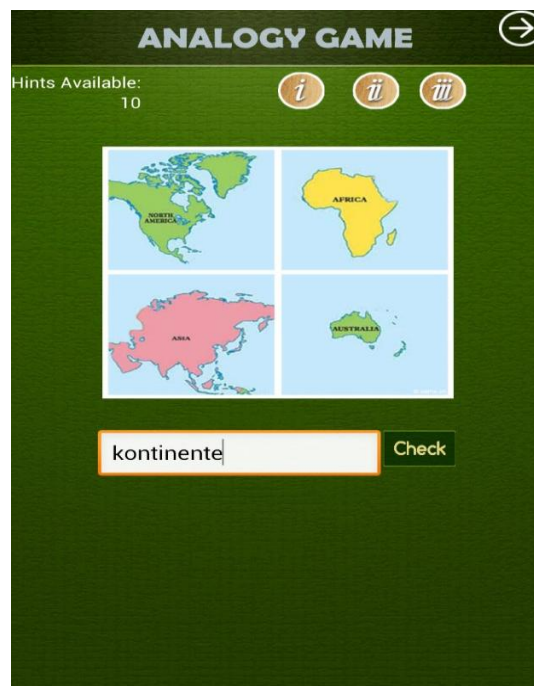
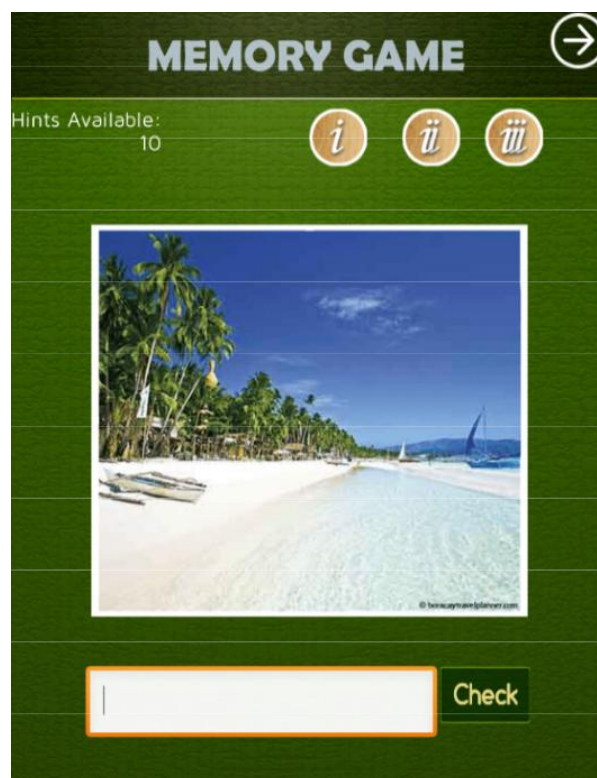


Figure 10. Memory Game

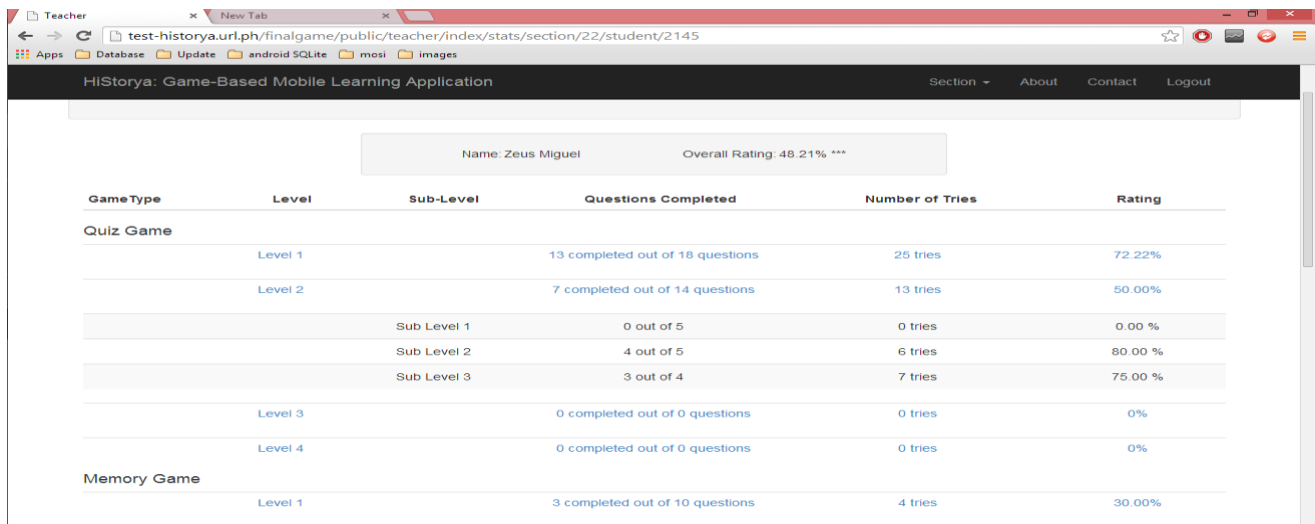


Apart from the mobile game, a web-based module which could be accessed by the teacher and administrator was developed. This module was created to aid the AP teacher in his assessment task.

The teacher module allowed the AP teacher to manage his AP class and view the students' progress while they were playing the game. Figure 11 shows the game statistics of students. The system analyses the proficiency level of the students using the levels of proficiency matrix of the K-12 curriculum. The number of tries a student answered a question was also tracked in order to determine the questions that the students had difficulty answering.

With the statistics report, the AP teacher would be able to determine the specific questions and topics that the students had difficulty with. Given this information, the AP teacher would be able to determine if there is a need for remedial class on a particular topic. The administrator module allowed the administrator to manage questions for the game using the online database.

Figure 11. Game statistics of students

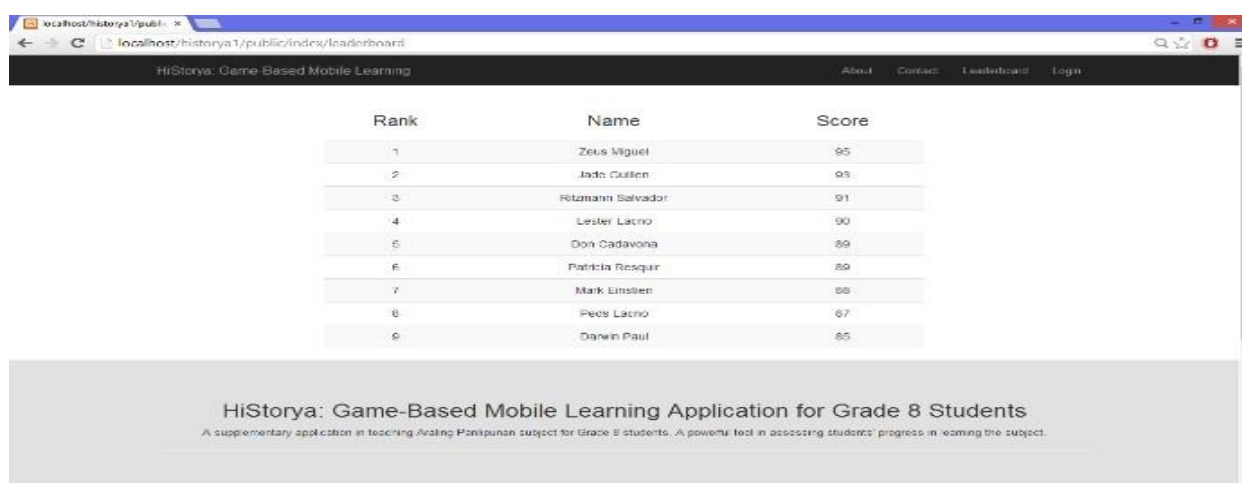


The screenshot shows a web browser window with the URL `test-historya.url.ph/finalgame/public/teacher/index/stats/section/22/student/2145`. The page title is "HiStorya: Game-Based Mobile Learning Application". The user is logged in as "Section". The page displays the following statistics for student Zeus Miguel (Overall Rating: 48.21% ***):

GameType	Level	Sub-Level	Questions Completed	Number of Tries	Rating
Quiz Game	Level 1		13 completed out of 18 questions	25 tries	72.22%
	Level 2		7 completed out of 14 questions	13 tries	50.00%
		Sub Level 1	0 out of 5	0 tries	0.00 %
		Sub Level 2	4 out of 5	6 tries	80.00 %
		Sub Level 3	3 out of 4	7 tries	75.00 %
	Level 3		0 completed out of 0 questions	0 tries	0%
	Level 4		0 completed out of 0 questions	0 tries	0%
Memory Game	Level 1		3 completed out of 10 questions	4 tries	30.00%

The add question feature of the administrator module allowed the administrator to add new questions and indicate their categories, level, sublevel, choices, and answer. To integrate challenge or competition, a leaderboard shown in Figure 12 was added as a feature. It allows players and visitors to see the top scorers in the game.

Figure 12. Leaderboard



Rank	Name	Score
1	Zeus Miguel	95
2	Jade Guillen	93
3	Ritzmann Salvador	91
4	Lester Lacio	90
5	Don Cadavona	89
6	Patricia Resquir	89
7	Mark Enssen	88
8	Peds Lacio	87
9	Danin Paul	85

HiStorya: Game-Based Mobile Learning Application for Grade 8 Students
 A supplementary application in teaching Araling Panlipunan subject for Grade 8 students. A powerful tool in assessing students' progress in learning the subject.

Conclusions and Recommendations

With the growing consumer interest in smartphones, these devices are now being used for learning because of their portability. To motivate students to learn Araling Panlipunan and facilitate learning for them even if they are on-the-go or outside the school, HiStorya, a game-based mobile learning application was designed, developed, and tested in this study. The units and topics in the subject curriculum served as the basis for the game levels and content. The game categories and evaluation criteria were derived from the levels of assessment and proficiency level matrix indicated in the K-12 curriculum of the Philippines. The game preferences served as basis for the game types used in the application. With the immersive, reward, and challenge features of the game, HiStorya will help teachers to engage their students in a fun way of learning through the utilization of technology.

It is recommended to further study the effectiveness of HiStorya by assessing the performance of the students who used the traditional approach compared to the students who integrated HiStorya as a learning tool in their AP subject.

