Vision and Mission of the IJODeL

Vision

To be a leading international academic journal that publishes and disseminates new knowledge and information, and innovatives 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 pre-senting new ideas and innovative approaches to interpreting and implementing best practices in open distance e-learning as alternative delivery mechanism for quality education.

International Journal on Open and Distance eLearning

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The Promotion of ASEAN Regional Integration Through Open and Distance Higher Education

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Introduction

The ASEAN Economic Community requires a collective strategy on capacity development that equitably supports a highly competitive and integrated region. This regional strategy must include:

- providing labor-market responsive human development opportunities;
- freeing mobility of skilled workers and professionals across the region; and
- innovating and diversifying deliveries of skill development programs for the marginalized.

Technically, these three concerns may be addressed by Open, Distance and eLearning (ODeL) strategies. ODeL, by definition, is inclusive. ODeL programs transcend geographic boundaries and may be made available to learners from all ten countries in the ASEAN Region. Authentic open education is not bound by cumbersome academic traditions and may be nimbly designed to respond to the needs of the current labor market. Furthermore, regionally recognized ODeL certification and degrees will allow mobility among their holders to practice across the region. Additionally, ODeL provides innovative and alternative educational delivery systems for the marginalized such as online learning, blended learning, flipped classes and Massive Open Online Courses (MOOCs). By nature, these options should be industry driven and are thus responsive to labor-markets. Using online delivery systems for capacity development make ODeL innovative and ubiquitous.

Global trends point towards the mainstreaming of ODeL.

The Mainstreaming of ODeL

The ODeL Promise

ODeL is fast becoming the educational system of the future in the developed world. The Open Educational Resources (OER) initiative of the Massachusetts Institute of Technology and Massive Open Online Courses (MOOCs) of major Ivy League institutions demonstrate the promise. A meta-analysis conducted by the US Department of Education that synthesized the findings of over one thousand empirical studies found that online students performed better than those receiving face-to-face instruction because of: increased learning time; innovative curriculum and pedagogy; opportunities for collaboration and reflection; and learner control over interactions with the media (Means et al, 2010). In the developed world, quality of ODeL instruction, research and innovation is becoming less of a concern. In Britain, for instance, the UK Open University is ranked as the top third research university in the UK (Research Excellence Framework, 2014). The University of

Nottingham, one of the UK's most prestigious universities, now runs its own open campus, Open Nottingham. In the United States, the University of Michigan has established Open Michigan. As a matter of fact, most residential or mortar and brick institutions of higher learning now possess an eLearning alternative such as an online program, a blended program or flipped classrooms.

In the developing world, the promise of ODeL is founded on a different rationale. For the past fifty years, the international development assistance community – among these, non-government organizations, bilateral agencies, international donors and financial institutions, and UN agencies – have invested heavily on basic education in the Third World. There have been substantive gains in these investments. However, investments on higher education have not been as substantial. Among donors and international funding institutions, the priority assigned or premium attached to higher education is not as much as the priorities assigned or premiums attached to basic education, nonformal education (NFE) and technical vocational education and training (TVET) based on the argument that their potential to lift a country from a state of poverty to growth is much higher.

Hence, higher education infrastructure and capacities have not developed on a pace approximating basic education or TVET. In the meantime, the number of higher education students is estimated to jump more than four times from 94.4 million in 2000 to 414 million in 2030 (Lancrin, 2008; Calderon, 2012). In fact, many countries in the Third World who have made headway in achieving their MDG education targets are now facing absorptive capacity or uptake problems to their higher education system, marginalizing ever increasing numbers of qualified entrants. Calderon (2012) estimates that the East Asia and Pacific region will exceed enrolments of 200 million between 2033 and 2034. He predicts that four ASEAN nations – Indonesia, Malaysia, Philippines and Vietnam – will belong to the world's top 20 countries in terms of higher education enrollment by 2030.

Under such circumstances, the international education development sector is now looking towards online, open and flexible systems as viable alternatives to mortal and brick higher education institutions.

The Paris Message

In June 2015, 150 academics, education administrators, policy makers, practitioners, and education-sector stakeholders from more than 55 countries convened at the UNESCO Headquarters in Paris to address issues of access, equity and quality learning outcomes as key features of the new vision for the post-2015 education agenda. In a stark departure from the millennium development agenda that focused on basic education and its nonformal and technical vocational adjuncts, the participants highlighted the contribution of higher education to the global sustainable development agenda and in supporting the developing world achieve equitable, quality education and lifelong learning for all by 2030. As a group, they were convinced that higher education, drawing on experiences from online, open and flexible systems, needs to be transformed in order to deliver change in the scale and speed required.

At the end of the three-day high-level global forum, the participants issued The Paris Message, a global call to immediate action for governments, higher education institutions and intergovernmental organizations to, among other things:

- recognize the importance of online, open and flexible systems to meet the challenge of scale and quality in the provision of higher education and lifelong learning for the period 2015-2030;
- create effective policies and enable regulations for online, open and flexible systems at all levels based on equity principles;
- give priority to the use of new pedagogical approaches using digital affordances;
- reform the curriculum to ensure student engagement and success;
- be encouraged to create, develop, adapt and share high quality accessible digital resources, taking into account local needs and diversity of learners; and
- promote North-South-South collaboration in Online, Open, Flexible Higher Education.

The Paris Message informs the framework of this scoping study.

The Focus on Higher Education

The developments described above have offered two rationales for the focus on higher education.

Firstly, higher education needs to prepare for the large uptake of entrants brought about by successes in achieving MDG2 (the universalization of primary education) and scaled-up investments in basic education development across the developing world including eight out of the ten ASEAN countries.

Secondly, the Paris Message highlights the need for open, online, flexible systems for higher education.

A third rationale pertains to the nature of ODeL itself. Open education prescribes a constructivist approach to learning. It encourages independent or autonomous learning while putting much premium on metacognitive goals. This approach is more appropriate to higher education than to basic education. Similarly, distance education provides limited opportunities for technical and vocational practicum. Hence, ODeL may not be the mode of choice for TVET.

These limitations of ODeL have little to do with culture, economics or geography. Nevertheless, we have to shift from the global to the regional since this scoping study is being conducted within the context of ASEAN Integration.

The Education Dimension of ASEAN Integration

The term ASEAN Integration refers to the initiation, at the end of 2015, of the ASEAN Economic Community or AEC (ASEAN Secretariat, 2008). The AEC is one of three pillars of the ASEAN Community, the two others being, the ASEAN Socio-Cultural Community (ASCC) and the ASEAN Political-Security Community (APSC). Hence, ASEAN community building encompasses: enhancing competitiveness for economic growth and development through closer economic integration; nurturing human, cultural and natural resources for sustained development in a harmonious and people-centered ASEAN; and enhancing peace, stability, democracy and prosperity in the region through comprehensive political and security cooperation (Mamat, 2015).

Article 1, Paragraph 10 of the ASEAN Charter states that the Association intends to "develop human resources through closer cooperation in education and life-long learning, and in science and technology, for the empowerment of the peoples of ASEAN and for the strengthening of the ASEAN Community." Let us repeat the phrase for emphasis: Education and lifelong learning...for the strengthening of the ASEAN Community. This statement highlights the original intent of the Association to employ education in the service not only of ASEAN Economic Integration but of all three pillars of the ASEAN Community.

ASEAN higher education has three priorities: mobility; harmonization; and capacity building (Mamat, 2015; Sirat et al., 2014). Concrete measures have been taken to address these priorities. In terms of mobility, faculty and student exchanges have been initiated andbilateral and sub-regional arrangements have been established such as mutual recognition arrangements (MRAs) for engineering, architecture, accountancy, surveying, nursing, medicine and tourism. In terms of capacity building, intra-ASEAN, bilateral and multilateral programs have been initiated. In terms of harmonization, an ASEAN Qualifications Referencing Framework is currently being processed for implementation in 2018, with the following thrusts: harmonization; quality; and recognition (Mamat, 2015).

Another thrust that the ASEAN Secretariat has emphasized is ASEAN Connectivity. Among all the educational programs and platforms available in the ASEAN region, ODeL is uniquely suited to contribute to: physical connectivity; institutional connectivity; and people to people connectivity for obvious reasons.

Conceptual Framework

Conceptual Model

Given the above, our research framework should be guided by the current discourse on: the mainstreaming of ODeL; the focus on higher education; and the education dimension of ASEAN Integration. As these phenomena are still in the process of consummation, our framework should be anticipatory and our inquiry should take on the nature of futures research.

The elements of the framework should include the major concerns on ODeL embedded in the Paris Message, i.e. access, equity, and quality learning outcomes. Added to this list is a concern that may be characteristic to Asian countries, the acceptability of ODeL.

Propositions and Constituent Concepts

The framework's main propositions are:

1. ODeL is in the process of being mainstreamed into ASEAN higher education.

2. ODeL may lead to ASEAN Integration.

   However, ASEAN Economic Integration is merely one of three pillars of the ASEAN Community, the two others being the ASEAN Socio-Cultural Community (ASCC) and the ASEAN Political-Security Community (APSC). Thus, we consider Integration as a step

towards ASEAN Community Building. Moreover, ODeL contributes to Integration by way of ASEAN Higher Education, the features of which are: mobility; harmonization; and capacity development.

3. There are factors that influence the impact of ODeL on ASEAN Integration and subsequently to community building. These factors are acceptability, accessibility, equity, and quality of outcomes.

Under acceptability, we may classify; the demand for cross-border or trans-border ODeL among ASEAN nationals; the recognition of ODeL programs and credentials within and among ASEAN countries; and the existing initiatives towards an ASEAN Qualifications Referencing Framework.

Under accessibility, we categorize the availability of programs, the availability of telecommunications infrastructure, the absorptive capacities of programs, and the openness of educational resources.

Under equity, we include the openness of programs and the targeting of marginalized communities, sectors and nationalities.

Under quality of outcomes, we enumerate the quality of content, pedagogy, and assessment.

These are the constituent concepts of the proposed research framework on the study of ASEAN Integration through open and distance higher education, some of which will be covered rudimentarily in this scoping exercise to start off our continuing regional conversation.

Policy Implications

From the policy statement generated by the Delphi exercise, individual comments of the national research collaborators and resource persons of the Regional Policy Forum, and discussions on related initiatives found in the body of this report, we arrive at a list of discursive points, a set of policy recommendations that UNESCO, SEAMEO and other ASEAN education stakeholders may wish to pursue and elevate to a higher institutional level of discussion. These recommendations are classified as regional and local/national.

ODeL for ASEAN Community Building

The official status of distance education programs, in general, and ODeL programs for higher education, in particular, is regionally undefined. Six ASEAN countries - Indonesia, Malaysia, Myanmar, Philippines, Thailand, and VietNam - have fully-established nationally and internationally recognized open universities. However, there is no ASEAN-wide policy pronouncement on the mainstreaming of ODeL. An active ASEAN advocacy for employing ODeL for the regional integration of the workforce has not yet been tabled.

A regional policy originating from the ASEAN Education Ministers to develop ODeL programs for ASEAN Community Building should be formulated. This policy should include the provision of developing regional content without sacrificing local content. ASEANization themes should be infused into this content using the curriculum perspective approach. The policy should capitalize on the fact that ODeL with its regional reach is uniquely suited to promote the ASEAN motto: One Vision, One Identity, One Community.

ODeL Consortium Policy

The Delphi Panel recommended an ODeL Consortium policy covering ASEAN higher education. This was echoed during the deliberations of the Regional Policy Forum.

The Consortium policy should cover course content, cross enrollments, joint offerings, credit transfer, pedagogy and standards. It should address the diversity of language instruction since we do not have a common ASEAN language. For cross-enrollment, language can be an issue among universities which do not use English as a medium of instruction.

Cross Border Higher Education Policy

Over the last two decades, cross-border higher education through student, academic staff, and professional mobility has grown considerably. In parallel, new cross-border providers and delivery modes have appeared, such as profit-oriented providers, satellite campuses abroad, and distance education. These new forms of cross-border delivery of higher education provide new opportunities and increase the possibilities for the improvement of the skills of individual students and the quality of national higher education systems, provided that they are managed appropriately in order to benefit the human, social, and economic development of the receiving country. There should now be a regional policy that addresses mobility of professionals and harmonization of qualifications.

Harmonization of qualifications should follow the existing ASEAN Credit Transfer System (ACTS) to address any credit transfer issues. The process of harmonization of credentials will require integration at the regional level. Apart from the Revised Convention 2011, de facto accreditation and degree recognition mechanisms exist on an institution-to-institution basis across ASEAN.

As discussed in earlier chapters, a concept paper for an ASEAN Qualifications Reference Framework or AQRF was presented in October 2012. The design for an AQRF was formally endorsed by ASEAN Economic Ministers during the 46th AEM meeting in 25th August 2014 in Nay Pyi Taw, Myanmar. Subsequently, the ASEAN Education Ministers endorsed the AQRF on September 11, 2014 in Vientiane, Lao PDR. Although this year, an AQRF Board was established, it will not be until 2018 when actual qualifications referencing processes will be introduced regionally. Thus, 2018 will be the landmark year for the implementation of a regional quality assurance framework covering higher education as well. Hence, quality standards still differ from country to country within ASEAN.

