Participation in Research and Innovation Exhibitions: E-Learning Applications in Arabic Language

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ABSTRACT

Arabic learning is in dire need for advance teaching and learning aids, especially with the integration of advanced multimedia application by using computer assisted applications, and learning courseware such as educational websites, digital or online language games, mobile learning applications, etc. In fact these applications have already been developed and explored by many researchers all over the world in various platforms such as web-based, CD-based, cloud based as well as mobile-based applications. The potential of designing and developing these applications is not limited to the benefits for teaching and learning Arabic language per se, but it is also has prospects to go into breakthrough of the innovation exhibition and competitions which are organized locally and internationally. These events are important for the researchers to generate and promote their innovative ideas to others and has the potential to transform their research into commercial products and winning the medal awards based on the evaluation criteria in the research and innovation exhibition and competition. The purpose of this paper is to discuss several research and innovation exhibition and competitions which are being organised locally and internationally and its relationship and potential with the development of multimedia applications in the field of teaching and learning Arabic language.

Keywords: Design and development, research and innovation, multimedia application, Arabic teaching and learning, computer assisted language learning (CALL)

INTRODUCTION

The emergence of research and innovation exhibitions and competitions is a current trend in this era of research world and has attracted the participation of researchers from various fields of knowledge regardless of their specialization either it is in the true science-based or social science-based field of knowledge. For the computer assisted language learning (CALL), it

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has high potential of relationship with this innovative research events as it is pertinent to the exploring and innovating new ideas and products in teaching and learning Arabic especially to the non-native speakers as effective instructional aids for the learners. The potential of utilizing these educational multimedia applications in teaching and learning Arabic should not be limited to enhance teaching and learning performance per se, but it is also may be complemented with the exploration of participation in the research and innovation exhibitions and competitions. These research events provides several benefits to the educational practitioners, learning institutions, teachers and learners by presenting new ideas, innovation new learning products, exchange of networking and linkages among researchers, promoting learning institutions to the industrial partners, as well as winning prestigious research and innovation medals locally and internationally which contribute to the university’s ranking.

**DESIGN AND DEVELOPMENT OF COMPUTER APPLICATIONS IN ARABIC LANGUAGE TEACHING AND LEARNING**

Nowadays the use of computer and its applications have become an integral part of the modern societies’ life. Changes within the different aspects of life happen in rapidly and it is the duty of every society to keep up with the information era, especially in embracing the computer and its applications which would then individuals as qualified and well-armed in bracing the rapid changes of this era. Learning through multimedia is becoming the focus of researchers in computer-assisted language learning in order to enhance the effectiveness of learning process. The term “multimedia learning” can be defined as the presentation of material using both words and pictures. In addition, Mayer and Moreno found that the learner’s understanding while watching animated images of a certain phenomenon (the lightning phenomenon) accompanied with an auditory explanation is much better than the learner’s understanding of the similar animated images while verbally reading an on screen text explanation. These technical developments are now synchronized within the stages of self-learning development. This involved the use of multi-medias and computer-assisted learning method which increasingly activated the role of computer in language learning as Based on Mohd Feham and Isarji, Mohd Feham, Ashinida, Afendi and Mohd Shabri and Zawawi, there is still lack of use of computer-assisted technology in the Arabic language teaching and learning.

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Furthermore, Mohd Feham\textsuperscript{9} mentioned that there are few inventions and innovations available in the field of Arabic language learning, due to several reasons that pose a limit to the number of Arabic language educational software and courseware. The majority of Arabic language teachers are also found to be incompetent in using the computer and courseware in the teaching process due to poor computer literacy, especially among the senior generations\textsuperscript{10} and also lacking computer training\textsuperscript{11}. In addition, the technological production of machinery for Arabic language teaching and learning is also being dominated by the American-English language, be it in terms of software or hardware as pointed out by Ditter\textsuperscript{12}. The studies also have reiterated that multimedia applications have the ability in assisting the process of teaching in the classroom in enabling more flexibility and effectiveness\textsuperscript{13} as well as in providing better learning experience compared to the face-to-face environment\textsuperscript{14}. A particular study in learning Arabic using multimedia found that the audio with images mode was an important aid to learning as compared to text with images mode\textsuperscript{15}.