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Perception and Readiness of Pre-service Teachers on Mobile Learning

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Abstract

Developments in mobile technology have changed the way people learn. Learning is not confined in the classroom alone; it could also occur beyond the boundaries of the classroom and can happen anytime and anywhere. The current generation of students has greater access to knowledge through their mobile devices. Thus, innovation on pedagogy must change along with the changes in technology. The ability of mobile learning to deliver knowledge should be fully utilized by teacher educators when implementing teaching and learning in the classroom. The purpose of this study was to identify the perceptions and willingness of pre service teachers on the use of equipment and mobile technology in learning. Preliminary data obtained in this study provide useful information for the implementation of teaching and learning at the Institute of Teacher Education Campus management. The sample in this study was a randomly selected group of 120 pre-service teachers studying Bachelor of Teaching at the Institute of Teacher Education, Darul Aman Campus. Data were analyzed using descriptive analysis using SPSS 19. The study found that pre- service teachers have a positive attitude towards the use of mobile technology in learning. The findings of this study provide teacher educators with useful information when it comes to diversifying their teaching by integrating mobile devices in teaching and learning at the institute.

Keywords: mobile learning, pre service teacher, teacher education.

Introduction

From toddlers to seniors, an increasing number of people are now connected and digitally communicating with each other in ways that would have been impossible to imagine only a few years ago. Students today are exposed to smartphones -- an advanced technology that is more powerful than the classroom computer. They are experiencing technology that shapes the way they interact with information and other people from around the world. They experience at school and reflect their experiences outside of school.

The Concept of Mobile Learning

In early researches, the concept of mobile learning was strongly linked to the device (Sharples, et.al., 2002) and the potential for enabling lifelong learning (Sharples, 2000). However, it soon became clear that the device and focus should be on the mobility of the learner. This led to considering mobile learning from the learner's perspective, and to the definition that: "Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of learning opportunities offered by mobile technologies" (O'Malley et al., 2003).

Current studies (Sharples, 2005; Taylor, et. al., 2006) are exploring the notion of learning in the mobile age to develop a theory of mobile learning that builds on Engeström's conceptualization

of the Activity Theory and Laurillard's (2002) Conversational framework. The focus of their work is on mobile learning as a form of communication in its context. Current perspectives on mobile learning generally fall into the following four broad categories (Winters, 2006): 1) Techno-centric is the mobile learning that is viewed as 'learning using a mobile device, such as a PDA, mobile phone, iPod, Play Station Portable, etc.; 2) Relationship to e-learning is a perspective that characterises mobile learning as an extension of e-learning. These definitions are often used all-inclusive and do not help in characterising the unique nature of mobile learning; 3) Augmenting formal education. In the mobile learning literature, formal education is often characterised as face-to-face teaching, or more specifically, as a stereotypical lecture. However, it is not at all clear that this perspective is wholly correct. Forms of distance education (for example, distance correspondence) have existed for over 100 years, leading to questions regarding the place of mobile learning in relation to all forms of "traditional" learning, not only the classroom; 4) Learner-centred. A strong lineage of research into conceptualising mobile learning is traceable by reviewing the combined works of Sharples, Taylor, O'Malley and their colleagues.

Koole's FRAME Mobile Learning Framework (2009)

The mobile learning model which makes the most sense is Koole's Model for Framing Mobile Learning (2009). The model is called FRAME: that means 'Framework for the Rational Analysis of Mobile Education'.

Figure1. Koole's Model for Framing Mobile Learning (2009)



Reprinted from "A Model for Framing Mobile Learning" by M. Koole, 2009, Mobile Learning: Transforming the Delivery of Education and Training, Vol. 1, pp. 25-47. Copyright (2009) by Edmonton, Alberta: AU Press

The Framework for the Rational Analysis of Mobile Education (FRAME), is a model that describes mobile learning as a process resulting from the convergence of mobile technologies, human learning capacities, and social interaction. It addresses contemporary pedagogical issues of information overload, knowledge navigation, and collaboration in learning. This model is useful for guiding the development of future mobile devices, the development of learning materials, and the design of teaching and learning strategies for mobile education (Kool, 2009)

Literature Review

Perception Survey of Mobile Learning

A study by Pollara & Kee Broussard (2011) on 54 studies relating to this perception of mobile learning found that 17 studies are producing positive perceptions on mobile learning. Yaneli Cruz, Saïd Assar & Imed Boughzala (2012) performed a study on 14 teachers about their perceptions on mobile learning. The study found that the participants provided a deep understanding of mobile learning opportunities such as availability, interactive environment, and improved communication embedded in everyday activities. The participants are also aware that the current teaching practices, including accessing relevant information, sorting materials, encouraging reflection, and creating interactive activities with timely feedback, have changed in the mobile environment. A number of universities in Australia are training teachers on using mobile devices particularly ipads as aid in professional learning, especially math. This study found that student teachers showed a positive attitude towards the use of mobile devices to assist learning.

Studies Related to Implementation of Mobile Learning in Malaysia

Over the past 10 years, research in mobile learning has evolved from a small research based on interest to achieve significant research in schools, institutions of higher education, the workplace, and so on around the world. In countries such as South Korea wherein there's strong internet infrastructure, the use of mobile devices such as smartphones and tablets is common. This makes learning with mobile devices in schools possible. In Korea, mobile learning is still at a nascent stage but has a bright future (Young-Kyun Baek Dong-Uk & Chang, 2005). The scenario is almost the same as in Malaysia, because Malaysia's infrastructure for Internet is quite good and stable, and the use of mobile devices is also widespread among Malaysians, from secondary school students through to pensioners, farmers, and even fishermen. Thus, the development of mobile learning in Malaysia is not impossible.

Among the earliest studies in the field of mobile learning in Malaysia is the study of the evaluation of the implementation of mobile learning programs to students standard 5 (11 years age) at an elementary school in Kuala Lumpur (Saedah Siraj and Norlida Elias, 2005). The purpose of the study was to investigate whether the implementation of mobile learning program achieved the aspirations set on it and also to assess the strengths and weaknesses of the program. The respondents were supplied with a laptop and wireless environment. Based on Stake's Countenance Evaluation Models (SCEM), the study interviewed students during, before, and after the implementation of usability evaluation. The study found that the implementation of mobile learning have been set to achieve it. The study also found that the mobile learning program has many strengths as well as some weaknesses.

The Open Universiti Malaysia (OUM) is among the earliest universities to implement mobile learning through their learning system. OUM has implemented a pilot project on mobile learning via short messaging service (SMS) to the students of distance education from their bachelor's degree for six consecutive semesters in May 2009 to January 2011. Tina Lim, Mansor Fadzil, and Norziati Mansor (2011) in their study of the implementation of mobile learning initiative at OUM found that students appreciate the text and felt that the SMS has helped them to stay focused on their studies. SMS was also found to be useful in providing important information related to the course. Moreover, in general, students agreed that the SMS system allows them to learn at

anytime and anywhere, and helps them manage their studies better. Each semester, more than 95% of the involved students expressed their desire for mobile learning via SMS be extended to other courses as well.

Md Yusof, Nurzawani (2007) developed a prototype application for mobile learning through learning of science subjects from two secondary schools. The analysis of the use of mobile learning prototype application indicated that the application was received by the students as a means of supporting them in learning science subjects. Students say that learning through mobile applications is exciting and that it gives them a learning experience in a new environment where they can learn science through a Personal Digital Assistant (PDA).

Studies Related to Implementation of Mobile Learning in Other Countries

Durdyyev (2012) developed a software for teaching mathematics through smart phones using Android OS. The successful development of the application has received a positive response from the respondents and they were very satisfied with the system. Developments in mobile technology now also change the pattern of learning (Naismith, Lonsdale, Vavoula, & Sharples, 2004). Learning is not only focused in the classroom, it can also occur anywhere and anytime using mobile devices and is supported by mobile technology.

Research has shown the very effectiveness of mobile learning in teaching and learning. A study by Saran, Cagility, and Seferoglu (2008) found that mobile learning has increased the English skills of students through the use of multimedia. The motivation of the students to learn English has increased since they can use their free time to learn English. The study also found that the use of SMS and MMS is effective in enhancing student vocabulary. Mobile learning was also found to be effective for teaching and learning for activities outside of the classroom that involve collection of field data such as bird observation activities (Chen, Kao, & Shen, 2003) and study visits (deCrom & de Jager, 2005).

Although mobile learning was proved to be a significant success when used for teaching to students who are not able to read and write (Collet & Stead, 2002; Traxler, 2002), mobile learning is still in its early stages in either Europe or Malaysia. Although there are many studies in Europe and in Asia, these only focused on the digital functions of a mobile device (Pownell & Bailey, 2001; Savill– Smith & Kent, 2003; Vahey & Crawford, 2002) and were performed by giant telecommunication companies such as Ericsson, Apple, Intel, and Sun for the purpose of trade and commercial competition. In addition, there are also studies that focus on the effectiveness of a tool in providing learning activities such as mini quiz (Montanaro, 2012) as well as courses and online training for professionals (Burke et al., 2005). There are also researchers who focus their study on the use of devices such as handheld computers only (M–Learning Project, 2005; MOBIlearn Project, 2005, Chen, Kao, & Shen, 2003; Becta Report, 2005). However, studies of mobile learning in the field of teacher education are rather lacking. Hence, this study is important in serving as initial data for the implementation of mobile learning initiatives in teacher education institutes in Malaysia. This study is also significant in terms of seeing up to what extent the potential of mobile learning can flourish in teacher education in Malaysia. The findings could also help the Ministry of Education to improve the technology infrastructure in educational institutions as well as to provide more teachers with many mobile devices and implement specialized training for teachers.

Research Objective

The objective of this study was to identify the perceptions and willingness of pre-service teachers on the use of equipment and mobile technology in learning.

Research Question

1. What is the pre-service teachers' readiness to use mobile devices for learning?
2. What is the pre-service teachers' perception to use mobile devices for learning?

Research Methodology

Sample

The sample in this study was a group of 120 pre-service teachers studies Bachelor of Teaching at the Institute of Teacher Education Campus Darul Aman. They were randomly selected. They are prospective elementary school teachers. The actual population of the students Bachelor of Teaching semester 8 is about 150 people (of which 30 of them had been taken as a pilot study sample). Thus, the study sample represents 86% of the total population of students taking up Bachelor of Teaching at Teacher of Education, Darul Aman Campus.