However, there are isolated cases of formal regional accreditation such as the ASEAN Studies Master's Program of the Southeast Asian members of the Asian Association of Open Universities (AAOU). Furthermore, the UNESCO Regional Convention on the Recognition of Studies, Diplomas

and Degrees in Higher Education in Asia and the Pacific may provide a starting point and a solid foundation to devise ODeL-based higher education with regionally agreed recognition, accreditation, and a quality assurance framework within the ASEAN region.

Regional Access Policy

There should be a regional policy that addresses limitations to equal access. Within ASEAN exists international and intranational disparities in resources? In ODeL access is often equated with bandwidth and infrastructure. However, there may be other considerations such as open educational resources versus intellectual property rights.

A National Policy on ODL

The panel felt that national education systems should formulate national policies that specify the role of open and distance learning in developing human resources across sectors. National governments should be cognizant of the potential of ODL in fulfilling the fundamental right to learn and the need to incorporate it within the framework of human resource development.

Policy on Transnational Education

National policymakers should accommodate transnational course offerings and degree certifications. Under ASEAN integration, human resource development and capacity building are areas of cooperation. National policies on credit transfer, accreditation system, qualifications framework and quality assurance guidelines, among others, should be put in place.

However, national frameworks for quality assurance, accreditation and recognition of qualifications in many countries are not geared to addressing the quality of cross-border and private for- profit provision. The challenge for the current quality assurance and accreditation systems is to develop appropriate procedures and systems to cover foreign providers and programs in addition to national providers and programs in order to maximize the benefits and limit the potential downsides of the internationalization of higher education. At the same time, the increase in cross-border student, academic staff, researcher and professional mobility has put the issue of recognition of academic and professional qualifications high on the international agenda.

There is a need for additional national initiatives, strengthened international co-operation and networking, and more transparent information on quality assurance, accreditation and recognition of qualifications procedures and systems. These initiatives should have a global range and put emphasis on supporting the needs of developing countries in the process of establishing robust higher education systems. Given that some countries lack comprehensive frameworks for quality assurance, accreditation and the recognition of qualifications, capacity building will need to form an important part of the overall strengthening and co-ordination of national and international initiatives.

Policy Against Commercialization of ODL

The profit motive should not be the driver for ODL services. Some traditional universities are view-ing ODL, in general, andMOOCs, in particular, as an alternate source of revenue generation. Par-ticular attention should be paid to the objectives and intention of education resource providers in terms of whether these resources are an economic product solely for financial gain. Although

legitimate income generation should be accommodated, platforms should not encourage the commercialization of open and distance higher education. At the national level, policies on ODeL, if any, tend to promote national advantage instead of regional competitiveness. ODeL programs offered in one country may undermine the economic gain of another by presenting alternative educational opportunities to the latter's nationals and siphoning potential income. The policy should be able to filter out these transnational programs that serve commercialization purposes rather than integration purposes.

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Augmented Reality in Nursing Education: Addressing the Limitations of Developing a Learning Material for Nurses in the Philippines and Thailand

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Abstract

The application of Augmented Reality (AR) in nursing education is relatively new. When used as a learning tool, AR provides new digital media that result in teaching and learning enhancement. However, there seems to be a gap in the development and use of AR tools between the learners in the developed world and those who are in the developing world. Most, if not all, of the existing AR initiatives in nursing originated from economically and financially advanced countries. There is a limited number of researches and case studies done in the Association of Southeast Asian Nations (ASEAN) where a majority of the countries are developing. For this reason, this exploratory study aims to provide a proof of concept for budget constrained and technologically challenged implementers from developing countries such as the Philippines and Thailand. An appropriate AR tool was chosen among the reviewed authoring tools. Utilizing the selected tool, a learning material prototype on English nursing communication was developed to aid nurses in potentially improving their English competency. The prototype, a talking comic strip that consists of a clinical scenario, was well-received. A majority of the respondents agreed that the AR-enhanced material was better than the printed material alone and that it enhanced their learning experience. It was also found to be usable, receiving a system usability score of 68.5937, which is higher than the mean global score of 68.

Keywords: Augmented Reality, Nursing Education, English Communication, Open Educational Resources, System Usability Survey

Introduction

ASEAN Integration

The Association of Southeast Asian Nations (ASEAN) is composed of 10 countries, namely, Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. By the end of 2015, member-countries sought economic integration by establishing a common market through the ASEAN Economic Community. Key areas include human resources development, recognition of professional qualifications, and industry integration across the region (Long, 2014). This integration promotes free movement of goods, services and people of various backgrounds and professions. One profession, for which there is an arrangement, is on nursing services. The ASEAN Mutual Recognition Arrangement (MRA) on Nursing Services has been formed with the following objectives:

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- To facilitate mobility of nursing professionals within ASEAN;
- To exchange information and expertise on standards and qualifications;
- To promote adoption of best practices on professional nursing services; and
- To provide opportunities for capacity building and training of nurses.

The MRA allows nurses who meet certain qualifications to register and to apply for a license in any ASEAN country, subject to law and regulations of the host country. Thus, to strengthen the ASEAN MRA on Nursing Services, it is necessary for nurses to communicate in English, the official working language of ASEAN, and acquire competency (Aungsuroch & Gunawan, 2015).

Augmented Reality and Nursing Education

There have been several advances in technology at present, such as Augmented Reality (AR). AR is a technology that supplements the real world with virtual objects that appear to co-exist in the same space as the real world (Azuma et al., 2001). Virtual objects are computer-generated inputs that include audios, videos, graphics and GPS data. AR started way back in the 1960s, but it was only during the 1990s when AR's remarkable progress started. AR, considered a novelty in the literature (Zhu et al., 2014), can be applied to a wide range of application domains.

One domain for which AR can be used is nursing, specifically in nursing services and education. AR as a learning tool provides new digital media that can enhance teaching and learning (Bower et al., 2014), as it improves how a learner perceives of and interacts with the real world. Moreover, the information imparted by virtual objects helps him perform real world tasks (Azuma, 1997). It makes learning more interactive, engaging and convenient for everyone. When applied to nursing education, it results to a useful learning technique that may enhance the knowledge and clinical skills of nursing staff and students through realistic situations with computer-aided technology.

AR has been used in the nursing educational system of developed countries. However, applying and adopting AR in nursing practice seems to be challenging, especially for Filipino and Thai nurses. This may be attributed to the limited number of research and case studies done in the ASEAN where a majority of the countries are developing. Most of the existing AR initiatives were done in economically and financially advanced countries. Consequently, there exists a gap in the development and use of AR tools between the learners in the developed world and those who are in the developing world.

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Objectives of the Study

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AR in nursing education is a relatively new research area. It can be utilized to improve the English communication skills of nursing professionals in the ASEAN. This initial study or exploration aims to address the gap and to provide a proof of concept for future implementers in the region by accomplishing the following objectives:

1. To determine existing AR initiatives in nursing education and services.
2. To identify relevant AR development tools that could be considered by implementers with limited finances.
3. To develop an AR prototype that contains an open educational resource (OER) for English nursing communication.
4. To learn the perceptions of Filipino and Thai nursing students concerning the prototype by conducting a usability survey.

Methodology

Figure 1 shows the flowchart of methods and procedures followed in this study. The flowchart below was patterned after Teplechuk's diagram (2013).

Figure 1. Flowchart of Methods
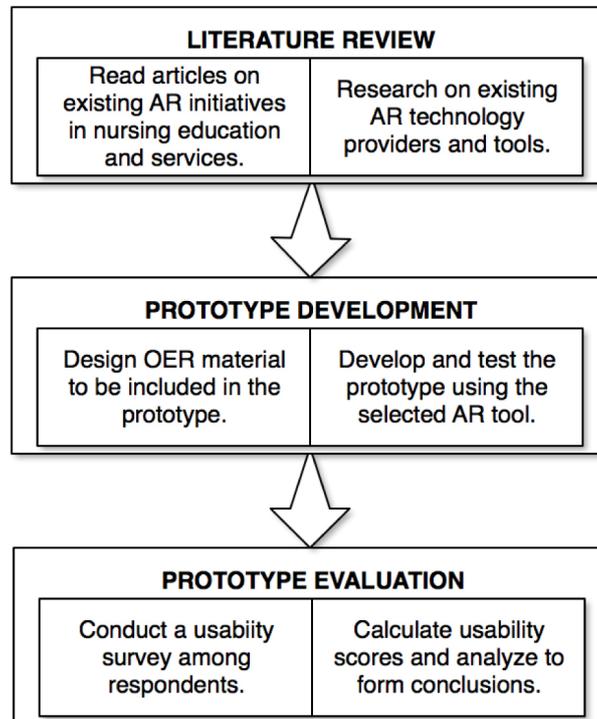
Literature Review

A general literature review was utilized to explore existing AR initiatives on nursing services and education, and AR technology providers. According to Grant & Booth (2009), a general literature review is a review of published materials that provide an examination of the recent or current literature. It is typically narrative and can cover a broad range of subjects at various levels of completeness and comprehensiveness. It may or may not include comprehensive searching and quality assessment.

Prototype Development

A prototype called the talking comic strip was developed. It contains an OER content for nursing communication in English. Using the prototype, whenever the user points his mobile device to the comic strip, its accompanying audio is automatically played. He can read the comic strip and hear its sound at the same time, and this enables him to learn the proper pronunciation of words and the intonation of statements. AR facilitates the integration of the physical entity (comic strip) and the digital entity (audio conversation). Listed below are the phases involved in developing the prototype.

1. A nursing professional wrote the script (Figure 2), a conversation between the nurse and

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the patient. The theme of the script is about providing basic care to patients.

Figure 2. Script Snippet

SITUATION 1: The nurse in the morning shift is assigned to a female patient in the Medical Ward. Reading the medical charts, the nurse found out that the patient was diagnosed with Congestive Heart Failure and Unstable Angina. The nurse approaches the patient to assess her Functional Health Patterns on Activity and Exercise, and Role and Relationships.

Nurse: *Good morning, Ms. Ellen. I'm Luisa, your nurse for this morning shift. How are you feeling today?*

Patient: *Good morning, Nurse Luisa! I am actually feeling dizzy from a whole day of coughing.*
(coughs hardly)

2. An artist designed and drew the comic strip based on the script, as shown in Figure 3.

Figure 3. Sample Comic Strip

3. Voice actors recorded the audio track to produce the audible form of the script conversation.

4. The selected AR tool integrated the audio and the comic strip, to make the latter talk back to the user. Figure 4 displays how the audio track was attached to its respective image using CraftAR.

Figure 4. AR Content Creation in CraftAR

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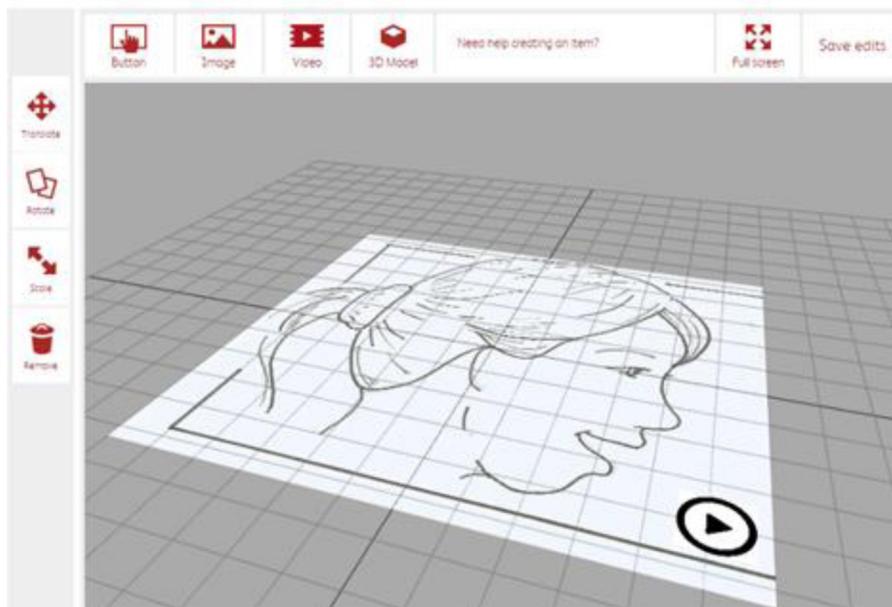
5. Once the prototype was configured and installed in the mobile device, the user may use it by pointing his device's camera to an image in the strip as illustrated in Figure 5.

Figure 5. The user pointing her mobile device to the comic strip

Prototype Evaluation

It is important to measure the perceptions of the users of a particular system, application or software, through the quality aspect of usability. ISO 9241-11 defines usability as the degree to which a system can be used by target users in a particular context of use to achieve specified goals. According to Brooke (1996), measures of usability include the following:

• Effectiveness - The ability of users to complete tasks using the system, and the quality of the output of those tasks.
• Efficiency - The level of resource or the number of steps consumed in   performing tasks.
• Satisfaction - The subjective reactions of the users in using the system.