The importance of using multimedia and computer applications in teaching and learning Arabic nowadays has led to the design and development of various multimedia learning applications in order to enhance learner’s performance and facilitate effective and enjoyable teaching aids in Arabic language. As mentioned earlier, this paper is sharing the idea of participation of this Arabic multimedia learning applications in research and innovation exhibitions and competitions in order to promote the potential of them in exploring various benefits as well as winning prestigious research and innovation medals locally and internationally. This achievements are significant to improve the researchers’ performance, their research networks and linkages, which contribute to the better and higher university’s ranking. Based on QS Stars university rating, innovation is one of the criteria assessed by the QS Stars university rating service for universities, by measuring rewards universities whose work goes beyond the confines of academia from three criteria of patent (20 points), spin-off companies (10 points) and industrial research (20 points)\textsuperscript{16}.

\textsuperscript{9} Mohd Feham Mohd Ghalib. The design, development and testing on the efficacy of a pedagogical agent on the performance and program rating scores among students learning Arabic. Unpublished Ph.D. dissertation, Universiti Sains Malaysia, 2006


PARTICIPATION IN THE RESEARCH AND INNOVATION EXHIBITION AND COMPETITIONS LOCALLY AND INTERNATIONALLY

The researchers have several options in participating in the research and innovation exhibition and competitions which are being organised locally and internationally. These events can be divided into categories such as the followings:

i) Faculty Level among Staff and Students
Some of the research and innovation exhibitions and competitions are organised at the faculty members among students and staff. By organising this research events, the faculty has the opportunity to generate new ideas among staff and students, and selecting the best presentations and products to the higher level of exhibitions and competitions. The examples of these research events are as indicated below:

a) Kulliyyah Postgraduate Exhibition, Research and Innovation (KERIE), International Islamic University Malaysia (IIUM)

![Figure 1: KERIE, IIUM](image)

B) Research, Invention, Innovation and Design, MARA University of Technology, Melaka (RIID).

![Figure 2: RIID, UiTM Melaka](image)
ii) University Level.
Some of the research and innovation exhibitions and competitions are organised at the university level as well among staff members and students. By organising this research events, the university has the opportunity to generate new ideas among staff and students, and selecting the best presentations and products to the higher level of exhibitions and competitions. The examples of these research events are as indicated below:

a) International Research, Invention and Innovation Exhibition (IRIIE), International Islamic University Malaysia (IIUM)

Figure 3: International Research, Invention and Innovation Exhibition (IRIIE), http://www.iium.edu.my/irie/16/

b) Invention, Innovation and Design Exposition (IIDEX), MARA University of Technology (UiTM), Shah Alam, Selangor.

Figure 4: Invention, Innovation and Design Exposition (IIDEX), UiTM. http://www.iidex.com.my/
iii) National Level.
Some of the research and innovation exhibitions and competitions are organised at the national level. By this research events, the country has the opportunity to generate new ideas among staff and students in the universities, schools and colleges by selecting best presentations and products to the higher level of exhibitions and competitions internationally. The examples of these research events are as indicated below:

a) International Conference and Exposition on Inventions by Institutions of Higher Learning (PECIPTA)

![Figure 4: PECIPTA](http://pecipta.upsi.edu.my/index.php/component/content/featured?id=featured)

b) ITEX Malaysia

![Figure 5: ITEX, Malaysia](http://www.itex.com.my/)

c) The Exposition on Islamic Innovation (i-Inova), Universiti Sains Islam Malaysia (USIM) and Ministry of Education Malaysia (MoE).

![Figure 6: The Exposition on Islamic Innovation (i-Inova), USIM and MoE,](http://i-inova2016.usim.edu.my/)

d) National Innovation and Invention Competition Through Exhibition (i-COMPEX), Politeknik Sultan Abdul Halim Mu'adzam Shah (POLIMAS) and Ministry of Education Malaysia (MoE).

![Figure 7: National Innovation and Invention Competition Through Exhibition (i-COMPEX),](http://app.polimas.edu.my/icompex/)
e) **International Syariah Compliant Idea, Invention, Innovation & Design (ISCIID)**. Mara University of Technology (UiTM), Shah Alam, Selangor and Ministry of Education Malaysia (MoE).