Instruments

Questionnaires were used to collect data as the study was designed in the form of reviews. Questionnaires fulfil the objective of seeing the overall pattern of readiness and perceptions of the respondents on the variables, as stated in the study objectives. The instrument in this study is an adaptation and modification of the study by Rashidah Bt Rahamat, Parilah M. Shah, Rosseni Din & Juhaida Bt Bt Abdul Aziz (2011). In this study, the questionnaire consists of two parts. Part A contains sample demographic information while section B contains 20 items regarding preparedness and perceptions of learning mobile learning. The instrument consists of a five-point Likert-scale. The respondents should choose the most appropriate answer from the choices.

The Pilot Study, Validity, and Reliability

To measure the liability of the items used in the questionnaire, 30 students (who were not involved in this study) have been selected in the pilot study. According to McDermott and Sarrela (1996), the sufficient number of respondents to be used in the pilot study is usually not less than 20 people. Analysis of the reliability of the survey instrument showed a Cronbach Alpha value of 0.86. Values above 0.80 have high reliability (Mohd Najib Abdul Ghafar, 1999). To ensure the validity of the questionnaire constructed, experienced lecturers were referred to give response to the questionnaire content. In addition, some students were asked to assess the suitability of the item with the objectives of the study.

Findings

Data analysis was based on demographics and research question.

Analysis of Sample Demographic

This report analyses the gender and race of the respondents. Frequency counts (in percentage) were used to analyze the demographic background of the respondents. Analysis of the background data of the study are shown in Tables 1 to 3.

Table 1 shows that the number of female respondents (69.2%, $n=83$) is larger than that of the male respondents (30.8%, $n=37$). This is in line with student enrolment in semester 8 where the number of enrolled female students is larger than that of the enrolled male students.

Table 1: Distribution of Sample by Gender

Gender	Frequency	%
Male	37	30.8
Female	83	69.2
Total	120	100

Table 2 shows the distribution of the sample in terms of race. Malays (83.3%, $n=110$) has the highest number, followed by the Chinese (14.4%, $n=19$), Indians (0.82%, $n=1$), and other races (1.5%, $n=2$).

Table 2: Distribution of Sample by Race

Race	Frequency	%
Malays	96	80
Chinese	21	17.5
Indians	1	0.8
Others	4	1.7
TOTAL	120	100

Table 3 shows the distribution of the sample according to their major courses. Most of the respondents is majoring in Special Education (Learning) with a frequency count of 27.5% ($n=33$), while the fewest is majoring in Physical Education and Health (9.2%, $n=11$).

Table 3: Distribution of Sample by the Major Courses

Major Course	Frequency	%
SE(Remedial Education)	30	25
SE(Learning Disabilities)	33	27.5
Science	14	11.7
Mathematic	16	13.3
Physical Education	11	9.2
Islamic Study	16	13.3
TOTAL	120	100%

Table 4 shows the phone models used by the respondents. In descending order, the cellphone brands widely used by the respondents are: Samsung 39.2% (n =47); Nokia 20% (n = 24) and Sony 18.3% (n =22).

Table 4: Model Held Cell Phones

Handphone Model	Frequency	%	N
Nokia	24	20	120
Sony	22	18.3	120
Samsung	47	39.2	120
Motorola	0	0	120
CSL	2	1.7	120
Blackberry	1	0.8	120
IPhones	7	5.8	120
LG	1	0.8	120
Sharp	0	0	120
Panasonic	0	0	120
China Model	0	0	120
Siemen	0	0	120
Others Model	16	13.3	120

Table 5 shows that the most common activity performed by the respondents through their mobile devices is to send SMS 99.2% (n = 119). This is followed by making calls 90.8% (n = 109), sending MMS 79.2% (n = 95), and taking pictures 66.7% (n = 80).

Table 5: Activities Common Using Mobile Devices

Activities	Frequency	%	N
Make a call	109	90.8	120
sent SMS	119	99.2	120
sent MMS	95	79.2	120
Login social network	61	50.8	120
Take a picture	80	66.7	120
Record sound/voice	38	31.7	120
Browse internet	70	58.3	120
sent e-Mel	16	13.3	120
read e-Mel	29	24.2	120
Other activities	10	8.3	120

This section seeks to answer research question 1: What is the pre service teachers' readiness to use mobile devices for learning?

Table 6 shows the willingness of the students to use mobile devices for learning. The respondents showed a high response rate (mean = 4.1, SD=0.7) on using mobile devices for learning.

Table 6: Availability Using Mobile Devices to Learning

No.	Subject	Mean	SD
1.	Ready to learn at anytime and anywhere using mobile devices (e.g. cell phones, smart phones, Tablet PCs, iPad, iPod, etc.)	3.9	0.9
2.	Ready to do enrichment activities while waiting for the bus/parents/friends	3.6	1.0
3.	Ready to use my phone as a learning tool	3.9	0.9
4.	Ready to use other mobile devices (e.g. cell phones, smart phones, Tablet PCs, iPad, iPod, etc) as a learning tool	4.1	0.7
5.	Ready to use learning packages for science education (EDU paper) if it was designed in portable media.	3.9	0.8
6.	Ready to keep course materials such as slides, lecture notes, practice questions, quizzes in the mobile phone because it would benefit my learning process.	3.9	0.9
7.	Preparing my personal time in installing software that allows learning resource materials (e.g. slides, lecture notes, practice questions and quizzes) which can be used in mobile phones.	3.7	0.9
8.	Ready to buy a new mobile device because it will improve the performance of my learning at the Institute of Teacher Education	3.6	0.8

This section seeks to answer the second research question: What is the perception of pre service teachers on using mobile devices for learning?

As shown in Table 7, the highest mean is the willingness of students with smart phones to access the internet to find information (Mean = 4.4; SD = 0.7). The other items that have a high mean is, using smartphones to download educational materials (Mean = 4.1; SD = 0.8) and using smartphones to check social sites (Mean = 4.2; SD = 0.8).

Table 7: Perception on Using a Smart Phone to Learn

No.	Subject	Mean	SD
1	Using smart phones to download entertainment materials such as songs, movies, videos, and games	3.8	1.0
2	Using smart phones to download educational materials such as dictionaries and mobile educational games	4.1	0.8
3	Using smartphones to browse the internet in looking for information.	4.4	0.7
4	Using smartphones to log in to social networking sites like Facebook, Twitter, Yahoo Messenger, Friendster, and so on.	4.2	0.8

As shown in Table 8, the highest mean is the willingness of the students to have a laptop to access the internet in finding information (Mean=4.7; SD=0.5). Other items that have a high mean is using a laptop to download educational materials (Mean =4.5; SD=0.7) and using a laptop to login at social sites (Mean =4.5; SD=0.6).

Table 8: Perception on Using Laptops for Learning

No.	Subject	Mean	SD
1	Using laptop computers to download entertainment materials such as songs, movies, videos, and games.	4.2	1.0
2	Using laptops to download educational materials such as a portable dictionary and educational games.	4.5	0.7
3	Using a laptop to surf the internet to find information	4.7	0.5
4	Using a laptop to login at social networking sites like Facebook, Twitter, Yahoo Messenger, Friendster, and so on.	4.5	0.6

As shown in Table 9, the highest mean is the willingness of the students to use tablet computers in accessing the Internet to find information (Mean =4.5; SD=0.7). Other items that have high mean is using tablet computers to login at social networking sites (Mean =4.3; SD=0.7) and using tablet computers to download educational materials (Mean = 4.2; SD=0.7).

Table 9: Perceptions on Using Tablet Computers to Learning

No.	Subject	Mean	SD
1	Using tablet computers to download entertainment materials such as songs, movies, videos and games.	3.9	0.9
2	Using tablet computers to download educational materials such as dictionaries and mobile educational games	4.2	0.7
3	Using the tablet computers in browsing the internet to find information needed	4.5	0.7
4	Using a tablet computer to log in to social networking sites such as Facebook, Twitter, Yahoo Messenger, Friendster, and so on.	4.3	0.7

Discussion and Implications of the Study

The results showed that all of the respondents have their own mobile devices, especially cellphones. In fact, most of them have more than one mobile phone, and majority of the cellphones they own has to the ability to access the internet. This scenario is an important indication of the possibility of using mobile learning in teaching and learning. Malaysia has good infrastructure facilities, comparable to other developed Asian countries such as Korea and Japan. Extensive usage of Wi-Fi facilities either in schools, higher education institutions, or public places would allow easy access to the internet. This will enable students to perform a variety of activities with their mobile devices, particularly their mobile phones, tablet computers, and laptops.

This study clearly shows that students have a high level of readiness in using mobile devices for learning. This study has found that the majority of students are willing to use learning materials which can be downloaded on mobile devices. Portable learning materials such as mathematical softwares (Durdyev, 2012), quizzes (Montanaro, 2012), or English treasury (Song & Fox, 2008) is very interesting and the students have agreed that these have a positive impact on teaching and learning.

The results showed that the level of preparedness of the students in the use of mobile devices for learning is above 80%. Students have a high level of readiness to learn anytime and anywhere as well as to perform a variety of learning activities such as when they are outside waiting for the bus, a friend, or at any leisure.

Overall, this study shows positive perceptions among students when it comes to mobile learning. They showed a positive response in using their mobile devices for learning in particular. The results showed that aside from using mobile devices for entertainment and social networking, the students also preferred to accommodate learning materials with mobile devices like cellphones, laptops or tablet computers. This is a good sign in the development of mobile learning in Malaysia.

Today's learning materials for mobile learning is still lacking. Not many institutions are implementing mobile learning initiatives. If there is, the usage is rather limited. Among the institutions supporting the mobile learning initiative is the Open University Malaysia (OUM) or other institutions such as the Malaysian Smart School. OUM has been using mobile learning initiatives, particularly for management and very little learning-related activities. Similarly, there is also a smart school but more mobile initiatives such as presence management or get the marks of students.

For institutions to implement programs or curricula through mobile devices, Bora & Dhumane (2012) states that there are four criteria to be considered when mobile learning is to be included in main stream education:

1. List of the courses that lean initiatives mobile learning in formal educational institutions prospectus. It is important to incorporate mobile learning into education and training.
2. Cheaper charged tuition fees. Some countries charge tuition fees for enrolment in advanced courses and higher education.
3. The course is assessed as the other courses. If mobile learning courses are not evaluated with the same methods and procedures as the other courses offered by the institution, they cannot be considered as part of mainstream education and training.
4. The courses that have achieved accreditation. It is important to incorporate mobile learning into the mainstream. Like distance education and e-learning, accreditation of mobile learning is an indication that the sector has entered into the mainstream.

In Malaysian institutions such as the Royal Malaysian Police (RMP), Road Transport Department (RTD), and other educational institutions, mobile learning initiatives are being used in managing results or the results of the interviews and the like. The use of mobile learning in teacher education institutions are lacking.