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Users are said to have a good sense of which systems are usable or unusable. If a system is considered to be highly usable, users can achieve their tasks easily and efficiently. On the contrary, if a system is hard to use, people will not use it (Spencer, 2004). In this study, 17 respondents were asked to assess the prototype's usability by accomplishing a survey based on the System Usability Scale (SUS). Brooke's SUS, cited in over 1,300 articles and publications, provides a quick and reliable tool for measuring usability. It is effective in differentiating usable and unusable apps and systems. It is a 10-item questionnaire that the respondents can rate from 1 (strongly disagree) to 5 (strongly agree). Listed below are the items of the test.

Figure 6. System Usability Scale Questionnaire

	The System Usability Scale Standard Version	Strongly disagree 1 2 3 4 5 Strongly agree
1	I think that I would like to use this system.	○ ○ ○ ○ ○
2	I found the system unnecessarily complex.	○ ○ ○ ○ ○
3	I thought the system was easy to use.	○ ○ ○ ○ ○
4	I think that I would need the support of a technical person to be able to use this system.	○ ○ ○ ○ ○
5	I found the various functions in the system were well integrated.	○ ○ ○ ○ ○
6	I thought there was too much inconsistency in this system.	○ ○ ○ ○ ○
7	I would imagine that most people would learn to use this system very quickly.	○ ○ ○ ○ ○
8	I found the system very cumbersome to use.	○ ○ ○ ○ ○
9	I felt very confident using the system.	○ ○ ○ ○ ○
10	I needed to learn a lot of things before I could get going with this system.	○ ○ ○ ○ ○

To compute the usability score from each respondent, the following steps are applied.

1. For odd-numbered items: Subtract 1 from the respondent response.
2. For even-numbered items: Subtract the respondent response from 5.
3. Get the sum of the converted responses and multiply that total by 2.5.

Once the usability scores from each respondent are computed, their average is obtained. If the usability score is higher than the mean global score of 68, this means that the system or app being evaluated is relatively usable. Furthermore, another survey with the following items was also given. The respondents were asked to rate each item, from 1 (strongly agree) to 5 (strongly disagree).

1. "The AR-enhanced material is better than the printed material alone."
2. "AR enhances my learning experience."
3. "I will recommend it to training institutions."

Results and Discussions

Existing AR Initiatives

Computers have been adopted in some healthcare services. They are embedded in several nursing bedside instruments such as ventilators, electrocardiogram monitors, etc. Similar to AR, the

integration of digital information with live video was first introduced in healthcare service in an operating room to assist surgeons (Fuchs et al., 1998). Afterward, AR has been adopted in several healthcare activities. For example, AR provides crucial information on patients' status directly to their glasses (Hasvold, 2002), giving surgeons virtual x-ray vision which used relayed images from an endoscopic surgical camera through keyhole incisions, and revealing hidden vessels inside organs during operation via AR iPad app (Vaterlaus-Staby, 2015). Furthermore, AR has been applied and increasingly used in healthcare education since 2002. For some instances, AR was adopted in several subjects such as endotracheal intubation, clinical breast examination, laparoscopic surgery, and life support training (Zhu et al., 2014).

In nursing, AR has been used in nursing education activities earlier than in nursing services. An example is Evena's glasses, which is computer-powered with high-tech 3D light imaging system. It was used by nurses to visualize the blood flowing through the veins of patients and capture images of the veins on the skin layer (Hirschberg et al., 2014). Another is a tablet-based AR system used for training nursing staff in interacting with patients, to build up empathy and to promote caring approaches, while delivering technical skills (Bichlmele, 2014). In 2010, the School of Nursing and Midwifery and the Health Information Technology Lab at the University of Tasmania, Australia applied AR in patient health assessment to visualize organs and its functions underneath the skin (University of Tasmania, 2010). In 2013, Sheffield Hallam University also introduced AR in the nurse training and midwifery curriculum. They adopted this technology through iPads to learn real-life situation regarding patients' reactions and emotions (Pultarova, 2013). In Denmark, AR was also undertaken as a project aiming to create a realistic visualization of parts of the human body to enhance their learning outcomes (Rahn and Kjaergaard, 2014).

Selection of Relevant Technologies

In choosing the most appropriate tool/s used in this exploration, several cloud-based AR tools were first examined and compared. The selection was based on the following factors:

1. A free license is available. This is the primary consideration due to the limited budget of the researchers.
2. AR scenarios and content can be easily created and tested. Programmers and non-programmers alike should able to create any AR scene easily.
3. The AR tool is widely used. A tool that is widely used speaks of its credibility and reliability.

Based on the considerations as mentioned above, Wikitude, Vuforia and CraftAR were shortlisted. These tools are described below:

Wikitude, the first publicly available application that uses a location-based approach, was initially released in 2008 (Arth et al., 2015). Its features include image recognition and tracking, and geolocation technologies (Figueiredo et al., 2014). Touted as the world's leading augmented reality tool, it has received numerous awards including the Best AR Tool in 2012 (Marden, 2011). Wikitude offers free/trial and commercial licenses. The trial license, however, limits 1,000 calls to the cloud recognition service per month and the AR content created bears a watermark ("Wikitude Cloud Recognition", n.d.). Moreover, Wikitude provides a software development toolkit (SDK) for programmers and a drag-and-drop interface for non-programmers. Wikitude has more than 100,000 registered developers and is used for over 10,000 published AR-based apps ("Wikitude - The World's leading Augmented Reality SDK", n.d.).

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Vuforia uses computer vision to recognize and track planar images and simple 3D objects (Park & Park, 2014). It was formerly known as QCAR when Qualcomm released it in 2011 (Arth et al., 2015). In 2015, Qualcomm sold its business unit responsible for Vuforia to PTC. At present, Vuforia still provides a free, starter license that limits recognition of images to 1,000 scans per month (Baldwin, 2014). Creating a simple app in Vuforia requires a series of steps that include programming using the provided SDK. There are over 25,000 AR apps powered by Vuforia (Takahashi, 2016).

CraftAR has an SDK and a Web-based drag-and-drop interface as well. Released in 2014, CraftAR was intended to provide an easy and convenient way of creating AR content, especially for businesses and brands (Woods, 2014). It allows user interaction tracking and analysis. CraftAR offers free and commercial licenses. An AR content created using the free license can only be scanned 1,000 times per month ("CraftAR Service", n.d.). Since CraftAR is relatively recent, figures on the community of developers and the number of published apps are not yet available.

Table 1 summarizes the comparison of the three shortlisted tools. Among them, CraftAR was eventually selected for the implementation of the prototype. Firstly, the shortlisted AR tools all provide free licenses, though there are certain limitations. An example is that an image to be used for AR purposes can only be scanned 1,000 times per month. Another limitation that makes Wikitude the least preferred is that a watermark is automatically appended to the AR content, which can be distracting to the users.

Table 1. Comparison of Wikitude, Vuforia, and CraftAR

AR Tool	License Available	Creation of AR Content	Range of Use
Wikitude	Free/trial and commercial licenses	Through a drag-and-drop interface and an SDK	100,000+ developers, 10,000 published apps
Vuforia	Free and commercial licenses	Through an SDK	25,000+ published apps
CraftAR	Free and commercial licenses	Through a drag-and-drop interface and an SDK	No figures available yet

Secondly, an SDK is used by programmers to write a highly-customized AR content by coding. On the other hand, a drag-and-drop interface is beneficial to technologically challenged persons who do not possess any prior programming experience, and this allows them to create an AR content conveniently. Buttons, videos, and 3D models can easily be placed to create an AR environment. Wikitude and CraftAR provide both, while Vuforia only offers an SDK.

Thirdly, based on the recent number of published apps, Vuforia is the most widely used AR tool among the three. Though figures are not available for CraftAR, the company behind the said tool is trusted by several globally recognized brands, including Intel and Bosch.

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Results of the System Usability Survey

Based on the SUS survey given to 17 respondents, the prototype obtained an SUS score of 68.5937, which is slightly higher than the mean global score of 68. This implies that the AR app, to a small degree notwithstanding, is relatively usable. The histogram of SUS scores among the respondents is shown in Figure 7.

Figure 7. Histogram of SUS scores given by the respondent
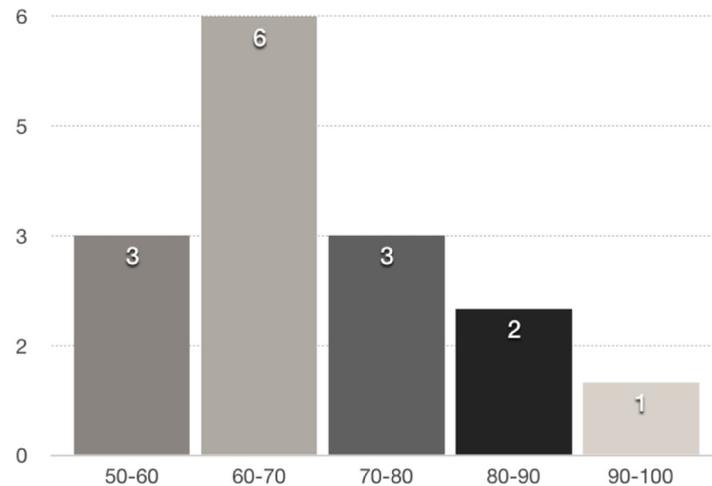
Results of the Additional Survey Items

The answers to the additional survey items were also collated. The first item obtained an average rating of 4.5294 and 14 out of 17 respondents agreed (those who chose a rating of 4 or 5) that the material enhanced by AR is better than the printed material as shown in Figure 8.

Figure 8. Summary of responses for the item on whether the AR-enhanced material is better than the printed material

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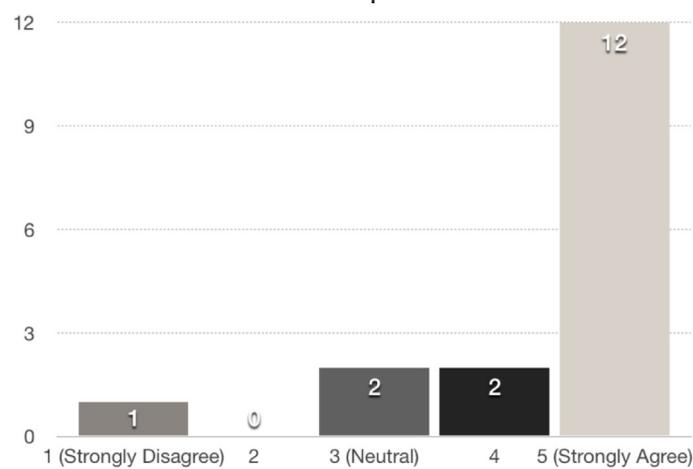
Figure 9. Summary of responses for the item on whether AR enhances learning experience
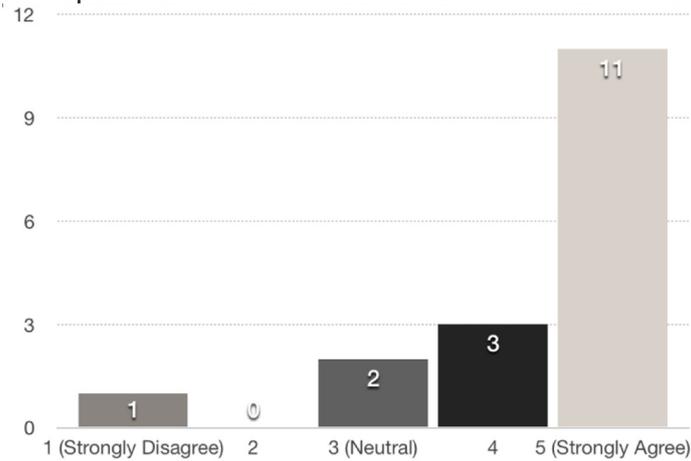
The second item acquired an average rating of 4.3529, with 14 out of 17 respondents agreeing that AR has enhanced their learning experience as shown in Figure 9.

Figure 10. Summary of responses for the item on recommending AR-enhanced materials to educational and training institutions
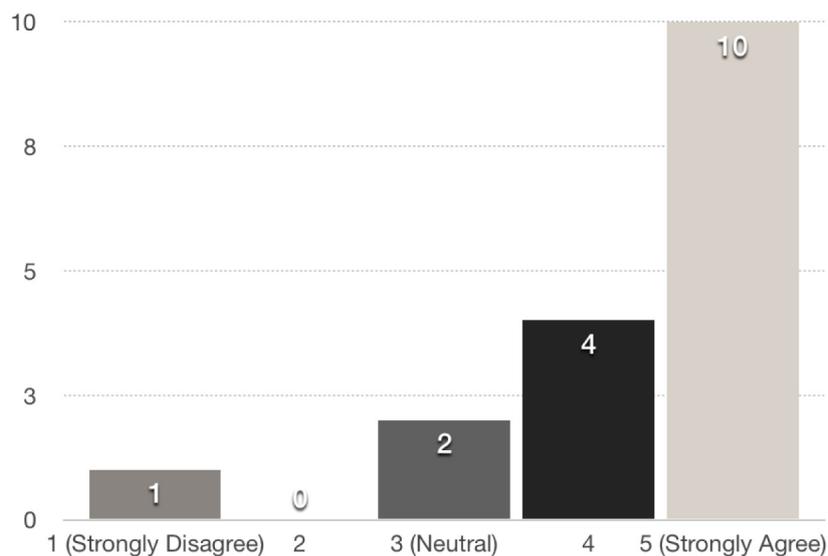
Finally, for the third item that has an average rating of 4.3529, 14 out of 17 respondents said that they would recommend the AR-enhanced materials to training institutions. This is illustrated by the graph in Figure 10.