![International Syariah Compliant Idea, Invention, Innovation & Design (ISCIID)](http://sciiid.uitm.edu.my/)

Figure 8: **International Syariah Compliant Idea, Invention, Innovation & Design (ISCIID)**, UiTM and MoE. [http://sciiid.uitm.edu.my/](http://sciiid.uitm.edu.my/)

f) **International University Carnival on E-Learning (LUCEL)** Organised by National Council on E-Learning (Meipta) and Ministry of Education Malaysia (MoE). The Exhibition is Formerly Known as National University Carnival On E-Learning - NUCEL.

![International University Carnival on E-Learning (LUCEL)](http://ctl.utm.my/iucel/)

Figure 9: **International University Carnival on E-Learning (IUCEL)**, by MEIPTA, UiTM and MoE, [http://ctl.utm.my/iucel/](http://ctl.utm.my/iucel/)

iv) **International Level**.

Among the research and innovation exhibitions and competitions are organised at the international level are as the following:


b) Brussels Innova, the International Exhibition of Invention, Research and New Technologies, Belgium.

Figure 10: Brussels Innova, http://www.brussels-innova.com/
C) Korea Seoul International Invention Fair (SIIF)

Figure 11: SIIF 2016: [http://www.siif.org/eng/](http://www.siif.org/eng/)

**SEVERAL EXAMPLES OF SUCCESSFUL PARTICIPATIONS IN THE RESEARCH AND INNOVATION EXHIBITION AND COMPETITIONS**

a) Online Arabic Vocabulary Games Learning Website, IIUM

Figure 11: Online Arabic Vocabulary Games Learning Website, [http://www.arabic-games-iium.net/](http://www.arabic-games-iium.net/)
1- Inventor : Assoc Prof. Dr Muhammad Sabri Sahrir (IIUM)

2- Achievements : Silver medal, IID-SE 2010, UiTM Shah Alam
Silver medal, IRIIE 2011, IIUM
Bronze medal, i-INOVA 2011, USIM and MoE
Bronze medal, IRIIE 2012, IIUM
Silver medal, NUCEL 2014, MEIPTA, UiTM and MoHe.
Gold Medal, PECIPTA 2015, UPSI and MoHe.

Bronze Medal 2016, Malaysia Technology Expo – MTE 2016

3- Sample of poster presentation:
b) EZ-Arabic – Virtual Learning Platform for Malaysian Primary Schools.

**ABSTRACT**

This innovation features a virtual Arabic learning tool prototype, which is specifically designed for learners at primary schools in Malaysia. This expanded Arabic virtual learning tool prototype enables teachers and students to access to additional Arabic language learning aids, and complementing traditional learning methods. The prototype provides a new learning experience for students who have been through a traditional Arabic teaching and learning methods, by immersing into the attractive, interesting and interactive virtual learning environment. It facilitates Arabic learning enhancement through a compendium and a variety of open-sources learning tools such as the followings: (a) E-books, (b) Educational Arabic games, (c) Audio and visual learning aids in Arabic, (d) Online dictionary and translator for Arabic, (e) Online chat-box for virtual discussion, and (f) Links of various websites in learning Arabic for children.

**MATERIALS & METHODS**

The innovative process begun with the literature analysis of three theories based on the work of Nation (2003), Prensky (2001) and Mayer (2001). The design and development of this game-based learning prototype are modelled on the methods and approaches of design and development research (Richey & Klein, 2007). This method is also known as designed case (Reigeluth & Frick, 1999), design-based research (Reeves, 2006 & Herrington, et. al, 2007), formative research (Nieveen, 2007), and design research (Bennman-Ritland, 2003; Van der Akker, 2001). This prototype is designed and developed based on ‘design principles’ adapted from a study by Muhammad Sabri (2011), which was conducted on the design and development of an online Arabic vocabulary learning games prototype among pre-university learners in IIUM.

**RESULTS & CONCLUSIONS**

The prototype is still in its pilot phase of design and development by analyzing the feedbacks from teachers and pupils from several selected teachers in Malaysian primary schools. The prospect potential market and use of this product are wide, it includes: schools, universities and other learning institutions, special programmes, eg: j-QAF, Kafa, states religious schools, etc. The URL for this game prototype is: http://ezarabic.net/.