Today's generation of students is very enthusiastic with their mobile devices which can always surf the Internet at any time through wireless technology. But nowadays, cellphones are not allowed to be brought to school due to fears of having the process of teaching and learning be

disrupted by these devices. However, a number recent studies show that mobile devices like cellphones can serve as useful and effective learning tools (Hyo-Jeong So, Vosloo & West, 2012). These devices open up the possibility of allowing teachers and students to interact in a two-way learning process.

The use of mobile learning is not official or in indirect method only. For example, students contact lecturers via sms or whatsapp or phone call to get information about learning, problem assignments, and so on. During lectures in lecture halls, there are students who surf the internet to read related topics, download material from YouTube, find the meaning of specific terms, or find exercise questions. These conditions of mobile learning actually occur indirectly. Only that, the less there is at present, is the design of formal learning and specific learning materials at the Institute of Teacher Education is still lacking. The adoption of mobile learning is not widely used as a method in teaching and learning.

Conclusion

The implementation of mobile learning in education in Malaysia is not impossible. In fact, the implementation of a mobile learning initiative at the Institute of Teacher Education is something that should be given due attention by various parties. Mobile learning should be encouraged to take place in a classroom setting like how e-learning was received and given credit by the education system before.

Mobile devices have taken over the role of desktop computers and e-learning technologies. Through a mobile learning initiative, millions of dollars can be saved since less electricity, less special laboratory exercises, and less network cables are used.

Universities and colleges can use mobile learning initiatives on matters related to management. For example, they can use mobile learning as a means of communication with their students when making announcements such as schedule change, submission deadlines, registration procedures, and other administrative requirements.

Higher education institutions should move forward and develop training modules for smart phones, tablet PCs, iPad or iPod. Furthermore, a book on mobile learning needs to be written. In terms of technology, Internet access is a must for the implementation of mobile learning. To accommodate the over flow of data on educational websites, there is a need for high-speed wireless data transfer and it should beat a reasonable cost to the public.

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Special Report to IJODEL

ODEL at UPOU: Some Historical Antecedents (How Did We Get Here, Anyway?)

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Beginnings of Distance Education in the Philippines

Most historical accounts, by definition, are descriptions of events that are arranged according to how they relate with one another that would tell a meaningful, logically progressing story. They frequently are not pre-arranged or pre-planned. They become part of the history of an event simply by the manner in which they are later organized in support of the event in question. This is how the development of distance education and open distance e-learning at the University of the Philippines may be viewed. The events that led to the establishment of the U.P. Open University in 1995 were independent events rather than carefully pre-planned chronological happenings over a pre-determined time line.

There were two major events particularly at UPLB that eventually were considered the precursors of distance education in the university and then the UP Open University. These were the introduction of radio broadcasting and the formulation of a specific radio broadcasting format called the school on the air. Here are brief accounts of those events.

Rural Educational Broadcasting Opens New Horizons for Distance Education and e-Learning

The use of radio broadcasting as a tool to promote education took some time to gel among educationists and broadcasters in the Philippines. Radio broadcasting in the Philippines started by the Americans in 1922 as a commercial enterprise rather than as educational innovation and serious educational broadcasting in the country did not begin until the 1950s. In fact, it was in 1959 when the School Broadcast Program was launched jointly by the Department of Education and the Philippine Broadcasting Service. This broadcast service provided valuable and up-to-date materials to teachers, pupils, and adult learners (Librero, 1997). They were essentially broadcast materials designed to help teach English to Filipinos and were more useful to teachers than to pupils in elementary schools. These broadcasts were designed to be supplementary materials to classroom lessons in English, and teachers tuned in to the radio program, which was scheduled at a certain time during the class period for English, so the pupils could participate in the language drills that were the content of the radio broadcasts. Toward the end of the 1960s, however, that Department of Education found these broadcasts difficult to sustain and eventually had to be phased out.

In the early 1950s, a parallel development in the use of radio in the area of non-formal education was evolving. This was, in the Philippines, the beginnings of what later became to be known as rural educational broadcasting. Rural educational broadcasting was defined later as the use of radio for non-formal education purposes primarily to support planned social change in the rural setting (Librero, 1985). It was in 1952 when the enterprising, free-lance, Iloilo City-based broadcaster named Pacifico Sudario, conceptualized, produced and broadcast an educational radio program designed to teach farmers in Iloilo Province and the rest of Central Philippines modern farming techniques. It was called “farmers’ school” and was broadcast on Radio Station DYPR in Iloilo City (Tan, 1971). This endeavor proved to be successful so that in 1963 the National Cottage Industries Development Authority (NACIDA) adopted Sudario’s “school” format in a radio program discussing information on swine raising (Flor, 1995). This radio program was broadcast from Manila.

Rural educational broadcasting grew and developed much more systematically at the U.P. College of Agriculture (UPCA, elevated to the UPLB in 1973) in Los Banos where rural educational broadcasting was pursued as a field of study in the then Department of Agricultural Information and Communications (DAIC, which later became the DDC). This began in 1962 with the conceptualization of a project to design and implement a research-oriented radio broadcasting operations in the UP College of Agriculture as part of its action research and extension programs. Full operation of the radio broadcasting station, Radyo DZLB, began broadcasting on August 2, 1964. It broadcast at a power of only 250 watts, but it right away produced and broadcast customized radio programs for farmers, rural homemakers, and the rural youth.

In 1967, the first school on the air was aired. It was called Paaralang Panghimpapawid sa Pagatasan (School on the air on Dairying), a 30-minute program that broadcast radio lectures and discussions and interviews on dairying directed specifically to dairy farmers of Jala-jala, Rizal province who were participants in a research-extension program of the Dairy Training and Research Institute (DTRI) of the UP College of Agriculture.

From then on, schools on the air were broadcast and evaluated by DZLB every year. In 1976, with a more powerful 5,000-watt transmitter, DZLB increased its efforts to reach rural listeners in the provinces of Laguna, Rizal, Batangas, and Cavite. It was in the 1970s when DZLB was at its height of popularity as an alternative to the commercial broadcasting stations originating from Metro-Manila and other urban centers of the country. It also became the de facto training center for farm broadcasters from the Department of Agriculture.

It should be pointed out that DZLB was not only the radio station broadcasting educational content from the 1960s to the 1980s, but it was the only radio station that time that was also doing serious research alongside its broadcasts so that it became practically the center of the systematic study of radio broadcasting in non-formal education in the country. Out of this experience evolved the school on the air format, which was adopted at the national level by the Department of Agriculture in 1973, in support of the then national Masagana 99 rice production program of the Philippine Government. As each of 110 farm programs hosted by farm broadcasters of the Department of Agriculture all over the country were engaged in conducting schools on the air during that time, there were practically 110 schools on the air that were being broadcast simultaneously all over the country. These schools on the air had a total of about 165,000 farmer-enrollees at any given time. The Department of Agriculture maintained schools on the air annually for at least a decade beginning in 1973, which means that a minimum of 1.65 million farmers benefitted from the schools on the air.

The Schools On The Air of DZLB

The school on the air (SOA) so far has been the most comprehensively researched and possibly the most effective radio program format for farmers in the Philippines. Various theses of students of development communication at UPLB have shown that participation in schools on the air contributed in large degree to the increased productivity of rice throughout the country.

In a seminal publication in 1976, we have defined the school on the air as a “specially-designed radio program where the subject matter is presented systematically and in progressive manner with the ultimate goal of achieving desired results under a teaching-learning situation” (Librero, 1976). The techniques employed by the SOA were actually instructional even if the broadcasts were not undertaken in classroom setting. The enrollees listened to the radio program, frequently alone in their homes or in groups. The SOA developed as a non-formal education strategy. The specific techniques, however, were adoptable to formal instructional broadcasts.

In our original conceptualization of the SOA, we identified five characteristics that must be present, as follows:

1. The SOA has a well-defined set of instructional objectives.
2. The SOA must be well-planned.
3. The SOA should deal with only one major subject matter at any given time. That is, one major topic for each “school broadcast period” which may last anywhere from one month to three months.
4. The SOA should present the subject matter in a progressive manner, according to learning principles.
5. The SOA should be a cooperative undertaking among appropriate agencies since the radio station cannot do it alone.

Between 1967 and 1990, Radio DZLB broadcast 28 SOAs on subject matters ranging from agriculture to health. These were conducted in collaboration with various national government agencies and educational institutions. All these SOAs were actually small scale schools because their enrollments have always been limited due to lack of resources.

How is the school on the air undertaken? In earlier papers, we have identified specific steps in the conduct of SOAs. In general, these steps may be classified under three major categories: pre-broadcast activities, broadcast proper activities, and post-broadcast activities.

1. Pre-broadcast activities include preparation of course syllabus, recording to radio lectures, conduct of enrollment campaign, preparation of broadcast scripts, and conduct of pre-broadcast examinations. All these must be conducted before the SOA goes on the air.
2. Activities during the broadcast proper include first the orientation broadcast. This is the actual start of the school on the air. Usually, in this broadcast the policies and guidelines of the SOA are discussed and explained. Everything that the enrollees need to know about the SOA are explained in this broadcast.

As the SOA proceeded, it became acutely necessary to introduce various means of motivating enrollees to continue listening and participating in the broadcasts. There are many ways of doing

this. For example, experiences in various schools on the air in the past indicated that broadcasting interviews with learners themselves provided great satisfaction to the learners. The listeners, it has been observed, love to listen to their own voices or hear their names mentioned on radio.

Another important activity that was part of the broadcasts were the in-broadcast tests. Normally, an SOA would last for more than one month, hence it was wise to test whether or not your listeners were learning from the school. As the SOA proceeded, there were times when certain modifications had to be introduced on the format of the program. This was necessary in order to make the program more exciting to listen to. In many cases, adjustments were made on the delivery of the radio lectures and the over-all pace of the radio program itself.

There were dropouts, by the way, because many were not able to listen regularly to all broadcasts and actually opted to drop out from the school. There were two types of drop outs: those who have lost interest in the broadcasts altogether, and those who have failed the in-broadcast tests. In both cases, the situation was usually remedied. For example, to maintain interest, it frequently became necessary for radio hosts to be sensitive to program modifications when the need arose. Radio listeners always found time to listen to radio programs that they were interested in.

