BASIC ENGLISH LANGUAGE TOOLS FOR BEGINNERS: USING ANIMATIONS AND AUDIO

Mashal Alqudah, Abdallah Abdulsalam

Abstract— The recent proliferation of technology and continuous advances in educational applications of computer has made it possible to integrate Information Communication Technology in our learning environments today. This paper examines the past and present trends of computer-aided language learning (CALL) research, with major emphasis on the use of animations and audio as an important concept for language learning applications. The participants in this study included English language experts from the English Language Center (ELC) at Linton University College, Malaysia. A discussion on the impact of ICT in language learning is described along with an explanation based upon the procedures used to design such application for the English Language center. This study found animations and audio as an important concept in developing effective computer aided language learning applications particularly for English language learners and that CALL has become a need rather than a want in language learning. However, this study found that there are special requirements of English language tools for beginners following the standard curriculum of the ELC of a specific institution.

Index Terms— Animations, Audio, Computer Aided Language Learning, English Language Center, Educational technology, Joint Application Development, Multimedia

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1 INTRODUCTION

The use of technology in language learning is staggering and research for appropriate language learning tools continues to grow. Even with the ever growing understanding of developing language learning tools, there are yet many problems unsolved.

Some researchers argued that Teacher is indispensable in language learning and that Computers cannot provide information more clearly than teacher and express a motivational feedback or reinforcement [1] [2]. Not surprisingly, this study explored the power of animations and audio in language learning tools and how it can break the barrier of communication between a computer aided language learning tool and the learner. The notion of this study is that; with the use of animations and audio, is it possible to develop language learning tools that will foster language learning at least the same as a typical traditional class?

The core idea within such a perspective is that learning is social [3] to learn one must interact with the world, and to interact with the world one must take an interactional role. To implement these educational learning space principles requires a holistic program of institutional development that includes curriculum development, student development, and resource development [4].

The technique that was used to gather information in this study was Joint Application Development (JAD) session with experts in teaching English language from the English language Center of Linton University College, Malaysia. The information was then analyzed to come out with a conclusion for this study.

Although this project may differ to a great extent with previous literatures in terms of funding, scope, and objectives, they reflect to the same perspective of understanding how computer aided language learning tools can be used to improve linguistic learning. Finally, this study appears to be important since it addresses the use of animations and audio in language learning tools to provide a highly interactive and user-friendly learning environment.

2 BACKGROUND

The existence of CALL in academic literature has been recognizable for about the last thirty years [5]. The earliest concept of educational technology was linked to the use of audio-visual materials, charts, models, maps specimen and concrete materials. With the advent of physical science and consequently the electronic revolution, there came an era of sophisticated hardware and software (gadgets) like projectors, tape recorders radio and television. With the advent programmed learning and programmed instruction concept, a new dimension of educational technology came into the educational horizon [6]. The expression of 'multimedia' has it's origin in the domain of Computer Science, but it is now resident in societies' contemporary diction [7]. These concepts have therefore been longstanding and their inherent suitability for Computer-aided learning has been examined in numerous researches indicating the suitability of such concept in language learning. Furthermore, there are many researchers who affirm to the fact that animations and audio can support language learning in several ways [8] [22]. The results of an empirical study on multimedia presentation find out that; "The educational value of such simultaneous and amalgamated visual and auditory presentation can be correlated with the fact that research has revealed that people remember 20% of what they see, 40% of what they see and hear, but about 75% of what they see and hear simultaneously" [8]. In view of the current status quo, the manifestation of these concepts has lead to innovation of interactive language learning tools. This is to say that, the application of this concept ensures efficient learning because students will learn from what they see and hear (which is easier to recall) as found in the Lindstorm research of multimedia presentation.

In spite of the advantages and the promising prospects of these concepts, there are also some challenges too. Some are attributable to the study of Susan 2006, where she found out

that "Audio resources relies on sense of hearing, some form may be expensive"[9] and limited interaction between lecturers and students which she refers to as "Lack of opportunity for interaction between instructor and learner". In this regard, Zepp 2005 shares the same view with Susan (2006) and concured the value of teacher within the learning environment and articulates the following responses in this regard:

1) Computers cannot give information more clearly than teacher. However, with the help of animation and audio, this research found that animations and audio can at least provide information as the teacher.

2) In order to transmit information or skills effectively, we need people to do so.