**PURPOSE & HYPOTHESIS**

- To provide a virtual learning platform and a tool for learning Arabic, especially for children learners from Malaysian primary schools.
- To provide an alternative supplementing reference for the traditional textbook.
- To enhance learners’ interest and motivation towards learning Arabic via various multimedia support files such as pictures, sounds and videos.
- To facilitate Arabic learning enhancement through a compendium and a variety of open-sources learning tools.

**ACHIEVEMENTS**

- National Innovation & Invention Competition Through Exhibition 2014 (Gold Medal).
- Special Award : “Prize of the Idea Monopoly (Belgium)”.
- Minggu Penyelidikan & Inovasi UniSZA 2014 (Silver Medal).
- IIUM Research, Invention & Innovation Exhibition 2012 (Bronze Medal).

Figure 11: EZ-Arabic, http://ezarabic.net/v1/en/

1- Inventor : Mohd Firdaus Yahaya & Mohd Shahrizal Nasir (Universiti Sultan Zainal Abidin, UniSZA, Terengganu) and Dr Muhammad Sabri Sahrir (IIUM)
2- Achievements : Silver medal, IRIIE 2012, IIUM
Silver medal, UniSZA 2014
Gold medal, i-COMPEX 2014
Silver medal, ISCIID2014, UiTM and MoE
Bronze medal, i-INova 2014, USIM and MoE
Silver medal, Brussels Inova 2014, Belgium.
Special award (Prize of the Idea Monopoly), Brussels Inova 2014
Gold Medal, IUCEL 2016 (EZ-Arabic 2.0).
ARABIC EDUCATIONAL VOCABULARY GAMES FOR BEGINNERS

PRODUCT DESCRIPTION

Educational game or Digital Game-based Learning (DGBL) has been among teaching and learning aids in many disciplines of knowledge. This project presents an educational product of Arabic educational games for beginners that was specifically designed for pre-university students of Non-Arabic native speakers at the Centre for Foundation Studies (CFS), International Islamic University Malaysia (IIUM). This educational games in Arabic vocabulary are being used by the learners since 2011 until now. This digital games prototype is using web-based platform with Rapify e-authoring tool in the prototype development process with a conpound of 34 various language games for Arabic language learners.

COMMERCIAL POTENTIALS

- The product is used since 2011 until now.
- The commercialization for this product is wide, which includes various universities, schools, colleges, educational courses and programmes, etc.
- Various levels of learners in different learning institutions and settings.

URL: www.arabic-games-iium.net

NOVELTIES

THEORY: Based on design and development research or DRR: The design and development of these games prototype are modeled on the methods and approaches of design and development research or DRR [Richey and Klein, 2007], or formerly known as developmental research [Richey, Klein and Nelson, 2004].

PRACTICE: Practical use of this educational vocabulary games for learners at CFS-IIUM. It is also suitable for other settings as it is designed for beginner learners.

METHODOLOGY

RESULT AND DISCUSSION

**Correlation is significant at the 0.01 level (2-tailed).**

CONCLUSION

The prior needs analysis for the design and development of this games prototype was conducted among 113 out of 133 learners, and the correlation analysis was conducted after completion of this prototype among 100 learners in 3 different academic semesters in 2011. The final report was reported in a mixed method evaluation including learners’ perception, concentration, immersion and knowledge improvement and qualitative findings from interview sessions, think-aloud methods, open-ended questionnaires, testimonials and class observation.

AWARDS & PUBLICATIONS:

7. Sahrir, Muhammad Sabri and Ahsan, Nor Aida (2012) A design and development approach to Resevoirian Online Arabic Vocabulary Games Learning in IUSM. Proceeda - Social and Behavioral Sciences, 87, pp. 360-365. I(F70472)
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CONCLUSION

This paper provides the ideas of exploring the potential of integration of multimedia learning applications in the participation of research and innovation exhibitions and competitions locally and internationally. Such efforts should be initiated by the researchers and faculty members as well in order to generate new innovative research ideas and products especially in the teaching and learning Arabic language to make it at the same par and level with other fields of specialization and knowledge. The teaching and learning Arabic language should make significant transformation and contributions to portray better prospects and future to the researchers, teacher and learners in this field in addition to the traditional method of teaching and learning in Arabic.

REFERENCES