3. Post-broadcast activities include a general course review, a post-broadcast examination, and follow-up activities. The general review was needed in order to make sure that the enrollees recalled important aspects of the subject matter that they studied and raised their level of knowledge confidence. The post-broadcast examination determined whether or not the enrollees learned what had been the subject of the SOA. Then the follow-up activities were necessary in order to make sure that those who had graduated from the “school” continued to listen to the radio broadcasts and continued to search for information that they needed in their daily activities.

Science Teaching Using Distance Instruction: An Experiment

The STUDI Concept

Science and technology have always been considered important components of national development, and science education therefore had been acknowledged a vital concern of the academe particularly at UPLB which was the seat of the Center of Excellence in Mathematics, Chemistry and Biology. Sensing the need to improve the state of affairs in science education in the country, then UPLB Chancellor Emil Q. Javier, who was concurrently Science Minister that time, issued an Administrative Order on 18 April 1964 creating a Task Force to develop a plan for a pilot distance education project for science teachers. The intentions of the Administrative Order were clear. It said:

The idea is to avail of the expertise in the basic science of UPLB faculty in the development of instructional materials, and to offer courses leading to a degree of science teaching with a view to upgrade science teaching competence. It is also intended that advances in new technology be fully exploited in order that the materials developed would gain wider and most efficient distribution and utilization.

The conceived operational name of the administrative order was STUDI, standing for Upgrading of

Science Teaching Using Distance Instruction, an action research project. It was a fairly large project implemented by a team comprised of known faculty members of UPLB who served as study leaders, writers, and editors for mathematics, physics, chemistry, and biology, and consultants for education, educational technology, curriculum, and admissions. The project was headed by Dr. Ma. Cristina D. Padolina, then Director of Instruction of UPLB, as Project Leader.

STUDI collated experiences in distance education in other countries and also conducted a survey to determine if distance education was acceptable among Filipino science teachers. Results of the survey indicated several revealing information, the most glaring of which was that Filipino science teachers were not trained in the field of science which they were teaching. Specific results showed that among college and university teachers, only 51% of those teaching chemistry were graduates of chemistry programs, 31% of biology teachers had training in biology, 18% of mathematics teachers had training in mathematics, and 14% of those teaching physics had training in physics. A similar situation was also observed in the case of teachers at the secondary level.

A more extensive national survey that was undertaken by the Science Promotion Institute of the then National Science and Technology Authority (now the Department of Science and Technology) showed a better picture that was alarming just the same. The percentage of qualified teachers in mathematics, physics, chemistry, and biology were 61, 25, 32, and 52, respectively. Only 58.8% of teachers of general science were qualified to teach general science.

There were two significant observations gleaned from these data. First, there was a clear need for an urgent and immediate corrective action to solve the problem of lack of training of science teachers. Second, there was a clear need to provide opportunities for longer-term training for teachers without requiring them to go on an extended study leaves of absence. How should these two problems be resolved immediately? Briefly, what came into the minds of the leaders of the UPLB Task Force was to undertake a program designed to upgrade the skills of the science teachers (which was sufficiently long term) but which could provide content mastery), or to provide opportunity for teachers to master content over a much shorter time (like a refresher course).

STUDI had also just completed its own evaluation of experiences in distance education in various countries and decided that there were distinct benefits of a distance education program for Filipino science teachers, as follows:

1. Teacher would continue to earn while studying;
2. Schools should not have the problem of finding substitute teachers and would not run the risk of hiring less capable substitutes;
3. Teachers would not have to go on leave of absence or be separated from their families;
4. Scholarship costs would be less since they would not have to cover living expenses and would not also have to provide for the salaries of substitute teachers;
5. Teachers could study where, when, and how they chose;
6. The teachers' current teaching situation would become a situation that could actually form a basic study resource as they would learn while teaching at the same time;
7. The teachers would be able to apply immediately in their teaching tasks that they have learned from their lessons;
8. The development of teachers would take place within their normal work environment so their development activities would immediately relate to their on-going work. This would eliminate dislocation and re-entry problems associated with having to go on leave of absence;

9. The teachers would invariably interact with other teachers not involved in the program thereby actually disseminating and sharing what they have learned.

The Pilot Course of STUDI

During a consultative meeting between the Project Management of STUDI and selected science educators and science teachers, STUDI was referred to by one of the most outstanding Filipino professors of science education, UP Professor Josefina Fonacier, then Director of the Institute for Science and Mathematics Education Development (ISMED) at UP Diliman, as “most needed and a most daring program.” It was observed that the Philippines, compared to other countries in the region at that time, had been the slowest in adopting distance education which had been referred to as the form of education of the 21st century.

STUDI was a pilot project undertaken with the objective of “determining not so much if a distance education program would succeed but more to determine the conditions under which such a program would succeed” (STUDI Terminal Report, undated).

Four test courses were developed, one each for mathematics, physics, chemistry, and biology. These test courses were called either Special Problem or Special Topics courses under the UPLB course numbering system. It was customary at UPLB to classify test courses (to be tried out before they would finally be instituted as formal three-unit courses) as either Special Problem (numbered 190) or Special Topics (numbered 191), respectively. The STUDI terminal report described the test courses as follows:

The topics covered in the courses were determined on the basis of the learning needs expressed by the teachers in the survey conducted by the Task Force. The topics which they listed were quite diverse and it was not possible to cover all in one course. Also considered in the creation of the courses were the science curricula which were in use at that time in the secondary schools and those being planned for implementation. The Mathematics course included logic and set theory, functions and relations, abstract algebra and linear algebra. The Physics course focused on the concepts of theories of motion. The Chemistry course was mainly concerned with biochemistry but featured some basic topics such as chemical bonding, acids and bases and organic chemistry which were intended to provide some background for understanding the topics of biochemistry. On the other hand, the Biology course covered a wide range of topics covering basic biological concepts such as reproduction, plant and animal development, systematics and ecology.

STUDI Course Development and Delivery

The STUDI courses were prepared by writers who were assisted by media consultants and language editors all of whom had no formal training in distance education. Whatever they knew about distance education and how to prepare modules for independent study they gained from studying appropriate references.

Members of the course writing teams had good background in writing although writing for radio was new to them. While it was initially the intention to have experienced radio writers do the writing of the radio lessons, it was decided later that such radio lessons should be written by the group as a team. In the end they found the activity enjoyable and enhanced their writing creativity and imagination.

The lead time for the preparation and production of the course materials was set at one and one-half years. However, writing invariably fell behind schedule so that the course materials were completed very close to the time they were needed for production and distribution. There was practically no time for revision of the materials.

The production process may be best described in the terminal report of the project.

The production of the course materials can be best described as having been conducted in the traditional Filipino “Bayanihan” spirit. Course team members, administrative staff of the institutes, even family members of the coordinators helped in proof reading the modules editing the word processors, collating the materials, etc.

An important observation made in the Project’s Terminal Report was that it “became more important in some cases to be able to produce the materials on time than to use the most economical method of obtaining multiple copies.”

The course materials were in printed modules and recorded radio lectures. The radio lectures were broadcast over Radio DZLB, the rural educational broadcasting station of UPLB. The radio lectures were stored in magnetic audiocassette tapes for distribution to teachers in areas not penetrated by the signals of DZLB.

The printed modules followed the same formats as well as in terms of content treatment and the use of simple language. The length of the modules varied from course to course. While each module started with the statement of objectives and ended with a summary, certain elements differed. For example, for the biology modules questions that learners needed to answer were embedded within the text and were to be answered by the learners as they encountered them. In the Mathematics modules, the questions which were also embedded within the text were graded. In the case of the modules for the Physics and Chemistry courses, a separate set of questions were given at the end of each module and were also graded. The learners were instructed to mail their responses to these questions.

The radio lessons ranged from 8-20 minutes and were contained in a 30-minute program titled Science Encounters. The program was aired over DZLB Monday to Friday at 8:00 p.m. The radio lessons for each of the modules were broadcast only once a week: Mathematics (Monday), Physics (Tuesday), Chemistry (Wednesday), and Biology (Thursday). The Friday broadcasts were reserved for the discussion of the answers to the questions in the modules. During the second semester, the Friday broadcasts were excluded and the feedback to the teachers were included in the regular broadcasts for Mathematics, the feedback for Physics modules were included in the Tuesday broadcasts, and so forth.

The radio lessons varied in terms of format and content treatment. Some were presented in straight lectures, others dramatized, and still others in a combination of drama and lecture. Some lessons dealt with day-to-day applications of concepts discussed in the modules, others provided some historical background to the concepts, and still others provided further discussion of the concepts.

Some Pertinent Observations

The STUDI experience highlighted some interesting observations that could provide strong arguments in support of a decision for the University of the Philippines to engage in distance education, even if originally the STUDI project was undertaken only to determine the conditions that would support the implementation of distance education programs to provide opportunities for science teachers to upgrade their skills and knowledge of content. In any case, the following conditions were highlighted:

1. A significant proportion of the science teachers who participated in the STUDI project indicated that they had no opportunities to upgrade their qualifications as science teachers in the traditional system of instruction due mainly to economic reasons.
2. The level of motivation of teachers to learn independently would enhance their success as distance learners. It was observed that the motivation levels of more than half the participants in the STUDI Project were enhanced by the amount of time they had for study, the novelty of the distance learning method, and the difficulty of the materials to be learned. These conditions may be adjusted to create a situation more favorable to self-study.
3. The STUDI Project was conceived to be able to make courses more easily available to as many science teachers as were in need of skills upgrading. While a more liberal admission system would provide opportunities for more to enter the program the degree of upgrading would vary among the teachers requiring upgrading. This condition could have posed some problems in the design of the courses.

Such a situation could have been remedied, however, by providing some kind of a bridging mechanism to level the playing field so to speak. Such bridge program could have also served to orient the incoming students on the nature of distance learning and trained them on the appropriate study skills which distance learners ought to possess.

4. The observations made by course coordinators and writers in the STUDI Project pointed to the fact that a “friendly” learner environment for teachers who enjoyed the support of their superiors and the company of their colleagues or co-teachers as they studied the same courses, contributed to the build-up of motivation to continue participating in the STUDI Project. This situation also pointed to the potential positive effects of administrators allowing their teachers to participate in distance learning activities in groups thereby forming some kind of local learning communities.

Message From the STUDI Experience

The over-arching message from the STUDI experience is that the Filipino science teachers, aware of their own shortcomings, were motivated to seek opportunities to upgrade their skills both in content and methods preferably in ways that would not pull them out of their daily grind and the company of their families.