3) Computers cannot express a motivational feedback or reinforcement. In this research, one of the important features of the system is meant to provide motivational feedback using audio-visual capabilities.

4) Teachers know how to teach specific information to learner.

Nothing can transmit any information or skill more effectively than teachers, who can organize, motivate, show warmth, humour, and flexibility. The most critical variable that contributed to student outcome was the learner-instructor interaction [8] [10]. Thus, the role of people (teachers) becomes an important factor that must be considered in any successful learning approach. Hence, appropriate language tools should consist of materials that will allow the teachers to deliver lessons at least with the same content of a typical traditional class.

However, the rapid development of educational applications of computer is certainly a testament to the growing material for teaching languages. This study intends to carry along the work of other researchers in an attempt to find out how animations and audio can improve the use of computer aided language tools for English language.

2 LITERATURE REVIEW

Implemention of a basic computer aided language learning tool for any institution must consider major language areas and skills which are reading, writing, speaking and listening [11]. However, different institutions have different requirements or standard curriculum in teaching English language for beginners [12]. Therefore, the scope of this study will encompass the application of computer software using audio and visual aids to learn English language. The core initiative within this idea is to incorporate traditional and ICT approach in learning to make maximum use of available infrastructure and or learning resources.

When examining any context in which Computer Aided Language Learning (CALL) might be used, it becomes immediately obvious that there is diversity at a range of different levels that go beyond simply what happens within a single class or course. This diversity may be seen at the individual level, the institutional level or societal level, each of which comes together in a way that impacts how Computer Aided Language Learning can be implemented and used [13].

Technology fundamentally changes both content and the way (learning) material is presented, use of an automated learning

environment may require extensive changes in course content or even a broader redesign of an entire curriculum and there are four (4) factors that have recently revived interest in interactive instruction (learning) tools and why it should be used as learning tools [14] These factors include;

1) The rapid declining costs of computers and the advent of the desktop computer

2) The escalating labor-intensive costs of traditional schooling

3) The development of alternative mechanisms that link the computer with other technologies, such as video disk and interactive cable, and

4) An improved understanding to create instructional packages.

While computer aided language learning is proving to be effective, the costs of computers is rapidly declining thus making it possible to adopt in teaching-learning systems. This is to say that, as Damodar, 2001 stated, "PCs have become the attractive teaching aids of English and the most convenient tools in the hands of teachers and researchers of language studies" [1].

Notwithstanding the enormous differences of curriculum requirements, it provides advantages for both students and teachers alike in order to achieve specific learning outcomes. When teachers effectively integrate technology into the curriculum, English Language Learners receive direct benefits. Emerging technologies and Computer Assisted Language Learning (CALL) used with English Language Learners are "ideal for fostering reading and writing skills in the target language" [15]. Use of technology with English Language Learner can develop language, literacy, and technological literacy skills [16].

TECHNOLOGY IN EDUCATION +
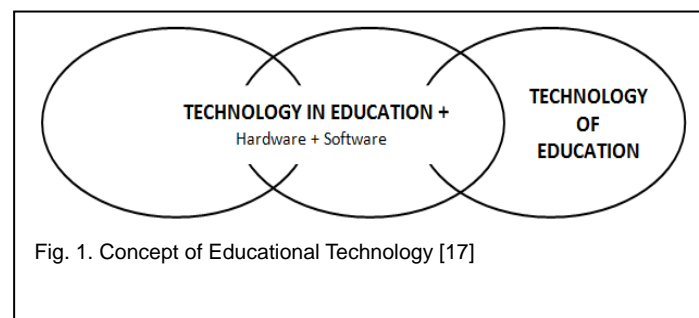Hardware + Software

TECHNOLOGY OF EDUCATION

Fig. 1. Concept of Educational Technology [17]

The figure above shows the strategic design of incorporating Information communication technology in learning. This study implies the concept of multimedia (animations and audio) as a medium of instruction which is linked to the effectiveness and efficiency of teaching English language. In the context of this study, Computers will be used as hardware while the application will be used as software. Consequently, Major emphases are placed on the needs of learner's satisfaction, designing curriculum and lastly evaluating the progress of students.

The uniqueness of applying animations and audio in Basic English language tools is its ability to interact with students. In contrast, a Book can tell students how to do a particular task, but it cannot identify specific errors done by the students nor provide friendly feedback on how to understand and correct such errors. As a result of this unique combination of in-

teractive audio-visual capabilities, the software will allow students to learn on their own pace and also allow lecturers to deal with larger classes effectively.