Conclusion and Recommendation

This exploration has determined existing AR initiatives in nursing and these initiatives originated from developed countries. Albeit a relatively new and seemingly expensive technology, AR can be used by budget constrained and technologically challenged implementers from developing countries in the ASEAN such as the Philippines and Thailand. This is evidenced in the selection of an appropriate AR tool that is free and easy to use, and in the utilization of that tool in developing a learning material prototype on English nursing communication. Moreover, the prototype, a talking comic strip, has been well-received and proven to be usable for learning.

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AR is a recent technology that is still evolving as of this moment. In this regard, future studies shall include a fresh round of survey of newly released and updated AR tools that might better address the limitations faced by the implementers. Enhancement of the talking comic strip shall also be made to improve the prototype's usability further. Factors such as sustainability and accessibility shall be considered as well.

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Developing a Multimedia Courseware Using Cognitive Load Theory

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Abstract

This study describes the application of cognitive learning theory in the development of a multimedia courseware to enrich the clinical experience of nursing students in a distance learning environment. The objectives of the study include: (1) describing the nature and organization of tasks needed by students to demonstrate the performance of selected competencies in an adult health nursing specialty course; and (2) identifying strategies and approaches in addressing the intrinsic, extraneous and germane cognitive load in the development of the multimedia material.

Content experts, instructional designers, and multimedia specialists were involved in key informant interview, focus group discussion and roundtable discussion to develop the multimedia courseware guided by the cognitive load theory. Students were likewise consulted by soliciting their comments on the content, learning activities and design elements of the courseware.

Cognitive load theory was shown to help guide in the development of a multimedia courseware involving complex learning; such as in the clinical practicum of nursing students. By addressing the intrinsic, extraneous and germane cognitive load in developing a multimedia courseware, course developers help students: (1) manage tasks more effectively, (2) reduce the time spent on unnecessary steps in understanding concepts; and (3) focus on learning and demonstrating the competencies needed by the course. This framework forces the content experts, instructional designer, and multimedia specialist to work together to achieve a well-balanced and interesting course that will address directly the needs of the students and at the same time achieve the objectives of the course.

Keywords: *cognitive load theory, multimedia courseware, virtual clinical practicum, distance education, nursing*

Introduction

Distance education has gained popularity among nursing students since it offers the convenience of getting formal education without the need to leave jobs or be separated from families, provides opportunities for immediate application of learning to work, and allows potential savings in time and money. However, some see distance education as a break with the education's traditions of teaching; thus, faces certain challenges (Chaffin & Maddux, 2004). This is even more so in a discipline like nursing, where personal qualities and technical skills are considered learned mostly through face-to-face interaction.

Studies have shown that there are certain issues that need to be addressed in delivering nursing program through distance education. There is a need for students in distance education to be taught competencies on new learning methods, computer-assisted learning, and technology in education (Bonnel, Wambach, & Connors, 2005; Cooper, Taft, & Thelen, 2004). There is a need to provide for development of a professional technical language, which was seen lacking in nursing students in distance education program (Fredskild, 2004). There is also a need to provide continuous interaction to replace the kind of intellectual discourse usually happening in the classroom

(Sit, Chung, Chow, & Wong, 2005). Ledwell, Andrusyszyn, and Iwasiw (2006) emphasized the need for face-to-face options and availability of technical and information support at all times.

This study focuses on the challenges of putting together a multimedia courseware that will enrich the clinical experience of students in a distance-learning environment. It provides opportunities for nursing students to maximize the learning potentials during clinical practicum by empowering them through new learning methods, computer-assisted learning, and education technologies. This will minimize over-reliance to clinical preceptors to gain something from the clinical experience. In distance education settings, the availability of qualified clinical preceptors in local settings where the students are likewise located can be a challenge to the quality of learning experience. By providing students with self-instructional multimedia materials and engaging them in online communication technologies, it is hoped that the standards of clinical practicum experience will be achieved.

Putting together a distance education course is not a simple process, especially when complex learning is involved. Complex learning aims at the integration of knowledge, skills, and attitudes; the coordination of qualitatively different constituent skills; and the transfer of what is learned to daily life or work settings (Van Merriënboer, Kirschner, & Kester 2003). The clinical nursing practicum requires complex learning since this is the time for integrating and applying concepts learned. The use of authentic learning tasks based on real-life tasks becomes the driving force for such complex learning. This, in turn, leads to the challenge of optimizing cognitive load for such complex tasks. The application of cognitive load theory in putting together a multimedia courseware is the focus of this study.

Objectives

This study aims to describe the application of the cognitive load theory in the process of putting together a multimedia courseware that involves complex learning in a virtual clinical practicum setting.

The specific objectives of the study include:
1. Describe the nature and organization of the tasks needed by nursing students in the virtual clinical practicum;
2. Identify strategies for addressing the inherent complexity of the tasks involved in clinical nursing practice;
3. Determine ways of reducing the extraneous cognitive load in a multimedia environment;
4. Select instructional activities that will re-focus learners to the subject matter; and
5. Summarize how the manipulation of the three types of cognitive load can help improve the process of teaching and learning in a multimedia environment.

Conceptual/Theoretical Framework

Cognitive load theory is a major theory providing a framework for investigations into cognitive processes and instructional design (Paas, Renkl, & Sweller 2003). It originated in the 1980s, underwent substantial development in 1990s, and gained global recognition and application in the

2000s. It helps instructional designers control the learning environment, which in this case is the multimedia courseware.

There are three categories of cognitive load: (1) intrinsic, (2) extraneous, and (3) germane as first explained by Chandler and Sweller (1991). Intrinsic cognitive load is the inherent level of difficulty associated with the instructional material. Extraneous cognitive load is generated by the manner in which information is presented to learners and is under the control of instructional designers. Germane cognitive load refers to the processing, construction and automation of schemas or mental representation of a class of objects, events, or practices.

The intrinsic cognitive load cannot be altered by the instructor; however, it can be broken into individual subschemas and taught in isolation, to be later brought back together and described as a combined whole (Kirschner, Sweller, & Clark, 2006). The extraneous and germane can be manipulated by the instructional designer by reducing extraneous cognitive load by removing the unnecessary in the format of instructional material, and redirect learners' attention to cognitive processes that are directly relevant to the construction of schemas (Sweller, Van Merriënboer, & Paas, 1998).

Methodology

The conduct of this study was done in stages involving different methods and participants. These stages are: (1) convening content experts in key informant interviews and focus group discussion, (2) roundtable discussion between content experts, instructional designers and multimedia specialists, and (3) pilot review of multimedia material by content experts and students.

The key informant interview and focus group discussion among content experts (n=12) were on the issue of selecting tasks needed by nurses in the clinical practicum setting. Some guide questions were formulated, such as: (1) what are the tasks needed by nurses in the adult health nursing specialty courses for the clinical practicum based on the list of competencies identified for the course; (2) what are the nature of these tasks and how are they organized; (3) how can these tasks be simplified into more manageable tasks; and (4) what learning activities can be suggested in a multimedia environment that will help address the inherent complexity of the tasks.

The roundtable discussion among content experts (n=6), instructional designer (n=1) and multimedia specialist (n=1) revolved around the areas of finding out design elements that can help reduce the extraneous cognitive load of the multimedia courseware and redirect the learners attention to the process of acquiring the needed skills, knowledge and attitude, without removing the good-design elements of the courseware that helps motivate and engage learners.

The pilot review of the courseware involved students (n=10) who were asked about the following: (1) content, in terms of presentation, relevance, level of interest, clarity, and readability; (2) learning activities, in terms of relevance, appropriateness, and presentation of variety of tasks; and (3) design, in terms of organization, navigation, good mix of multimedia elements, and overall aesthetics.

Results and Discussions

The development of the multimedia courseware using Cognitive Load Theory could be summarized in four steps, namely: (1) selecting tasks needed by nurses in the clinical practicum, (2) simplifying complexity of tasks, (3) reducing extraneous cognitive load, and (4) refocusing learners to the subject matter.

Selecting Tasks Needed by Nurses in the Clinical Practicum

The interviews and discussions yielded the following competencies needed by nurses in the clinical practicum: (1) utilizing the nursing process in care of patients; (2) conducting complete and well-organized documentation; and (3) providing comprehensive care based on bioethical principles.

The tasks involved in demonstrating the above competencies include: (1) obtaining a complete, accurate, and appropriate health history, (2) performing systematic physical examination, (3) analyzing assessment findings to derive nursing diagnoses, (4) formulating a therapeutic nursing care plan, (5) implementing the nursing care plan, (6) evaluating the nursing care plan, (7) documenting care, and (8) applying bioethical principles in providing care.

During the design phase, learning tasks are ordered sequentially according to task difficulty and then learning scaffolds are added to support the learning process. The learning method consists of completing procedures that match authentic set of tasks performed by the learners in simulated environments in the courseware.

Simplifying Complexity of Tasks

Task complexity has been shown to increase as learners progress through the course. This multimedia courseware allows learners to navigate the increasingly complex learning environment by providing learning scaffolds and being supported by additional resources, tools, and templates.

The identified tasks showed varying degrees of complexities. Some strategies that were recommended to simplify them into manageable tasks were the following: (1) sequencing of the subtasks, (2) giving students scaffolding or guides and steps on how to perform each task, and (3) providing templates on how to accomplish them.

The strategies used in the courseware was supported by Van Merriënboer, Clark, & de Crock's study (as cited in Paas, Renkl, & Sweller, 2003) who suggested two forms of scaffolding, namely: (1) sequencing tasks from simple to complex, and (2) providing examples from partial to full problems.

In the same study (Van Merriënboer, Clark, & de Crock, 2002) the timing of essential information presented to students was identified as also critical from a cognitive load perspective. This underscores the value of giving students an overview of the tasks needed for them to be able to appreciate the process; and only giving them specific details at particular points when they are required.

Reducing Extraneous Cognitive Load

Discussions between the context experts, instructional designer, and multimedia specialist resulted to a courseware environment that was mindful of the needed learning activities for the achievement of the learning objectives.

The multimedia environment was kept similar to the real setting, from the structure of the hospital unit, arrangement of rooms, and look-and-feel of the nurses' station and patient rooms. Inter-activity elements in the rooms were kept to a minimum so as not to distract the learners from the intended activities in the virtual clinical environment.

The case studies were rendered in video formats that were "chunked" into short video clips corresponding to each identified tasks and sub-tasks to help students process the complexity of conducting a clinical practicum. The short videos were made realistic taken in the vernacular language but with English subtitles.

The learning activities identified for the multimedia environment include providing case studies featuring different patients with different health and social concerns.

Figure 1. The Courseware's Homepage

The Get Well Medical Center is a virtual hospital setting providing different health services and quality care to people.