The STUDI Project's output, the Diploma in Science Teaching, since its initial offering in 1988, has been consistently a "best seller" of an academic degree program. When the curriculum was refined further in 2001 it bifurcated into the following programs: Diploma in Science Teaching and the Diploma in Mathematics Teaching. Both degree programs have been "best seller" programs until today.

The UP Distance Education Program

Establishing the UP Distance Education Program

The University of the Philippines has always maintained very high academic standards and is extremely serious about preserving its stature as a conventional university. Therefore, introducing distance education in the university did not sit well with senior professors particularly those who considered distance education as a poor alternative to classroom instruction. This was the backdrop against which UP President Jose Abueva created in July 1991 a Distance Education Committee to "study the desirability and feasibility of distance education in the University" (Nemenzo, 1993) The Committee drafted a concept paper and an expert in distance education from abroad was invited to assess the university's capabilities to pursue education efforts.

It was the consensus of the members of the Distance Education Committee that a more rational way to pursue the issue of distance education was to set up an executive arm of the Committee. Hence, the Distance Education Planning and Implementation Unit (DEPIU) was created to "provide information on the potential demand and support for distance education in UP" (Nemenzo, 1993) The information that was supposed to be provided by the DEPIU would enable the university to decide rationally on (a) "whether or not to continue with the distance education initiative,; and if it does to (b) finally decide on its priority areas." The DEPIU was also to design an information campaign on the viability of a quality distance education, explore potential funding sources, and start implementing some pilot courses.

The establishment of the UP Distance Education Program was formalized when it was officially approved by the Board of Regents in its 1053rd meeting on 27 August 1992. The Program was to focus on three subject matter areas, namely: teacher training, applied computing, and public administration. The final choice of subject matter areas depended on a set of criteria which was part of the proposal approved by the BOR, as follows:

1. Which would best attract students and have the longer-term potential for taking advantage of the economies of scale?
2. Which would have the backing of a well-motivated and committed staff?
3. Which would lend itself best to imaginative distance education presentation using the range of media?
4. Which would be more likely to attract most support from the university, government, and other institutions and potentialities?
5. Which subject is likely to have the greatest public impact and publicity/promotion value?

The Program was provided funding of P500,000 for its first year of operation, with the following personnel: a director, two research assistants, administrative assistant, and messenger. In other words, it was a small office just about enough to simply coordinate activities of various units within the university that would be working on the development of course materials. There was really no way that this little office would be able to develop programs on its own, and it was not meant to be. To complete its task of choosing what courses to develop and undertake their evaluation, the Program was given the following timetable:

Phase I (Planning)	6 months
Phase II (Preparation of Materials)	12 months
Phase III (Implementation: the first Courses in operation)	12 months
Phase IV (Completion and Evaluation)	12 months

It was not clear in this scheduling whether or not the UP Distance Education Program was going to be a continuing major activity of the University, although it could be argued that the continuity of this Program was implied in Phase III. What Was clear from this initiative, however, was the fact that at the time the BOR approved the creation of the UP Distance Education Program there was actually no intention of pushing this further to establish a separate entity parallel with the conventional UP campuses that would be mandated to develop and offer academic degree programs.

Philosophical and Policy Environment

The time between the UP Board of Regents' approval of the creation of the UP Distance Education Program and the end of the Abueva presidency was less than one year, and there really was not enough time for the Program to pursue the activities it lined up to do. Perhaps the most significant document produced in this interim period was the essay written by Dr. Francisco Nemenzo, then Executive Director of the UP Distance Education Program, which served as the philosophical and policy framework for the Program. This document dealt with four basic issues: definition of distance education, rationale for pursuing distance education at UP, what the UP Distance Education Program was doing, and a clarification of both the strengths and weaknesses of the conventional and distance education modes.

Nemenzo's definition of distance education was based on the standard definition of it but in much simpler form. He said that the essence of distance education was that it was a "program of self-study" (Nemenzo, 1993). He focused on the novelty of distance education which was the emphasis on the "method of designing texts especially for self-study, the use of modern communication media and the network of student support services."

Why distance education? As regards this point, Nemenzo made some interesting observations. He was a believer of the conventional university model but at the same time he appreciated the weaknesses of the conventional university. He said that the conventional university, if it was to stay relevant in a changing world, "must dare to explore uncharted territory." After all, even the traditional "citadels of intellectual snobbery like British universities" have found that distance education was a viable response to the changing times.

In the Philippines, who would possibly benefit from distance education? First on Nemenzo's were the "late bloomers" whom the University of the Philippines may have unwittingly discriminated against through the UPCAT. And the UPCAT, Nemenzo says, was not exactly infallible because it was more a "test of family upbringing and secondary schooling than of native intelligence." Another group of individuals who stood to benefit from a distance education program at UP were the non-academic personnel of UP who needed to further their studies in order to get ahead in their professions.

Nemenzo observed, "other potential beneficiaries of distance education are those who develop interest in new areas of intellectual inquiry, the disabled, the prisoners, the full-time housewives, and others who could not pursue degree programs the conventional way and yet have the drive and ability for college work." Distance education, Nemenzo said, would give those individuals a second chance.

What was the UP Distance Education Program all about? By design, the Program was not a degree-granting unit. It was simply an academic support unit. In other words, its efforts were geared toward just providing support to any unit of the university that would choose to offer its courses in the distance mode. Its tasks, according to Nemenzo (1993) were:

1. To encourage the various colleges and departments to organize their own distance education courses;
2. To provide them with technical assistance;
3. To put them in touch with faculty members of other units who might be recruited to their course teams;
4. To help them look for funds; and
5. To ensure quality control.

The Program had identified priority initiatives in 1992 which included a Master of Science in Development Architecture, a collaborative project of the UP Diliman College of Architecture and the United Architects of the Philippines; a Diploma in Local Government Administration, a project of the College of Public Administration (now National College of Public Administration and Governance); and a Diploma in Applied Computing, a project of the Institute of Mathematical Sciences and Physics at UP Los Banos.

The Program was also encouraging the preparation of instructional materials for General Education courses, focusing initially on the courses Social Science I, Social Science II, and Mathematics I. It was also the intention of the Program to seek approval by the UP Diliman Council to allow qualified students to choose between the conventional and distance modes for their GE requirements.

Non-formal courses were also targeted by the Program particularly for those not interested to pursue academic credits for their course or degree programs. The idea of undertaking broadcasting courses on television was also being considered by the Program because the Program Executive Director believed that the university should build its capability to employ television and video cassette recording (VCR) technologies.

The Nemenzo document also dealt briefly with the age-old issue of whether or not the distance mode was inferior to the conventional mode of instructional delivery. Dr. Nemenzo cited two instances where he pointed out that respected professors in conventional systems had grave reservations about distance education.

In the case of the United Kingdom Open University (UKOU), British professors were skeptical in the beginning but were convinced that the UKOU was actually a good idea when the UKOU was already producing the best instructional materials in Britain. The fact that the Prime Minister of Great Britain at that time, John Major, was a product of distance education helped greatly in dignifying distance education.

In the case of Thailand, Nemenzo reported, professors at Chulalongkorn University (considered the equivalent of the University of the Philippines in the Philippines) thought of introducing distance education at the tertiary level in Thailand in the 1960s but there was a very strong negative reaction from the academic policy making body of the university. The professors eventually resigned from Chulalongkorn and helped establish the Sokhuthai Thammathirat Open University (STOU). Initially, STOU reeled from the vicious sniping from Chulalongkorn, but during the period 1980s to the 1990s, STOU established itself as a respected open university at the international arena. As a result, Chulalongkorn began conceptualizing its own distance education program in the 1990s but still has not caught up with STOU in terms of stature in the field of distance education.

The distrust of distance education stems from the belief that there could be no substitute to the teacher. This is an age-old argument from conventional teachers even in the United States when teaching machines were introduced into the instructional process. Of course, machines could not replace the human teachers. There was, however, a caveat here. The Nemenzo document pointed out, for example, that “the question is whether the classroom is the only suitable milieu for teaching.” He asked, “isn’t it possible to teach as effectively through print, audio, and video?”

Admittedly, there were things that distance education programs may not be able to provide adequately such as a dialogic atmosphere in classroom and exposure to extra-curricular activities. To these points, the Nemenzo document countered, “how much of these do the present crop of conventional students still enjoy when frivolities and outright inanities seem to pervade the campus?” In any case, Nemenzo pointed out that the “cranky ‘terror teachers’ have no moral ground to assail distance education on this score because their style of teaching inhibits an authentic dialogue.”

Still on another point, the UP Distance Education Program under the direction of Nemenzo during the Presidency of Jose Abueva put forth a significant argument in favor of distance education. The University of the Philippines had been turning away many qualifiers of UPCAT and had never given another chance to those who almost made it to the cut-off point. The situation at UP when Nemenzo was making a point for distance education was that about 20% have made it to the UPCAT cut-off point but due to lack of resources UP admitted about 18%. Even that made UP burst at its seams.

According to Nemenzo, “universities abroad (including the ancient citadels of intellectual snobbery like the British universities) have found distance education a viable response to this extremely limited absorptive capacity of the conventional university.”

Establishment of the U.P. Open University

Three major events at the University of the Philippines converged and led to the establishment of the U.P. Open University (UPOU). These were the introduction of rural educational broadcasting in 1964 at the then U.P. College of Agriculture (which is now the UPLB), the completion of a major action research project at UPLB called Science Teaching Using Distance Instruction (STUDI) in 1988, and the implementation of the Distance Education Program of the University of the Philippines in 1991.

The first portion of a chapter of the book by this author, Distance Education in the Philippines, provides a brief and concise discussion of how the UP Open University was established. That chapter portion is reprinted here to provide a clear description of the beginnings of the UPOU.

The resolution of the Board of Regents of the University of the Philippines System establishing the U.P. Open University on 23 February 1995, states:

Faced with the perennial challenge of providing quality higher education to a growing population distributed in over 7,000 islands, the U.P. through the UPOU's open and distance learning, will allow wider access to quality education. As an institution with the largest full-time faculty, with the highest number of advanced degrees and the widest fields of study among institutions of higher learning in the country, U.P. is in the best position to offer quality distance education programs.

The UPOU was designed to provide the mechanism for a wider access to UP education for more Filipinos without watering down the quality of education that it delivers. It was felt that UP was in the best position to offer instruction through distance education in the country, given its top caliber human resources, expertise, and experience.