In a typical traditional learning environment, Learning materials are limited for the students. Traditional teaching methods such as the talk and chalk technique, and classroom lecture, might only allow limited amount of information to flow from lecturers to students depending on the amount of knowledge acquired by lecturers" [18]. Rashty 2010 has different opinion in his research titled "Traditional Learning Vs E-Learning" stating "Other models are always considered to be inferior or less efficient (than traditional learning). However, there is no finding to support this argument, and research shows that technology-supported models are at least as good as traditional learning"[19]. The figure below shows clearly, the advantages and disadvantages of traditional and e-learning approaches as presented in the research of Bencheva 2010.
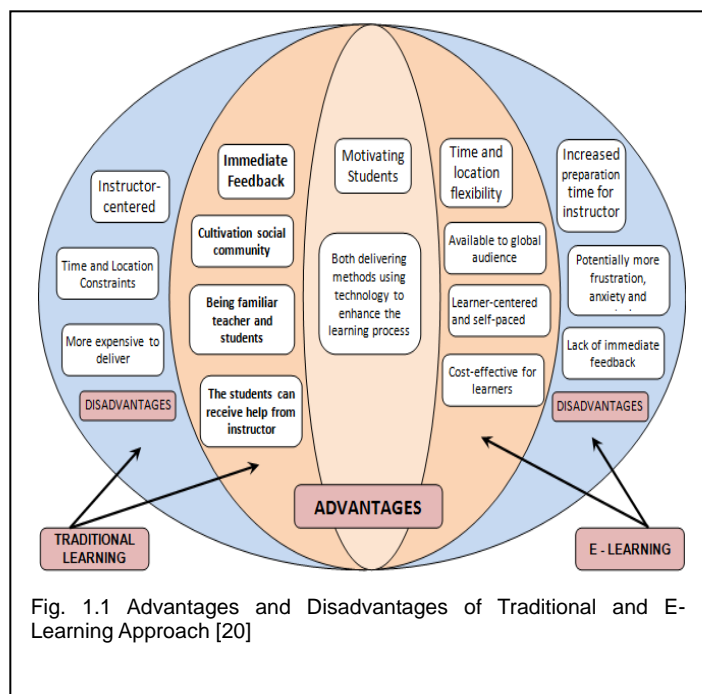

Fig. 1.1 Advantages and Disadvantages of Traditional and E-Learning Approach [20]

Immediate Feedback is one of the major advantages of traditional learning because students can interact with the teacher or colleagues. It is even more important for students who learn better through group work or the opportunity of asking questions and receiving immediate feedback. This was further ascertained in the research of Thurmond (2003) which found out that "The most critical variable that contributed to student outcome was the learner-instructor interaction"[10]. Thus, this becomes an important factor that must be considered in any successful learning approach. The idea that social community helps improve learning has been longstanding, as shown by several researchers of traditional and modern learning approach. Some are attributable to Anastasia (2008), who was alleged to have said: The notion of community is a conceptually appealing one because it suggests a comfortable, socially supportive context. Yet community can do so much more than

create a friendly environment. It can support learning. Community is not simply an add-on. Rather, it can be an integral and powerful force in learning [21]. Traditional learning provides a social learning environment and it fosters social communism amongst students. One way of achieving this is through course work or assignments which promotes communication and collaboration.

Traditional Learning approach provides a face-to-face interaction as opposed to technology-mediated interaction of modern learning approach. Therefore, it may be advantageous for students to get constant reassurance of what they do and understand if they are going on the right direction by asking or getting assistance from their instructor or teacher.