Figure 2. The Nurses' Station

Figure 3. The Patient's Room

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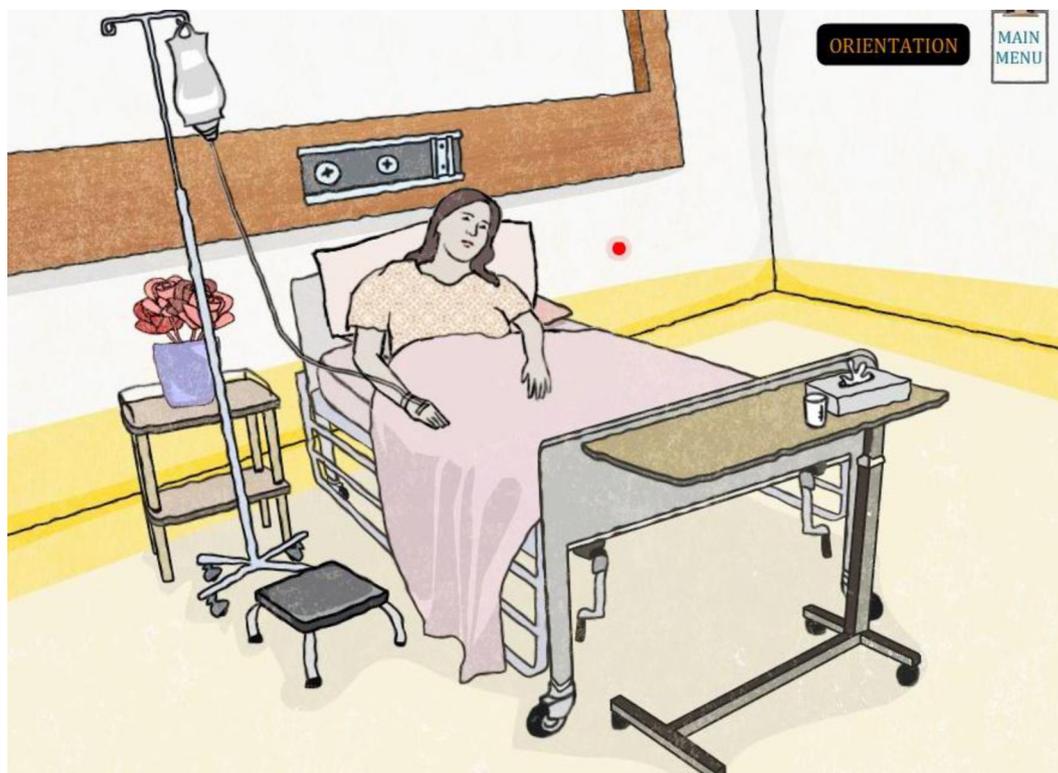
Figure 4. The Case Studies
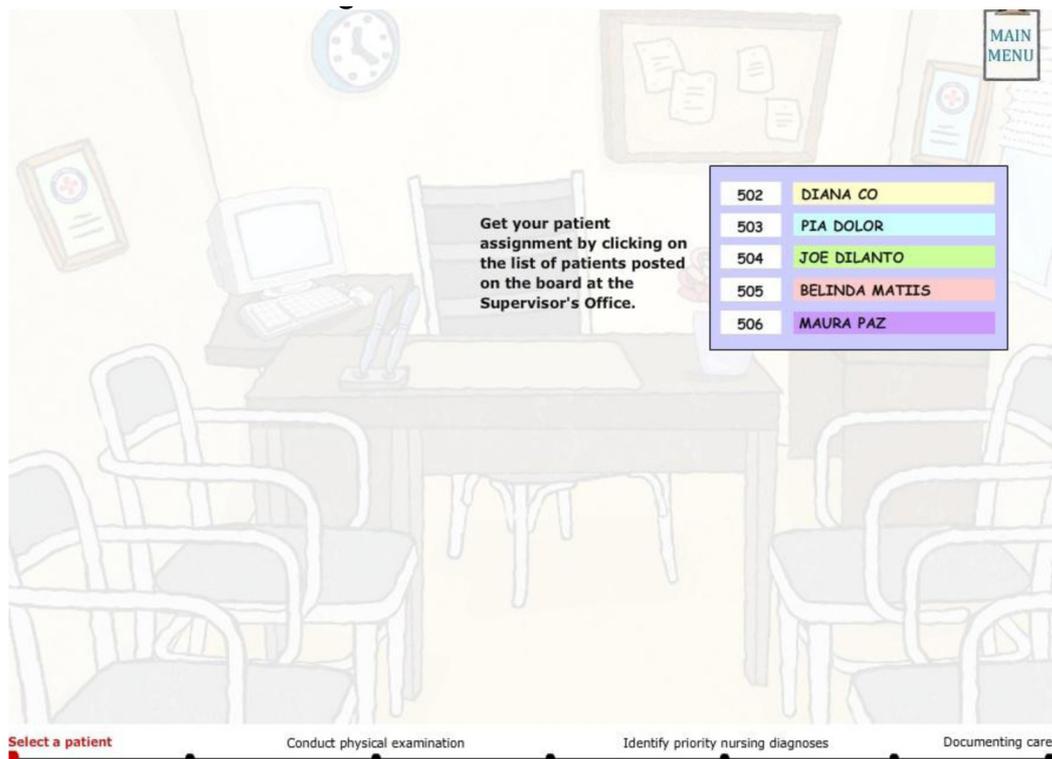
Refocusing Learners to the Subject Matter

Other learning activities that were included to increase the learners' interest and focus them on the achievement of the learning objectives include: short lessons, self-assessment questions, hyperlinks to glossaries and references, and forms/templates. The short lessons contain the key concepts essential to attain the learning objectives of the course. The self assessment questions help in formative evaluation and were available both in interactive and offline formats. Hyperlinks were also provided for easy access to glossaries, references, and forms/ templates needed in the course. These materials help learners focus on what are essential to achieve the learning outcomes and maximize the use of the multimedia courseware.

Integrating the Key Components of Instructional Design in Multimedia Courseware

Using the cognitive load theory to improve the design of the courseware requires the integration of four key elements in the instructional plan of the complex multimedia courseware. These four key components include: (1) learning tasks, (2) supportive information, (3) just-in-time information, and (4) part-task practice.

Learning tasks involve instructional methods primarily aimed at induction, that is, constructing an instructional plan through mindful abstraction which include design steps such as sequencing task practice and setting performance objectives.

Supportive information aids the learning and performance of non-recurrent aspects of learning tasks. It provides the bridge between learners' prior knowledge and the learning tasks. Instructional methods primarily aim at elaboration to add to what learners already know.

Just-in-time information is about providing learners with specific information that is needed at a particular time. For example, more information on specific lessons can be provided as optional materials.

Part-task practice includes practice items that are provided to learners in order to promote rule automation for selected recurrent aspects of the whole complex skill. Instructional methods primarily aim at rule automation, including compilation and subsequent strengthening to reach a very high level of automatically.

Pilot Review of the Courseware

The initial review of the courseware showed positive responses to the courseware in terms of content, learning activities, and design. Students rated the courseware as very good in terms of presentation, relevance, level of interest generated, clarity, readability, appropriateness, and good mix of multimedia elements and design. There were some comments on how to improve navigation of the course. Some students also asked for a basic tutorial guide on the features of the courseware as well as a study guide in print form.

Conclusions and Recommendations

Cognitive load theory has been shown to help as a guide in the development of a multimedia courseware involving complex learning such as in the clinical practicum of nursing students. Complex learning, which is needed in clinical practicum, whether real or virtual, forces students to deal with a learning environment that requires understanding an enormous number of interacting knowledge structures and constituent skills to be able to perform a task.

By addressing the intrinsic, extraneous, and germane cognitive load in developing a multimedia courseware, course developers help students: (1) manage tasks more effectively, (2) reduce the time spent on unnecessary steps in understanding concepts; and (3) focus on learning and demonstrating the competencies needed by the course.

The use of cognitive load theory in the process of developing the multimedia courseware forced the different stakeholders: content experts, instructional designers, and multimedia specialist to work together. The synergy in the interaction between them created a more enriched product because the issues on cognitive loading were discussed from different perspectives. In future studies, students may also be included as part of the development process in the early stage of conceptualization. Future studies should also focus on measuring the effectiveness of this multimedia courseware in terms of achieving the course goals and evaluating student performance.

Acknowledgements

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Use of Tracer Studies to Enhance the UPOU Environment and Natural Resources Management Graduate Program

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Abstract

Distance education has evolved and improved since the advent of the Internet. Open and distance e-learning (ODeL) for higher education has allowed ease of access to higher institutions of learning for professionals and adult learners. The University of the Philippines Open University (UPOU) has been offering the Diploma and Master of Environment and Natural Resources Management (MENRM) since 1999 through open and distance learning. The current program now offers a ladderized program with two-exits: a Diploma and a Master's degree. This paper presents the results of an analysis of the profile of MENRM applicants and a tracer study on graduates about their motivations for choosing to pursue graduate studies at UPOU. It also explored how having earned a postgraduate degree has affected their current jobs. The admission information showed that more than 90% of admission applicants were employees of private institutions and government offices occupying mid-level and senior management positions mostly based in the Philippines. The study has shown that their work schedule was an important consideration in pursuing a MENRM graduate program. The tracer study of 29 MENRM graduates also showed that the increase in their work responsibility and compensation can be attributed to their successful completion of the program. Moreover, it has contributed to their personal and professional development, particularly in their increased capacity for project and people management and policy making, as well as improved skills in research, technical, and critical thinking. However, the enrichment and development of communication skills as a required 21st century skill of MENRM graduates need to be better addressed in the program.

Keywords: Capacity-building, open and distance learning, environment and natural resources management, Philippines

Introduction

The University of the Philippines Open University (UPOU) is a regional champion of open and distance learning, leading the use of web-based technologies and other innovations for teaching and learning. The UPOU has offered the Diploma and Master of Environment and Natural Resources Management (MENRM) since August 1998, and eventual admission of graduate students in the second semester of school year 1999-2000. Since then, it has admitted an average of 60 students per semester and awarded 247 Diploma (DENRM) and 130 Master's degrees to mostly Filipino students based in the Philippines and overseas. The program underwent revision in 2010 and has allowed for two exits: a Diploma and Master's degree following a ladderized system of admission. For students intending to exit after completing 24 units of coursework, a diploma is awarded. Continuing students are awarded a Master's degree after finishing 27 units of coursework, 6 units of research-related courses and a cap requirement of a special problem (3 units) after passing a comprehensive examination. The admissions requirement of the program follows the "open" education philosophy while espousing the honor and excellence tradition of the University of the Philippines. The minimum requirement for regular admission is a baccalaureate degree in any field with a passing General Weighted Average of 3.0 or better. These post-baccalaureate degrees were designed to equip graduates with knowledge about the environment and its management,

develop critical thinking and technical skills, design management plans for implementation, and contribute to policy changes.

Tracer studies are conducted to follow-up on what has happened in the lives of individuals after an event has taken place. It derives its name from trace which means to find or locate (International Labour Organization, 2011). Tracer studies and other impact assessments have the same main objective which is "to systematically analyse the lasting or significant changes - positive or negative, intended or not - in people's lives brought about by a given action or series of actions" (Roche in Osei & Dontwi, 2014).

In educational institutions, they are used to acquire data which may be useful for the development of the university (Schomburg, 2010). Tracer studies are usually used interchangeably with follow-up or graduate alumni surveys (Osei & Dontwi, 2014). However, according to Lamoure (1995), these terms are not exactly the same. Their main difference lies in the period of data collection: Follow-up studies are done while the students are still studying while tracer studies are conducted after the students have graduated. Lamoure (1995) added, however, that both can produce similar types of data. Through tracer studies, educational institutions can gain information about their graduates' employment and career, character of work and related competencies, and experiences (Osei & Dontwi, 2014). Tracer studies in the educational setting also aim to provide the following: a. gain feedback on study programs (Egesah & Wahome, 2013) or to determine how the students perceive the curriculum, teaching and assessment (Bahroom, Latif, and Awang 2014); b. assess the quality of services delivered by their respective schools (Schomburg, 2003); c. determine the performance of the institution based on the performance of the graduates; and d. determine how their education played a role in their career promotions, decisions to pursue higher studies and in gaining entry to schools which offer post graduate programs (Bahroom, Latif, and Awang 2014).

Tracer studies have also been conducted in institutions which offer educational services in distance mode although they are considerably few (Osei & Dontwi, 2014). This will help ODeL institutions monitor the effectiveness and relevance of courses delivered through ODeL and how it can improve the student's success in a career after graduation (Millington, n.d.).

Objectives

This study aimed to assess through tracer studies how the MENRM graduate program delivered through open and distance e-learning (ODeL) has contributed to capacity-building in the field of environmental and natural resources management.

Materials and Methods

Data was gathered from MENRM admission data and a tracer study of MENRM graduates from school years 2010-2014. Professional backgrounds of 534 MENRM applicants were examined by looking at employment status, employment sector, and location/concentration indicated in their student profiles. Aside from this, submitted essays – a requirement for admission to the program – were also assessed to determine their reasons for applying, as well as their future plans. Finally, a tracer study was conducted online (through Google docs) to determine the views of the graduates on how they benefitted from the MENRM program, and to what extent the program has

contributed to their personal and professional development. A total of 29 MENRM graduates responded to the online tracer study.

Results and Discussion

The results of this study are presented in two parts. The first part presents the MENRM applicants' profiles using information submitted by the applicant for admission to the program. Meanwhile, the second part discusses the results of the online tracer study conducted among MENRM graduates.

A. MENRM Applicants Profile

Employment

Out of 534 applications received, 91% of applicants were employed by government and private institutions, 3% were self-employed, and the remaining 6% were unemployed (Figure 1). As expected, majority of adult learners pursuing graduate studies under ODeL are employed.

Figure 1. Employment profile of MENRM graduate program applicants (n = 534), school years 2010-11 to 2014-15.
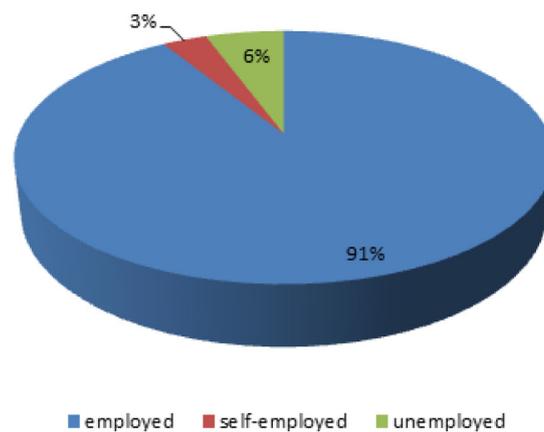
Work/Sectoral Group

Almost half of all MENRM program applicants were employed by private institutions (Figure 2). This was followed by government employees (34%), and overseas workers (12%). The remaining applicants belonged to non-government organizations (4%), foreign organizations (1%), or religious orders (<1%).