The UPOU is a full-fledged university, one of the seven (now eight) campuses of the University of the Philippines system. Its foundation and development were influenced by a series of events starting with the first school on-the-air broadcast originating from UP Los Banos in 1967. This was followed by the implementation of STUDI in 1984, with support from Science Minister Emil Javier who was concurrently Chancellor of UP Los Banos. As a result of a successful STUDI, a formal degree program was formulated and instituted by UP Los Banos upon approval by the UP Board of Regents in 1988. Then in 1991, UP President Jose Abueva organized at (emphasis provided) the system level the UP Distance Education Program with Dr. Francisco Nemenzo as Executive Director.

When Emil Javier became the 17th President of the University of the Philippines in 1993, he obviously took the report of STUDI very seriously and immediately institutionalized the UP Distance Education Program and appointed Dr. Ma. Cristina D. Padolina as Executive Director (vice Dr. Francisco Nemenzo). Thereafter, in each autonomous campus of the UP System, an office of Distance Education, headed by a Director, was created.

Then on 23 February 1995, the UP Board of Regents approved the establishment of the U.P. Open University as the 5th autonomous campus of the UP System, and with the UP Distance Education Program as its nucleus. The Office of Distance Education in each of the autonomous campuses of UP (Diliman in Quezon City, Los Banos, Laguna; Manila; Iloilo City) were transformed into the Schools for Distance Education (SDE), each one headed by a Dean. When the UPOU was reorganized in 1999, these geographically-based SDEs were transformed into discipline-based Faculties, namely:

Faculty of Education, Faculty of Health Sciences, Faculty of Management Science, Faculty of Social Sciences and Humanities, and Faculty of Science and Technology. This organizational structure was perceived as top-heavy by the System Administration of President Nemenzo, hence UPOU was further reorganized in 2003 to reduce the number of Vice Chancellors from three to two, and the number of Faculties from five to three, as follows: Faculty of Education, Faculty of Information and Communication, and the Faculty of Management and Development Studies.

Factors that Influenced the Establishment of UPOU

Why did the UP go into distance education to the extent of establishing the UPOU? The establishment of the UPOU, from a broader context, is well explained by the fact that the Board of Regents recognized the “perennial challenge of providing quality higher education to a growing population” in the country. However, because of limited resources, the conventional colleges could not admit all students who applied and qualified for admission. Through distance education, the UPOU could allow the UP System to “respond to growing demand for quality graduate and undergraduate education” even in areas that are traditionally underserved by the tertiary education sector.

Viewed from more specific concerns, the establishment of UPOU was influenced by the following specific issues:

1. *Availability of human resources and expertise.* The University of the Philippines has the largest concentration of highly trained academics in the various disciplines who have extensive experience in teaching. To a degree, this expertise has not really been fully harnessed by the university in its conventional instruction programs. It was the feeling at the time when distance education at UP was conceptualized that it was absolutely necessary to harness the said expertise in providing alternative ways of delivering education to Filipinos. In other words, offering degree programs in the distance education mode was seen as an alternative means of providing quality higher education to Filipinos who are unable to have access to conventional instruction in UP campuses.
2. *Access to quality higher education.* For a long time now, quite a large proportion of the Filipino studentry end up being out of school probably because they do not have the financial capacity to pursue higher education. Quality education in the Philippines is expensive. Even at the University of the Philippines, one has to pay at least P250 per unit. Translated into semestral cost, this totals about P4,500 tuition fee (assuming a standard load per semester of 18 units), and perhaps about P2,500 more for additional charges. On top of this, consider the cost of food and lodging in the city. Then, of course, you have the regular maintenance cost. For the entire semester, you are talking of a minimum of P25,000. This alone makes UP education rather inaccessible. In other schools in Metro-Manila one would need at least three or four times as much.
3. *Democratization of admissions at UP.*
Democratization does not mean mere lowering of tuition fees. Many feel that the UP College Admissions Test (UPCAT), for example, is a form of screening, which simply means that admission to the university is not really democratized. It has been pointed out that those who pass the cut-off point of the UPCAT are those coming from more endowed high schools, which are essentially high schools where only those with financial capability can afford to attend. In other words, those who can afford have better chances of having access to UP education because they are more academically prepared given their access to better educational opportunities due to their economic status.

Still, it should be pointed out that even if all deserving students pass the UPCAT, not all UPCAT passers are accommodated primarily because of lack of facilities on campus. There are not enough teachers, not enough classrooms, not enough student housing facilities. This is the second tier in the flaw in democratizing admissions to UP.

4. *Trends in the delivery of educational content.* In the last ten years there has been a worldwide exodus toward distance education among higher education institutions largely because of the trend in higher education as enunciated by Lockwood (1998), as well as due to the rapid developments in the ICT sector. For tertiary institutions in the Philippines, there is a limit to the capacity of these institutions to expand physically and be physically present in all parts of the country. Funding, particularly government funding, is not so unlimited as to make continuous and unlimited physical expansion possible at the time. Therefore, distance education, as an alternative delivery mode, is the direction toward which universities worldwide are moving.

Vision, Mission, Goals, and Values of the UPOU

In its strategic plan titled *Harnessing Technology to Improve Access to Quality Education*, the UPOU details its vision, mission, goals, and the values it goes by (Librero, 2008).

Vision. The U.P. Open University shall be at the forefront of the knowledge society as a leading institution of open learning and distance education.

Mission. Adhering to the philosophy of open learning and distance education, the U.P. Open University shall:

1. create dynamic, innovative, alternative learning environments, technologies, and opportunities that shall draw out the full potential of learners;
2. reach out to a wide spectrum of learners; and
3. contribute to the upgrading of the quality of education in the country.

Goals. The goals of the UPOU are, as follows:

1. To offer degree and non-degree programs, through open and distance learning. That are responsive to the needs of the learners and the society of which they are a part;
2. To develop a system of continuing education to sustain professional growth and promote lifelong learning;
3. To develop and adapt delivery systems appropriate to the distance learner;
4. To provide leadership in the development of open learning and distance education expertise in the country and in the appropriate use of information and communication technologies for education; and
5. To make instructional packages accessible to various publics through collaborative arrangements, institutional agreements and other appropriate mechanisms.

Values. The UPOU upholds the following values of excellence, equity, efficiency, and humanism:

1. *Excellence.* UPOU shall promote academic excellence as it adheres to UP's standards. The value of excellence, likewise, shall permeate all aspects of UPOU's entire operations and shall be manifested in the performance of its staff.

2. *Equity.* UPOU affirms its open access policy in terms of student admissions, but shall maintain the rigors of learning in producing quality graduates. The value of equity shall likewise be observed in the fair practice of recognition and reward for performance.
3. *Efficiency.* UPOU is committed to the efficient delivery of its services to its various clientele. The value of internal efficiency shall be translated to optimum use of resources in the operations of the university.
4. *Humanism.* UPOU shall uphold the primacy of human concerns over the use of technology as a means of achieving its goals. The value of humanism shall also be expressed in terms of the university's concern for the well-being of its personnel.

Defining the Stakeholders of UPOU

As explained elsewhere by Librero (2008), the stakeholders of the UPOU are the individuals and institutions who share the vision, mission and goals of the university. These are the students, the faculty, the employees, the policy makers, and its institutional partners.

The students, having invested their time, effort, discipline, resources, and commitment, shall in return expect to obtain a UP education through effective and efficient delivery systems.

The members of the faculty, having infused their expertise, dedication, and commitment to the UPOU, shall expect the leadership of the university to vigorously maintain the UP tradition of academic excellence, and to uphold the values of equity, excellence, efficiency, and humanism.

The employees, having committed their skills, resourcefulness, and service, shall expect the university to provide a pleasant work environment conducive to high productivity, and to offer opportunities for growth and development of the individual.

Policy makers, in the UP System and the government, having supported and provided funds and the policy framework for the UPOU's operations, shall expect the UPOU to endeavor to implement to the fullest its institutional mandate and in doing so, to adhere to the rules of governance.

Institutional partners, having appropriated their institutional reputation and prestige, shall expect the partnership to enhance mutual growth and development.

ODEL: UPOU Institutional Worldview

From 1993 to about 1996 all course modules were printed and distributed to students during enrolment periods. Also, there were monthly face-to-face tutorials in UPOU Learning Centers all over the country. These Learning Centers were based in other institutions of higher learning that were collaborating with the UPOU. Interactions between professors and students happened through emails. In 2002, tutorials were fully online. About three years later, enrolment was online. Then all of the activities associated with the delivery of courses were fully online.

From the beginning, there was the intention of going fully on line but this was greatly affected by the availability of hardware resources and access to the Internet on the UPOU end. Besides, we were aware of the fact that not all the UPOU students had complete access to the Internet. There were a lot of problems initially but these were largely resolved over the period from 2005 to 2007.

It was during this time, too, that the UPOU was feeling that it had arrived and began participating actively in the new learning environment, electronic learning.

By 2008, the UPOU began conceptualizing a new orientation, the complete implementation of mediated instruction primarily through the Internet, thereby starting efforts towards open distance e-learning as a major focus of the operations of the university.

The basic concept of open distance e-learning (ODEL) has been identified and defined by experts at the UPOU and in other open universities in the region as indicated in a compilation of concepts as well as critical discourse (Alfonso and Garcia, 2014). In fact, from a historical perspective, it was at the UPOU where ODeL was first conceptualized and defined as a distinct process in the distance education realm. The specification focused on the fact that it was not merely of the distance education genre, but more specifically of the focus on electronic learning, which could be in the realm of either distance or conventional classroom instruction.

To be sure, open distance education and learning were not a discovery or creation of the UPOU. In fact, other previous writers and experts have identified these concepts as important considerations in the development of distance education as alternative instructional delivery of knowledge. It should be pointed out, however, that what has been emphasized in the scientific literature is the focus on open and distance education (UNESCO, 2002), rather than open and distance e-learning, which is what the UPOU has been pursuing since just about the same year when it decided to put all services like tutorials online (Librero, 2008). It was the UPOU as an institution that first focused on the emphasis on electronic learning processes that combined with the concepts of open and distance learning, hence the importance placed on open distance e-learning or ODeL. What made the difference in the UPOU's conception was the focus on open and distance e-learning as a worldview. This is what Alfonso (2014) had to say in defining what UPOU's concept of ODeL was:

ODEL draws from the features and affordances provided by open learning, DE, and e-learning – access and equity, resource sharing, learner-centeredness, flexibility, active learning, interactivity, ubiquity, and connectivity. Some of these features – like access and equity – are more in tune with open learning. Others – like learner-centeredness, flexibility and active learning – are shared by the three domains. Ubiquity, interactivity, and connectivity are more of e-learning's contributions.