The basic concepts and spectrums of this study are "Animations and Audio". These concepts are generally referred to by many researchers as "Multimedia" [7] [8]. Brennan (2009) explicitly explained about this concept in his research titled "Realizing the Benefits of Computer Assisted Language Learning (CALL) in English Language Learning Classrooms" stating, "Multimedia describes an enriched media presentation format which is concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (video), animation, audio (music or sound), and any other audio-visual media" [7]. The application of this concept as an integral part of the Basic English Language tools for beginners may provide a richer linguistic environment that accommodates the needs of the students by providing animations and graphics to demonstrate different concepts, as well as clear audio materials to model proper pronunciation of sounds and words with the possibility of repeating the same thing for students to get proper understanding of the language. Audio-visual aids are additional means to particular ends and at times contribute valuable aids to learning situation [22]. As pointed out earlier, application of this concept ensures efficient learning because students will learn from what they see and hear (which is easier to recall) as found in the Lindstorm' research of multimedia presentation. The use of animations and audio will provide students with potentially more engaging, interactive and interesting learning tool. The general concept of the Basic English Language Tools for this study is shown in the figure below;
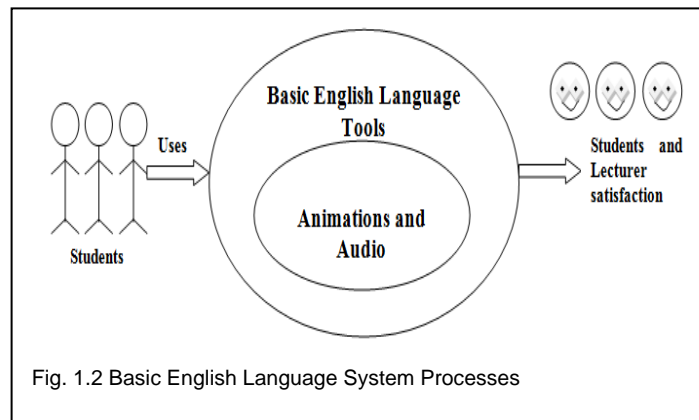

Fig. 1.2 Basic English Language System Processes

The above serves to be the major concept behind the Basic English Language Tools. This shows that the system as a

whole consists of multimedia concepts (animations and audio) and in practical terms, all sophisticated functions will be performed in a manner that is related to the concepts above. Since the importance of using this concept in language learning has been proven in numerous researches [7] [8] [13], it is conceivable that when animations and audio is applied in the Basic English language tool, it will undoubtedly enrich and enhance English Language learning process.

2.1 Research Method

In this study, a qualitative research methodology was used to examine the unique elements of basic English language tools including the analysis, findings, and conclusion for the study. Qualitative research is a set of complex interpretive practices [23]. Others researchers such as Catherine (2010) go with the same opinion with Norman about the interpretive aspect of qualitative analysis saying; Qualitative research is pragmatic and interpretive and grounded in the lived experiences of people [24].

Qualitative research was conducted to demonstrate the appropriate interfaces including specific features of Basic English Language Tools for Beginners, Using Animations and Audio. The user interfaces were developed based on an empirical case study of a Basic English language Tools for Beginners following the requirement of English Language Centers' (ELC) lecturers.

Open-ended interviews were used to investigate the requirements, features and contents from 7 lecturers which included almost half of the lecturers of ELC at Linton University College. All the interviews were tape-recorded and accordingly transcribed. For the data analysis ATLAS.ti software tool was used. Supplementing the interview data was done by analyzing all the documents and the exercises that ELC lecturers are using when delivering their classes. Collecting the data, coding of the data, and analyzing the data were guided based on two awarded systems and based on specific features that ELC lecturers suggested. New requirements, features and contents were suggested by the lecturers which were specifically for their basic level students. Moreover, the data was particularly analyzed considering different level of students with a specific requirements and features for each level. In Addition, based on the available requirements and features of the available system, probing questions were asked to confirm whether the lecturers are aware of what is available as well as clarifying unclear issues. Probing questions lend a hand to understand the features of unclear and complex functions.