Figure 2. Employment sectoral group profile of MENRM graduate program applicants (n=504), school years 2010-11 to 2014-15.
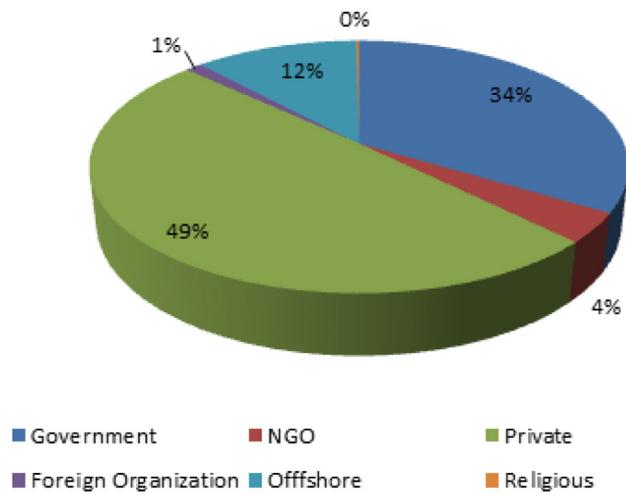
Location

Majority of MENRM applicants (88%) were based in the Philippines, while the rest were living overseas (Figure 3). Of the 470 applicants located in the Philippines, 40% were within and around Metro Manila, followed by South Luzon area (14%), the Mindanao regions 9-12, CARAGA and ARMM (10.29%), and the Visayas regions 6-8 (10.11%) (Figure 4).

Figure 3. Geographic location of MENRM applicants (n=534), school years 2010-11 to 2014-15.

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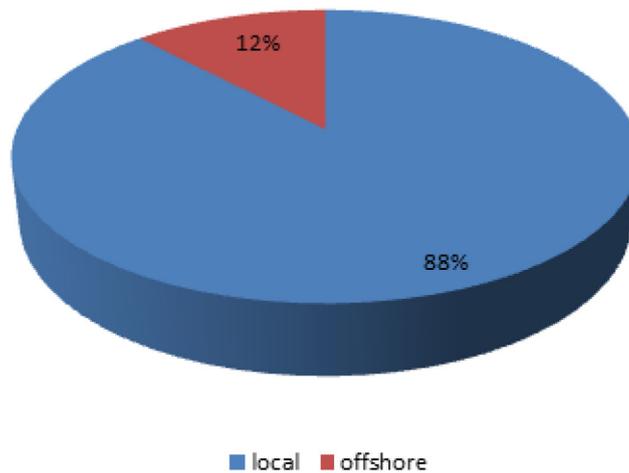
Figure 4. Regional Location of MENRM applicants (n=534), school years 2010-11 to 2014-15.
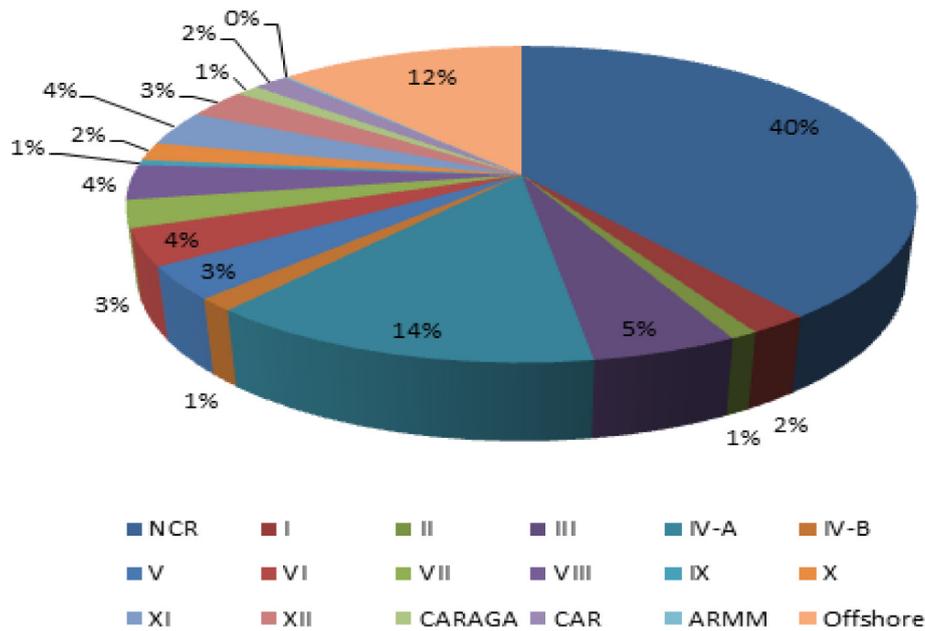
Based on the application essays of 50 MENRM program applicants (9 applicants had no essays on record), the most common reasons for applying to the MENRM program via ODeL were: 1) to gain/enhance knowledge and skills; 2) flexibility (in terms of time, remote access); 3) to transfer acquired knowledge and skills; and 4) MENRM program is related to their current work.

Figure 5. MENRM admission essay stating reason for application (n=534),
school years 2010-11 to 2014-15.
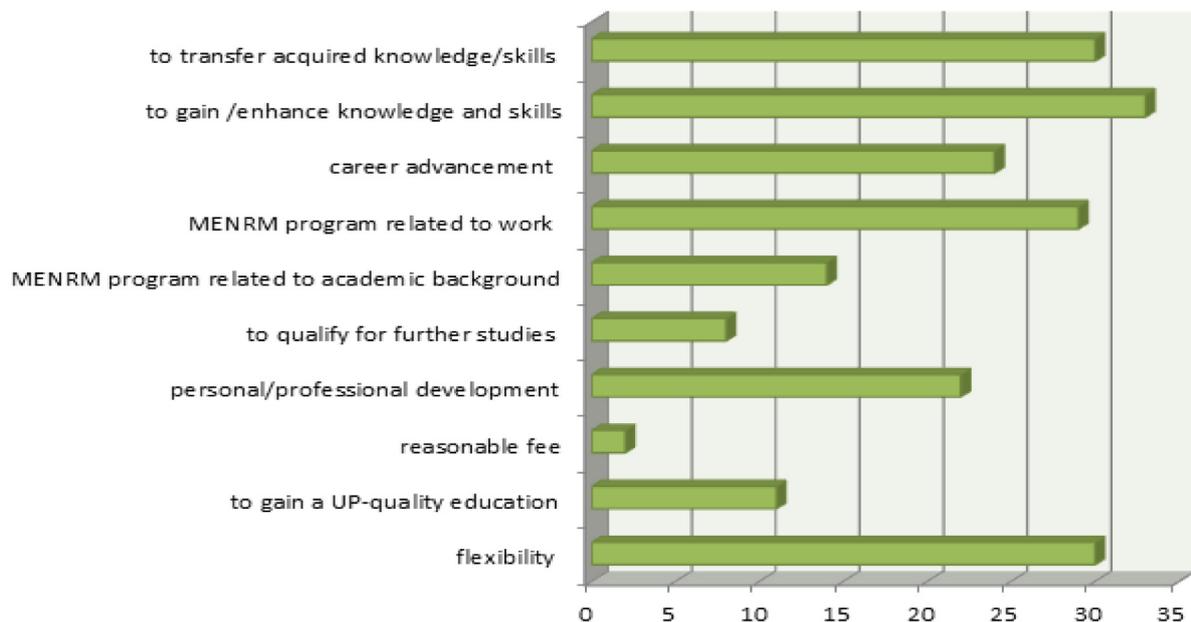
The "knowledge and skills" cited by respondents referred to those on environmental/resource conservation, protection, and management, which they also sought to transfer through advocacy, teaching, capacity-building of local communities, and provision of technical assistance. Flexibility referred to a balance of school, work and family in as much as ODeL allows for all three to work in harmony. Time for studying becomes more flexible since "virtual classrooms" for graduate courses are available 24/7. ODeL is also more flexible as it allows for independent learning. Other reasons for pursuing a MENRM graduate degree were related to career change, advancement or promotion, better employment opportunities and professional development.

B. MENRM Graduates: A Tracer Study

MENRM graduate profile

Fifty-eight percent of the respondents belonged to ages 30-39, while the next biggest group (24%) were applicants between 40-49 years old (Figure 6a). Almost 60% were male, and 40% were females (Figure 6b). In terms of their civil status, 69% were married, 28% were single, while one respondent was separated/divorced (Figure 6c).

Figure 6. a. Age, b. Sex and c. Civil Status of MENRM graduates (n = 29) from school years 2010-11 to 2014-15.

a. Age

20-29	3	10.3%
30-39	17	58.6%
40-49	7	24.1%
50-59	2	6.9%
60 and above	0	0%

b. Gender

Female	12	41.4%
Male	17	58.6%

c. Civil Status

Single	8	27.6%
Married	20	69%
Widow/widower	0	0%
Separated/Divorced	1	3.4%
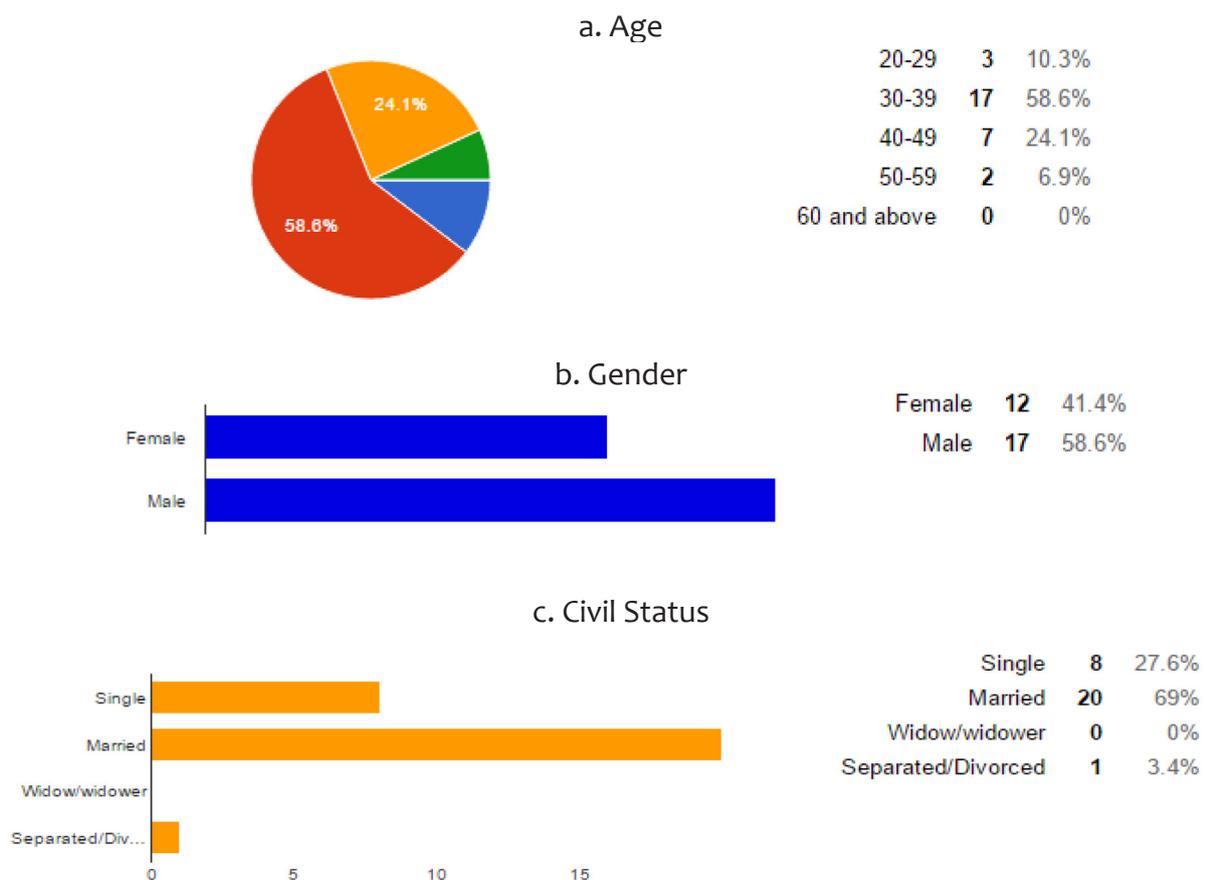
Employment and career

Ninety-six percent of the respondents were employed before they started their post-graduate degree (Figure 7a). However, 52% of the respondents experienced a change in their jobs while pursuing the degree (Figure 7b). When asked about the nature of their jobs, 38% said they were into research, 35% were self-employed or doing managerial work, 28% were teaching, 25% were doing development work, while another 28% were engaged in extension and communication (Figure 7c).