It was this worldview that got highlighted in the crafting of the law (R.A. No. 10650), otherwise known as the Open Distance Learning Act. In fact, all of the provisions under Section 12 of R.A. 10650 which reflect the issues and concerns associated with ODeL, have specifically been referred to as functions of the UPOU. It should be pointed out that the early efforts to pass a law governing open distance learning in the Philippines started as early as 2004. However, the goals of the expected law and the specific provisions changed over time and for reasons of specific developments in the field.

The specific provisions of R.A. 10650, particularly Section 12, specifies the role of the UPOU, as follows:

1. Provide leadership in the development of ODL in the country and in the appropriate use of information and communications technologies in support of quality in support tertiary education;
2. Provide best practices in ODL in the Philippines;

3. Share knowledge through informed research and other development activities related to ODL through its exemplar policies, programs, materials, learning management systems, guidelines and offerings;
4. Provide technical assistance to the CHED and the TESDA in matters relating to ODL particularly in the development of basis design and formulation of national policies, standards and guidelines for ODL programs and institutions in the country;
5. Design model curricular programs which shall serve as prototype programs upon which similar programs to be offered by other HEIs and post-secondary schools in the country shall be patterned after;
6. Develop and promote appropriate information and communications technology to facilitate quality ODL programs in the country;
7. Design quality learning materials and objects, both in print and multimedia formats, for higher education and post-secondary instruction in the country;
8. Make instructional materials for ODL programs accessible to the public through collaborative arrangements and other appropriate mechanisms;
9. Assist other interested educational institutions in developing their ODL programs, courses, and materials to specific learner groups or the public at large;
10. Design and implement a continuing program to develop high level expertise in the fields of ODL in the Philippines through quality higher education degree programs and technical-vocational programs through either or both ODL and face-to-face modes of instruction and training; and
11. Help capacitate ODL teachers and practitioners through capacity building and professionalization programs.

Epilogue

This is where we are today, 2015, and our current work is double that a couple of decades ago. Most likely it will double or perhaps triple a couple of decades into the future, but we cannot be certain what exactly we shall do then. Suffice it to say that we shall probably be grappling with much more sophisticated forms of e-learning and delivery systems.

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Call for Articles

We call on colleagues, such as academics, researchers, technology developers, and open distance e-learning experts to submit their articles for publication in the International Journal on Open Distance e-Learning. The IJODEL is a semestral journal, hence it comes out every June and December of the year.

The preferred articles are those reporting original research, articles based on critical analyses of e-learning undertakings, book reviews, evaluation studies, and original think pieces such as concept papers.

Please visit the IJODEL website and familiarize yourselves with the process of submitting your articles online.

Call for Article Proposals

Article proposals are those that still need to be developed and researched. They are just ideas. You may submit your proposals to the IJODEL for consideration. Send it to the Chief Editor. If your proposed article is found by the Board of Editors of IJODEL to be worth pursuing, we shall encourage you to proceed with your idea at your own expense. The commitment that IJODEL can make is to consider your article as priority article for publication provided it goes through the standard procedure for which articles go through at the IJODEL.

For both the articles and proposed articles, follow the templates for articles.

Template Qualitatively Oriented Articles

Title of Article

Author 1¹ and Author 2²

¹Position, Institutional Affiliation, Country, Email address

Abstract

Abstract in 150-250 words.

Keywords: no more than five (5) keywords

Introduction (Center Heading 1)

This section contains the historical background of the study, including specific reports and studies that provided direct support to the research problem. Some relevant part of the literature shall be included in the discussion of the research problem to establish more strongly the need to undertake the study.

Objectives of the Study (Center Heading 2)

This section contains both the research over-all goal and the specific objectives to be attained.

Relevant Studies or Review of Related Studies (Center Heading 3)

Review of studies that are highly related to the current study. After the relevant studies have been presented, a synthesis of these may be presented and the relationship of such synthesis must be related to the study under consideration.

Subheading may be determined as necessary. In these subheadings, specific observations may be noted and statistical tables presented as well as figures and models.

Discussions (Center Heading 4)

In this section shall be inserted full discussion of results and finding, discussed more deeply in relation to the related studies already reviewed. Subheads may be determined and included in the discussions.

Conclusions (Center Heading 5)

The conclusions of the study must reflect the objectives of the research.

Recommendations (Center Heading 6)

All recommendations must appropriately correspond to the conclusions, and therefore the objectives of the study.

References (Center Heading 7)

Follow the UPOU-FICS Style Guide if that is available or the APA Style Guide.

Template Quantitatively Oriented Articles

Title of Article

Author 1¹ and Author 2²

¹Position, Institutional Affiliation, Country, Email address

Abstract

Abstract in 150-250 words.

Keywords: No more than five (5) keywords.

Introduction (Center Heading 1)

This section contains a clear historical background of the study, showing why the research had to be undertaken. In this section, the author(s) shall have the opportunity to expound on what the research says about the research problem, and show clear support for the need to undertake the research, through appropriate research gap analysis.

Objectives (Center Heading 2)

This section provides a clear statement of the goals and objectives of the research.

Conceptual/Theoretical Framework (Center Heading 3)

The conceptual or theoretical framework would be expected for research studies that dealt with empirical procedures and methodologies. A framework of this nature would provide for clear interrelationships and direction of interactions of variables which the researcher expects to show by his/her data and data interpretations. It should be noted that variable interactions may be easier to understand if they were to be presented in illustrated model formats.

Methodology (Center Heading 4)

This section includes brief discussions of data collection procedures and analyses. Data must be presented in appropriate tables.

Results and Discussions (Center Heading 5)

Analytical discussions must present possible relationships of the results of the study and the findings from other studies specifically reviewed for this purpose. Post analysis data may be presented in both statistical tables and appropriate models and figures.

Include subheadings as are necessary.

Conclusions and Recommendations (Center Heading 6)

Conclusions must be according to the objectives of the study. Recommendations must reflect the objectives and conclusions of the study.

References

General format must follow the suggestions for authors, but generally must follow the APA Style for publications.

Style Guide for Full Paper Submission

The paper should be 15-25 pages long (including tables, figures, and references) and prepared preferably in Microsoft Word format. The author(s) should provide a title, the name(s) of the author(s), position(s), institutional affiliation(s), institutional address(es), email address(es) and key words (no more than five). You may make use of the template for preparing your paper: Journal Article Template (Qualitatively-Oriented); Journal Article Template (Quantitatively-Oriented). Detailed guidelines are as follows:

1. **Font type**

The whole text should be in Arial.

2. **Margins**

The paper should be A4 size (21 x 29.7 cm). All margins (top, bottom, left, and right) should be 1 inch.

3. **Line Spacing**

The whole text should be single-spaced.

4. **Title**

The title of the paper should be 14-point, bold, in capital and lower case letters, and centered.

5. **Author Information**

Use 12-point and centered for the author name(s). The Western naming convention, with given names preceding surnames, should be used.

The author name(s) should appear below the title, with one blank line after the title.

Use 10-point for author(s)' position(s), institutional affiliation(s), country, and email address(es).

The author(s)' position(s), institutional affiliation(s), institutional address(es), and email address(es) should appear below the author name(s), with one blank line after the name(s).

6. **Headings**

- Heading font (with the exception of the paper title and the abstract) should be 14-point Arial and in bold.
- Headings should be centered and in capital and lower case letters [i.e. nouns, verbs, and all other words (except articles, prepositions, and conjunctions) should be set with an initial capital].
- There should be two blank lines before each heading and one blank line after it.

7. **Subthemes**

- Subtheme(s) should be 14-point Arial, in bold capital and lower case letters, and flushed left.
- There should be one blank line before and after each subtheme.

8. Abstract

- The abstract heading should be 14-point Arial, bold, centered.
- The abstract should be in 150-250 words.
- The main text of the abstract should be 12-point Arial, italicized.
- Alignment of the main text of the abstract should be justified, no indent.

9. Key Words

- Include at most five keywords.
- Use 12-point Arial. The keywords should appear below the abstract, with one blank line after the abstract.

10. Main Text

- In general, paragraphs should be separated by a single space.
- All paragraphs must be in block format.
- Text font should be 14-point Arial, single-spacing. Italic type may be used to emphasize words in running text. Bold type and underlining should be avoided.
- The first line of each paragraph should not be indented.

11. Tables and Figures

- Tables and figures should be numbered and have captions which appear above them.
- Graphics and pictures should not exceed the given page margins.
- Captions should be 14-point centered.
- The tables and figures of the paper should follow the APA citation style.
- There should be no space between the caption and the table/figure.

12. Footnotes

- Footnotes may be used only sparingly. A superscript numeral to refer to a footnote should be used in the text either directly after the word to be discussed or – in relation to a phrase or a sentence – following the punctuation mark (comma, semicolon, or period)
- Footnotes should appear at the bottom of the page within the normal text area, with a line about 5 cm long immediately above them.
- Footnotes should be 10-point and aligned left.

13. References

- The author-date method in-text citation should be used. Following the APA format, the author's last name and the year of publication for the source should appear in the text.
- All references that are cited in the text must be given in the reference list. The references must be in APA format and arranged alphabetically at the end of the paper.

Sample:

Surname, A. A. (year). Article title. *Title of Journal*, volume number(issue number), inclusive page numbers.

Surname, A. A. (year). *Title of book*. Publisher location: Publisher Name.

Surname, A. A., Surname, B. B., & Surname, C. C. (2000). Title of article. *Title of periodical*, volume number(issue number). Retrieved from URL/web address.

Surname, A.A. (Year, Month). *Title of paper*. Paper presented at name of conference, city, country.

14. Length

The paper should be 3,000-7,000 words including tables, figures, and references.

Author Guide

The International Journal on Open and Distance e-Learning (IJODEL) welcomes original research articles, book reviews, theories, and best practices pertaining to ODeL worldwide. Articles should be 3,000-7,000 words including tables, figures, and references.

A publishable qualitatively-oriented paper should contain the following:

1. Abstract
2. Objectives of the Study
3. Relevant Studies or Review of Related Studies
4. Discussions
5. Conclusions
6. Recommendations
7. References

Go to: Qualitatively-Oriented Journal Article Template (page 76)

A publishable quantitatively-oriented paper should contain the following:

1. Abstract
2. Objectives
3. Conceptual/Theoretical Framework
4. Methodology
5. Results and Discussions
6. Conclusions and Recommendations
7. References

Go to: Quantitatively-Oriented Journal Article Template (page 78)

To submit an article, visit ijodel.com and follow the steps in the online submission system.