Developing the Graphical User Interfaces (GUIs) was provided by adapting Throwaway prototyping as shown in Fig 1.3. This methodology was adapted since it is the most appropriate in the project-acqusition phase [25]. The analysis phase following this methodology aimed to explore whether the available systems are suitable for the end-users by allowing them to interact with the systems. Accepted and new suggested functions from the end-users were demonstrated in the use case diagram (Fig 1.4).
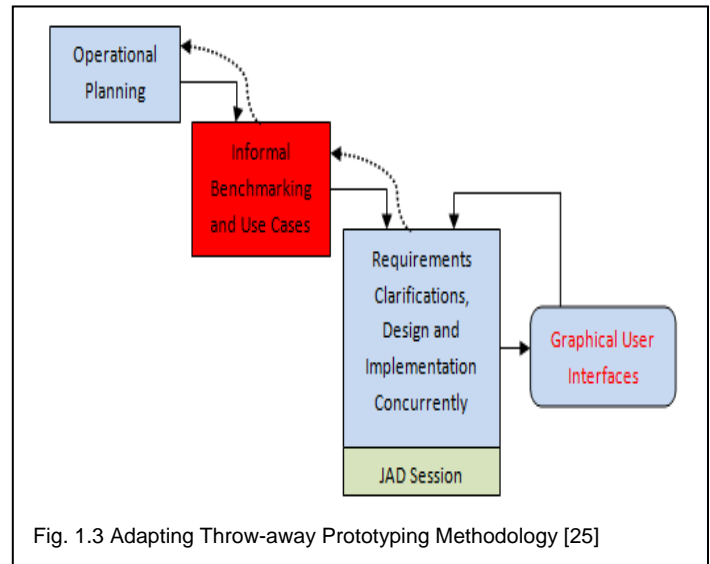

Fig. 1.3 Adapting Throw-away Prototyping Methodology [25]

2.2 Graphical User Interfaces and Acceptance testing

The main aim of this research was to provide working Basic English Language software. However, since the lecturers of ELC were not satisfied with the available software that has been used to assist them in teaching as well as increasing the students' efficiency and effectiveness, the researchers chose to design the interfaces to be evaluated at the early stage of the development.

First demonstration of the GUIs was provided after one week of analyzing the interviews, based on the feedback that was provided by three lecturers who were able to attend the Joint Application Development (JAD) session, Some of the GUIs were amended in their presence while the remaining interfaces were provided after 2 days since the participants were not able to attend more than 1 hour. Additional feedbacks were provided, so another JAD session was conducted, two lecturers attended and provided other feedbacks to come out with appropriate interfaces following the standard of the students levels (Basic levels). This cycle was repeated 4 times until the researchers made sure that all the lecturers were satisfied with what the system must have and how it will work. Considering the requirements that were found from the literatures and the available systems, many of them were omitted or amended following the features that ELC lecturers requested based on their experience with students. Almost all the requirements for first level were amended and new requirements were added as shown the fig 1.4 (The use case diagram). During the testing of the interfaces, the developer just listened and wrote notes without participations. However, some technical suggestions were provided to ensure better understandability of the GUIs when implementing the system.
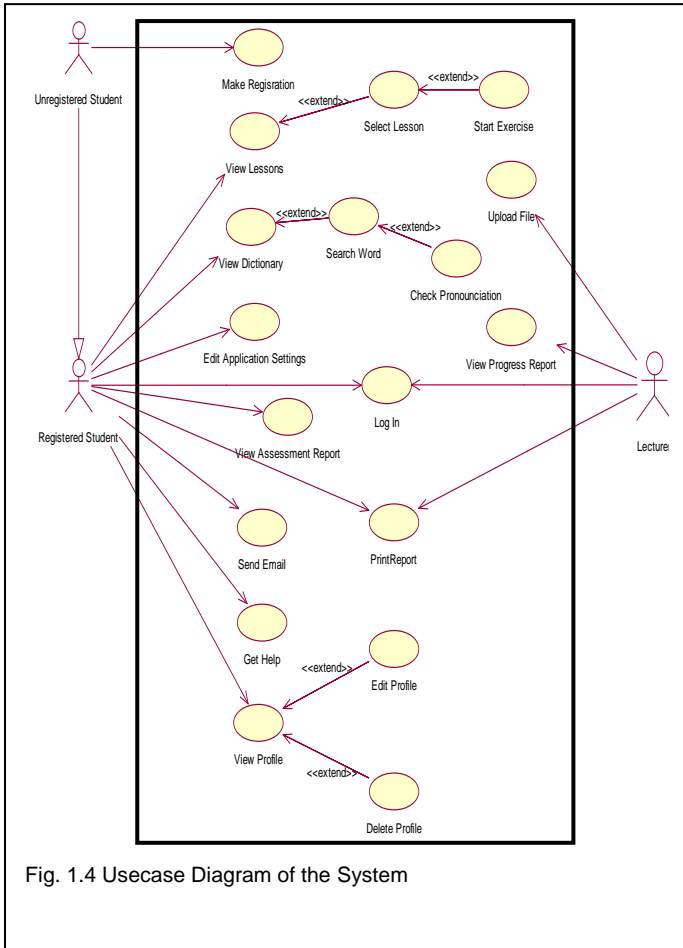
Fig. 1.4 Usecase Diagram of the System