Figure 7. Employment and career related information of MENRM graduates (n = 29) from school years 2010-11 to 2014-15 a. Employment before the MENRM program, b. Change in jobs while in the program, c. Job classification while doing the program (multiple answers)

a. Employment before the MENRM program

Yes	28	96.6%
No	1	3.4%

b. Current employment is the same as during the time of admission to MENRM

Yes	14	48.3%
No	15	51.7%

c. Nature of current job

Research	11	37.9%
Teaching	8	27.6%
Extension	4	13.8%
Development work	7	24.1%
Communication	4	13.8%
Other	10	34.5%
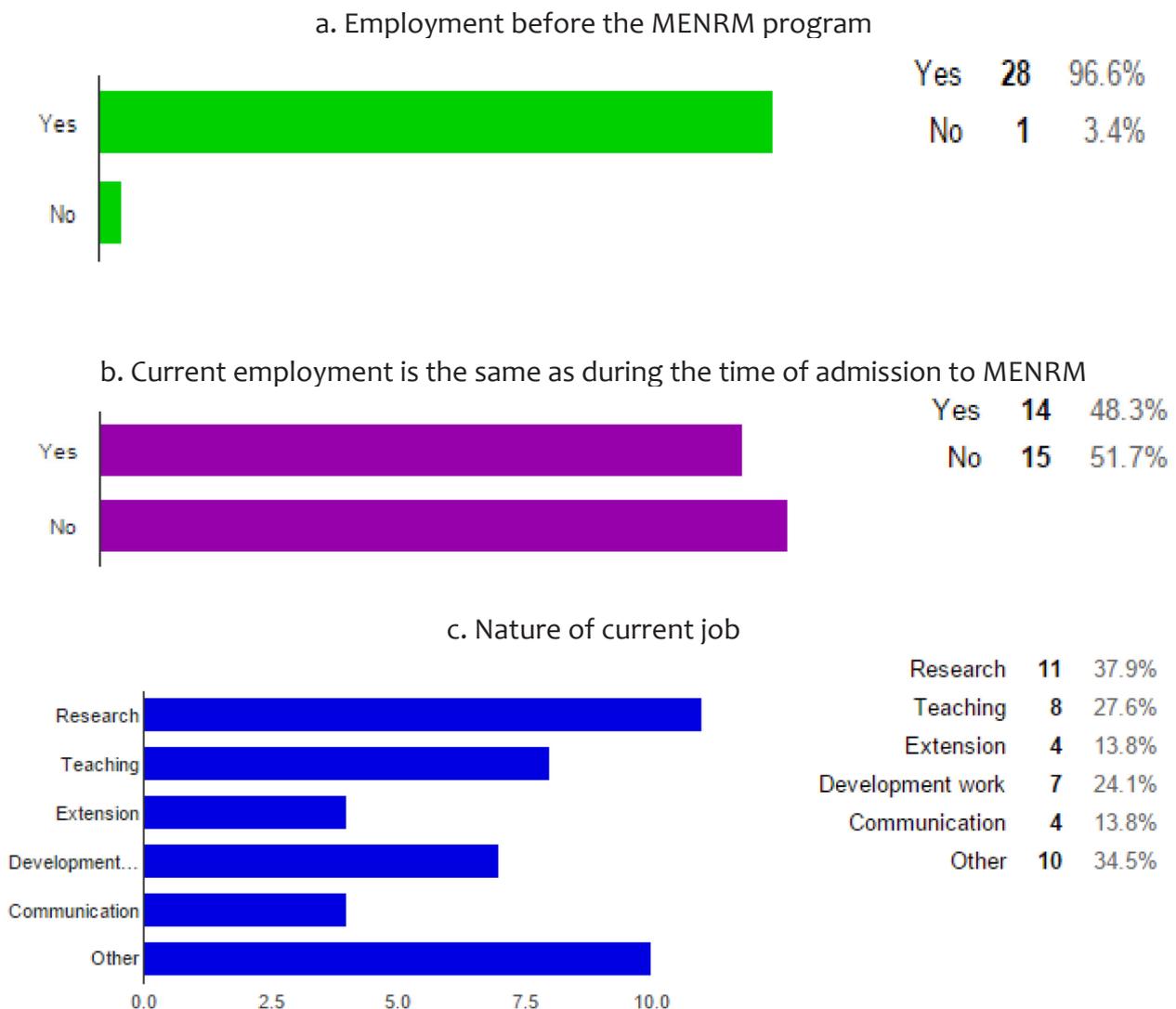
Changes experienced after earning MENRM degree

As shown in Figure 8a, majority of the respondents belonged to middle management and supervisory positions, or were technical staff. Only 7% occupied top management ranks. However, during the course of their program, 62% of the respondents indicated that they have since changed ranks (Figure 8b), while 38% said their ranks have not changed. In relation to this, 41% are currently occupying higher positions, while 59% said their positions are still the same (Figure 8c).

Figure 8. Current rank of MENRM graduate respondents (n=29) a. Current position (multiple answers), b. Change in the position since enrolling in the program c. Promotion to a higher position.

a. Current Position

Top Management	2	6.9%
Middle Management	12	41.4%
Supervisory	7	24.1%
Technical Staff	11	37.9%
Administrative Staff	0	0%

b. Change in the position since enrolling in the program

Yes	11	37.9%
No	18	62.1%

c. Promotion to a higher position

Yes	12	41.4%
No	17	58.6%
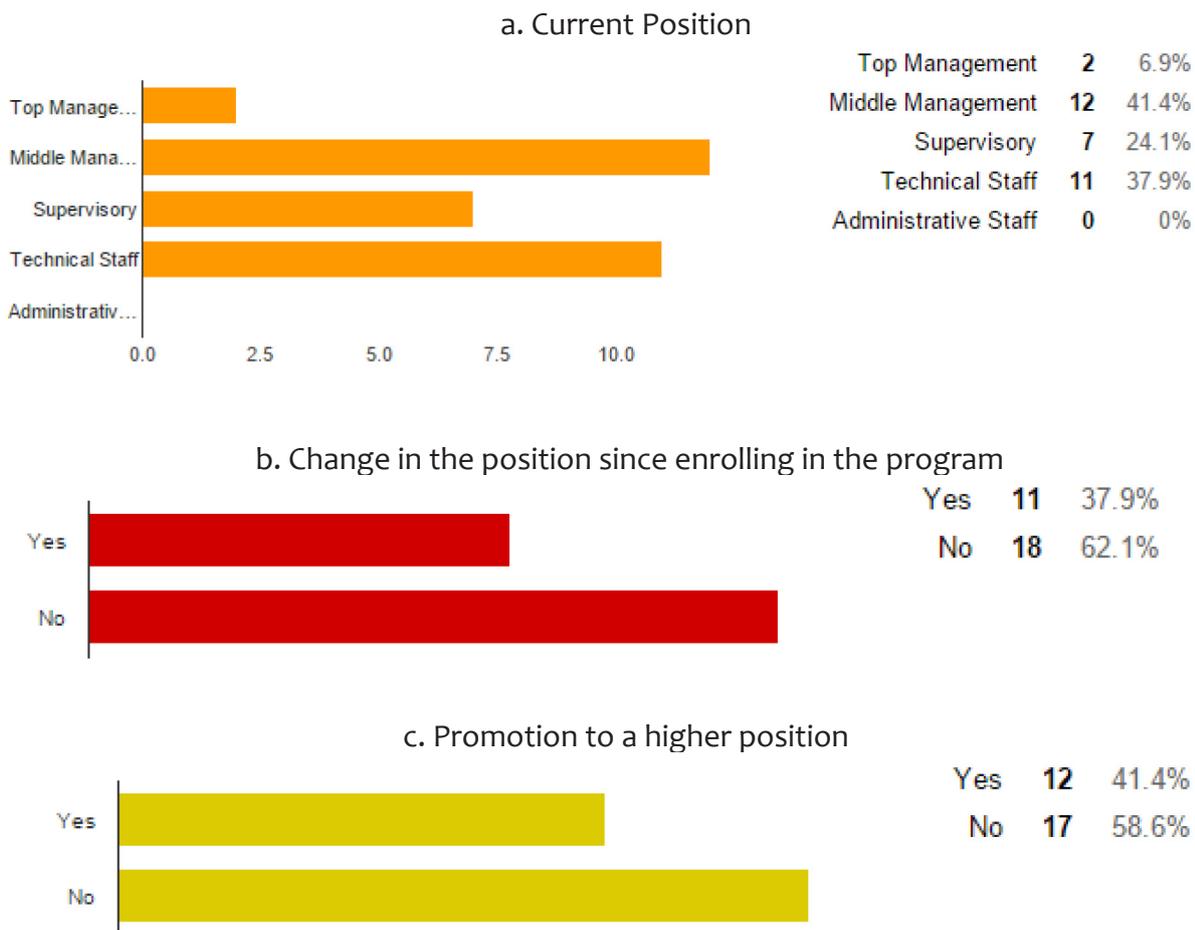
Reasons for pursuing graduate studies

When asked for the reasons why they considered open and distance learning over residential classes, 96% of the respondents said their work schedule was an important factor (Figure 9a). Meanwhile, 34% cited personal or family schedules as main reasons.

The graduates were also asked what motivated them to pursue graduate work. Figure 9b shows that 96% said it was for professional advancement, 65% desired to pursue PhD studies or research and extension work, 55% wanted to do original research, while 31% were eyeing promotion and higher pay.

Figure 9. Responses of MENRM graduate respondents (n=29). Reasons for open and distance learning a. Work Schedule and b. Motivation (multiple answers)

a. Work Schedule

work-related/work schedule	28	96.6%
personal/family schedule	10	34.5%
Other	0	0%

b. Motivation

Professional advancement	28	96.6%
Promotion and higher pay	9	31%
Desire to pursue PhD studies in the future	19	65.5%
Desire to develop ideas and do original research	16	55.2%
Desire to contribute to advancement of science through research/extension	19	65.5%
Other	2	6.9%
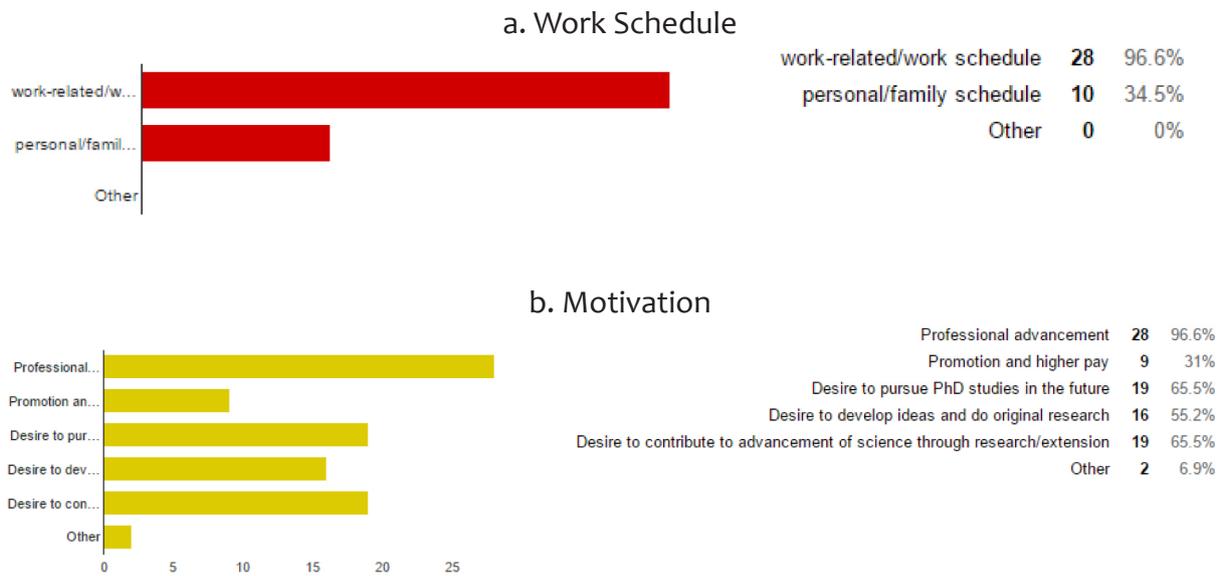
Advantages of a MENRM graduate degree

As a graduate program, the MENRM curriculum is expected to enhance the academic knowledge, capacity for critical thinking, and research skills of its students, while independent learning and communication skills are developed through the ODeL approach. However, it is likewise important to ensure that MENRM students are able to communicate more effectively as a result of their postgraduate studies.

Respondents were asked about how the MENRM post-graduate degree has affected their personal and professional lives. Majority of the MENRM graduates who participated in the tracer study felt that the program contributed "very much" toward enhancing academic knowledge (79%), capacity for critical thinking (65%), research skills (62%), learning efficiency (62%), and confidence in independent learning (72%) (Figure 10). On the contrary, improved communication skills received more "quite a bit" (41%) than "very much" (38%) replies, revealing a need to strengthen program components pertaining to this specific skill set. Environmental communication skills are necessary to translate and convey results of scientific studies into useable information and knowledge to effect change in attitudes and perceptions of people towards the environment and its sustainability. Although responses regarding improvement of communication skills were generally favorable, it appears that there is room to further develop MENRM program components related to communication.

Figure 10 a-f. Personal skills, knowledge, and attitudes of MENRM graduate respondents (n=29), a. Enhanced academic knowledge, b. Improved critical thinking skills, c. Improved research skills, d. Improved learning efficiency, e. Improved communication skills, and f. Confidence in learning independently.
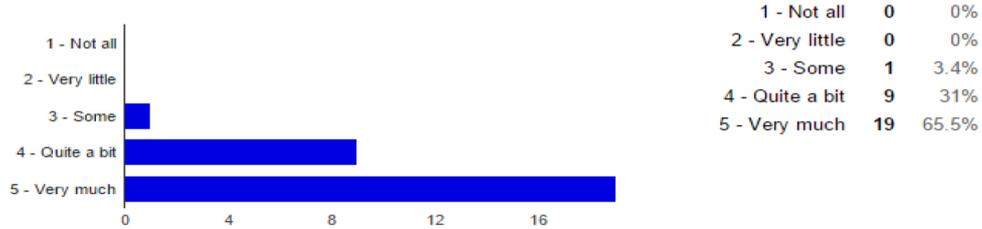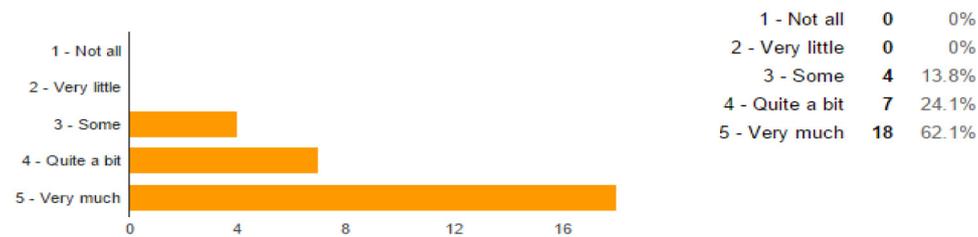
a. Enhanced academic knowledge

1 - Not all	0	0%
2 - Very little	0	0%
3 - Some	0	0%
4 - Quite a bit	6	20.7%
5 - Very much	23	79.3%

b. Improved critical thinking skills

1 - Not all	0	0%
2 - Very little	0	0%
3 - Some	1	3.4%
4 - Quite a bit	9	31%
5 - Very much	19	65.5%

c. Improved research skills

1 - Not all	0	0%
2 - Very little	0	0%
3 - Some	4	13.8%
4 - Quite a bit	7	24.1%
5 - Very much	18	62.1%

d. Improved learning efficiency

1 - Not all	0	0%
2 - Very little	0	0%
3 - Some	2	6.9%
4 - Quite a bit	9	31%
5 - Very much	18	62.1%

e. Improved communication skills

1 - Not all	0	0%
2 - Very little	0	0%
3 - Some	6	20.7%
4 - Quite a bit	12	41.4%
5 - Very much	11	37.9%

f. Confidence in learning independently

1 - Not all	0	0%
2 - Very little	0	0%
3 - Some	2	6.9%
4 - Quite a bit	6	20.7%
5 - Very much	21	72.4%

Compensation

Reflecting on their compensation, 55% of the respondents reported that they were currently receiving higher salaries than before they started their MENRM studies. Meanwhile, 58% answered in the affirmative when asked if they were happy with their current compensation.

Figure 11. Compensation of MENRM graduate respondents (N=29)
a. Receiving higher compensation and b. Salary satisfaction.

a. Receiving higher compensation

	Yes	16	55.2%
	No	13	44.8%

b. Salary satisfaction

|	Yes	17	58.6%
	No	12	41.4%

Professional Skills and Competencies

The next set of questions focused on three important skills – people management, policy making, and technical or operational skills. Since earning their MENRM degree, 75% of the graduates felt that there has been an increase in their technical responsibility, while 55% and 60% said their role in policy making and managing people also increased, respectively (Figure 12 a-c).

Figure 12. Responses of MENRM graduate respondents (n=29) of the tracer study on professional skills and competencies related to a. Increased people management, b. Role in policy making and c. Role in technical responsibility.

a. Increased people management

	Yes	17	58.6%
	No	12	41.4%

b. Increased role in policy making

	Yes	16	55.2%
	No	13	44.8%

c. Increased technical responsibility

Yes		22	75.9%
No		7	24.1%
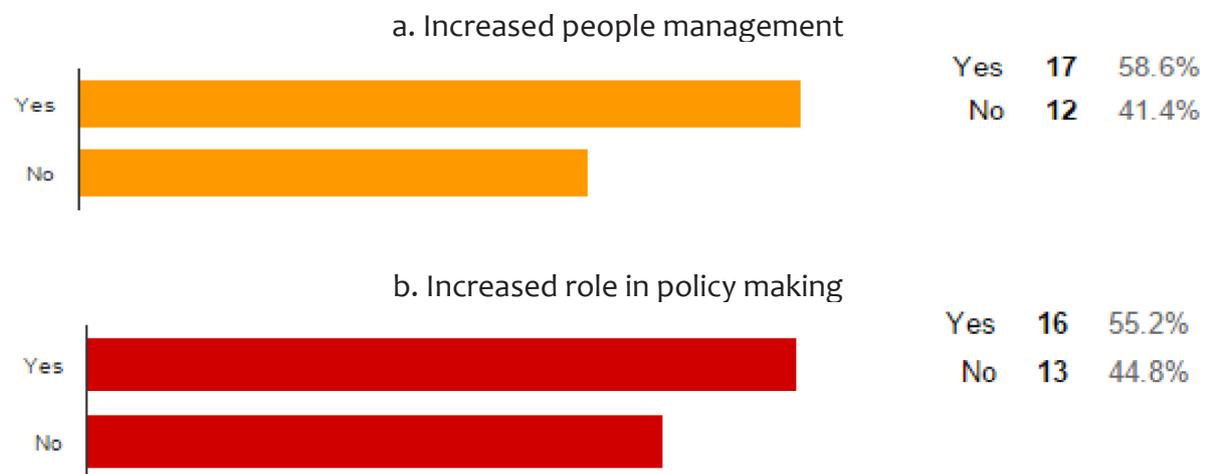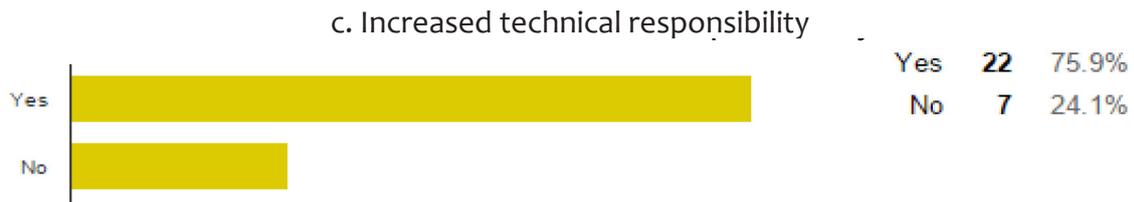
Summary and Conclusion

The University of the Philippines Open University has offered the Diploma and Master of Environment and Natural Resources Management since its approved institution in August 1998 through open and distance learning. With the affordances of web-based technologies, the program is now offered almost completely online, except for the proctored sit-down comprehensive examination administered through learning centers and institutional partners. As an institution of higher learning, UPOU has developed a graduate program intended to provide adult life-long learners with professional skills and competencies in environment and natural resources management by earning qualification for a Diploma or Master's degree. An assessment of the MENRM program was done through an analysis of graduate admission data and a tracer study of MENRM graduates from school years 2010-2014. The study has shown that their work schedule was an important consideration in pursuing an MENRM graduate program through open and distance learning as majority of the applicants are employed. The MENRM program has contributed to their personal and professional development, particularly in their increased capacity for project and people management, policy making, research and technical skills, and critical thinking skills. However, it appears that development of communication skills need to be targeted and better addressed through the program.

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Consuelo Dl. Habito and Maripres U. Sarinas

So Your Article Appeared in a Predatory Journal?

Felix Librero

Professor Emeritus and Former UP Open University Chancellor

At the UPOU, I'm a member of two committees at the university level: Committee on Professor Emeriti and Committee on the UP Science Productivity System, both requiring stringent criteria that have something to do with scientific output largely in the form of scientific publications in books or academic journals. The Committee on Professor Emeriti is responsible for the evaluation and nomination of retiring faculty members with the rank of Professor 12 to the title of Professor Emeritus. The Professor Emeritus title is for life, and, at UP, it's no longer automatically awarded to retiring Professors. It has become highly competitive.

The other committee that I'm a member of is responsible for the evaluation of faculty members to determine if they're qualified to be nominated for the Award UP Scientist I, UP Scientist II, or UP Scientist III; or UP Artist I, UP Artist II, or UP Artist III.

In evaluating the scientific or artistic outputs of the faculty members being considered for the Scientific Productivity Award, the UP Artist Award, and the Professor Emeritus Award, we look carefully at the scientific/artistic publication outputs. In other words, we take a look at books, book chapters, or journal articles published in reputable journals by the faculty member concerned. This has become a problematic matter beginning this year because the UP System has suddenly excluded articles published in what they have labeled predatory journals. Why has this become a problem?

Predatory publication refers to a system of publishing scientific papers subject to various characteristics like weak review process, guarantees that an article would be published quickly, the author paying a publication fee, and things like these. We used to think of predatory journals as only those that charge publication fees, but there are more issues involved. For example, the criteria that would identify a journal as predatory journal, or a publishing house as predatory publisher, include the following characteristics:

1. Peer review procedure is weak or even non-existent.
2. Board of Editors is comprised of unknown names in the field, or include names of known individuals without their permission, much less agree to become members of the editorial boards.
3. The journal doesn't have authentic address.
4. The journal has an over-active promotion program, practically forcing individuals, researchers, or authors to submit articles to the journal.
5. The journal is usually not listed or even mentioned in the Journal Citation Report, which is usually through the Library.
6. The journal has a high manuscript acceptance rate.
7. The journal may be short-lived, hence without ISSN.
8. The journal has an over-flattering characteristic such as high impact factor, high citation indices of individual articles.

9.   The journal charges publication fee, which is frequently exorbitant.
10. Little or no attention paid to digital preservation.

There are other characteristics but those mentioned are the common ones. Perhaps the most common among these is that authors are asked to pay publication fee after the publication of the article, which makes it impossible to object. Very many journals do this, including non-open access journals,   and this practice has even been bolstered by the proliferation of open access journals. This phenomenon of open access started big time in 2002. It is estimated that today, the number of open access journals has surpassed the 10,000 mark. The number is probably much larger now. There are three models for publication fee charges, also known as article processing charges (APC) for open access publications (journals).

1. **Gold Model,** which provides that the author pays for the publication of his article.
2. **Green Model,** which means that the author shall self-archive all his previous articles published in open access repositories, and possibly make them available on request. In other words, the journal has nothing to do with archiving the article it publishes.
3. **Platinum Model,** which means that the publication is free for both author and readers, and is funded by an organization, institution, or other individual/s.

To the issue of whether or not the University of the Philippines should exclude any publication from predatory journals in its evaluation of scientific productivity of individual faculty members is really an internal matter. My suggestion, however, is that the policy to exclude articles published in predatory journals from the evaluation of scientific outputs of the individual faculty member being considered for promotion or award should not be applied now or retroactively. Maybe it could be applied next year, or in the next call for promotions. By then, the UP System would have completed its list of journals it considers predatory and any article published in such journals the UP shall not credit under its promotion or scientific productivity programs. It is necessary that the UP has its own criteria for determining whether or not a journal is predatory. Otherwise, it can use the list provided by legitimate societies or associations such as the Directory of Open Access Journals (DOAJ) or the Open Access Scholarly Publications Association (OASPA). The list, regularly updated and published by Jeffrey Beall of Colorado State University, is controversial although used by many universities. One of the criticisms against Beall is that it is apparent he has a bias against open access publications. Beall's list is commonly referred to as "black list' of journals, while those from DOAJ or OASPA is "white list," which means they're not predatory journals.

Just how serious is this problem in the academe? Here are data from Jeffrey Beall.

Year	No. of Predatory Publishers
2011	18
2012	23
2013	225
2014	477
2015	693

If, in fact, there are more than a million journals today, then this figure is a miniscule 0.0690/0 of all journals. The problem is that those suspected to be predatory journals are those being published mostly in developing countries in Africa and Asia.   There are usually coming out of Africa, India, Pakistan and other countries. This is not to say that there are no predatory journals coming

out of the Americas, Europe, and smaller developing countries. In fact, years back, Elsevier was seriously criticized for publishing a predatory journal, which was discontinued.

The number of questionable stand alone journals:

Year	No.
2013	126
2014	303
2015	507

If anything, the number of predatory publishers as well as predatory open access journals has been increasing rapidly on a yearly basis, but the increase is largest in 2013. In the case of stand alone journals (those that are not part of any organization or institution) Beall also reported that while in 2013 only 126 journals were questionable, this number increased to 507 in 2015.

If James Martin is right, that journals grow by a factor of ten every 50 years, then we have the following figures:

1750	10
1800	100
1850	1,000
1900	10,000
1950	100,000
2000	1,000,000
2015	3,000,000 ?
2050	10,000,000

This, of course, is a moving target because journals are sprouting all over the globe.   Had there been a journal counter, there would be endless clicks rather quickly in succession. This simply means that the problem is probably expanding geometrically and our solutions are simply by singular count.

Now, let's focus on the University of the Philippines System. There's one point that needs to be discussed by all concerned individuals and campuses. Simply because an article was published in a "predatory" journal doesn't necessarily mean the article per se is not of high quality. Of course, the circumstances under which the article may have been published could be questionable. But there may be one issue that neutralizes all others, and this could be the utter lack of benefit of the doubt that we ought to be giving our colleagues. The academe could be viewed as an arena for back-stabbing. Over-all, we do have too much of a sense of individualism and lack of consideration.

Unfortunately, predatory publishing, which is also called vanity publishing, will not stop unless academics stop submitting their articles to these journals. How about, "just leave them?" Well, that's much easier said than done.

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 1[1] and Author 2[2]

[1]Position, 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 1[1]and Author 2[2]

[1]Position, 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 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

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

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