The major usecase or function is the lessons part which consists of View Lessons, Select Lesson and Start Lesson. In practical terms, all actions perform within these usecases are presented with an extensive use of animations and audio.
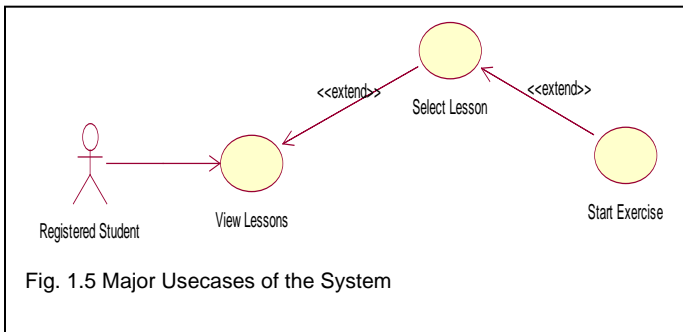

Fig. 1.5 Major Usecases of the System

UseCase: View Lesson
UseCase Description: This will allow the student to view the 4 categories of lessons provided in the application which consists of reading, writing, speaking and listening.
Extended Usecase: Select Lesson
UseCase Description: This will allow the student to select a lesson based on the category he/she selected simply by clicking on it. For example, if the student selects reading category, he/she will then select the lesson (topic) such as Myself, Family etc.

Extended Usecase: Start Exercise
UseCase Description: This will allow the student to start an exercise which he/she selects relating to the previous 2 usecases. Here, all the excercises are time constrained and once the student clicks on the "Start" button, the timer will start and for any occurring event within this usecase such as button click, keypress, textchanged, mouse hover, mouse leave etc. the system will react by providing information related to what the student is trying to do. For example, if the the student provides a wrong answer for a particular question, the system will notify him/her by changing the color of the textbox and showing an error pop up.

Use of Animations and Audio in the usecases:
- Animations are used to show how exercises are performed.
- Constant feedbacks are provided to ensure that the student has appropriate guideline.
- Motivational feedbacks are provided based on the performance of the student in a particular exercise.

2.3 Conclusion

This study has investigated the use of animations and audio in developing basic English language tools. It shows that technology plays an important role in language learning today and that animations and audio can improve the manner of presenting information to particular language learners. Since notion of using animations and audio in language learning tools has been the major focus in this study. Findings from this study with regards to the use of animations and audio in language learning tools include:

✓ Computers aided language learning tools are important source for learning English language and can be effectively used with animations and audio as an apparatus to enhance the motivation of the learners.
✓ Certain technology design features can provide students with added benefits such as motivational feedbacks using audio-visual capabilities.
✓ Effective English language learning tools can be developed following the standard curriculum of a specific institution.
✓ Computers are tools for teachers – Teachers remain an integral part of language learning.
✓ The use of multimedia (such as animations and audio) in language learning tools is an important element of building communication between the learner and computer.

Since the benefit and usefulness of the technology has been systematically proven throughout this study, and the requirements of the system have been defined and modeled with the use of main Unified Modelling Language (UML) diagram which is the use case diagram [26], the final design and implementation may proceed. Finally, animations and audio has proven to be a valuable element of effective English language learning tools and can be used in conjunction with standard curriculums, appropriate design features to accomplish what is typically the outcome of a traditional classroom.

2.3 FUTURE WORK

Since this system needs regular feedback from the end-users (Lecturers & Students) and since the researchers have developed the GUIs successfully, hybrid method (Throwaway with Agile) will be used, with at least two end-users (Pair Customer) involved when implementing the system, so they will have the ability to provide feedback on-site and the system will be amended accordingly to make sure that the quality of final product is high following the requirements of the system. On the other hand, the system can be implemented for different students in different institutions, so the result may differ based on the levels of the students.

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- *Mashal Alqudah is currently pursuing PHD program in Software engineering in University Kebangsaan Malaysia, Malaysia, PH-0060135857147. E-mail: mashal_alqudah@yahoo.com.*
- *Abdallah Abdulsalam is currently pursuing Bachelors degree program in Software engineering in Linton University College, Malaysia, PH-0060163565436. E-mail: aa_abdallah08@yahoo.com.*

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