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**A FUNCTIONAL REQUIREMENT MODEL OF E-LEARNING
SYSTEM IN SECONDARY SCHOOL IN DHI-QAR PROVINCE,
IRAQ**



**MASTER OF SCIENCE (INFORMATION TECHNOLOGY)
SCHOOL OF COMPUTING
UUM COLLEGE OF ARTS AND SCIENCES
UNIVERSITI UTARA MALAYSIA**

2016

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ABSTRAK

Pada hari ini, teknologi moden memudahkan program pembelajaran dan komunikasi di kalangan pelajar, guru, ibu bapa dan pihak pengurusan sekolah di institusi-institusi pendidikan. Selaras dengan perkembangan ini, keperluan pembelajaran elektronik yang sedia ada didapati tidak memenuhi keperluan semua pelajar institusi pendidikan dan ini adalah disebabkan oleh pelajar-pelajar yang mempunyai keperluan, matlamat, latar belakang, tahap pengetahuan dan keupayaan pembelajaran yang berbeza-beza antara satu sama lain. Tambahan pula, literatur sebelum ini juga mendedahkan beberapa kelemahan sistem persekitaran dalam talian semasa, termasuk kekurangan interaksi antara pengguna dan kesukaran dalam membantu kerja-kerja yang memerlukan kerjasama. Sebaliknya, persekitaran yang tidak stabil dan keadaan tidak selamat di Iraq kini menghadapi cabaran dimana ibu bapa diarahkan untuk mengelakkan menghantar anak-anak mereka ke sekolah. Selain itu, di beberapa bahagian Dhi-Qar, terdapat tiga buah sekolah yang beroperasi dalam satu bangunan pada masa yang berlainan dan terdapat menghadapi masalah kekangan bahan pembelajaran. Berhubung dengan model keperluan, terdapat kekurangan model keperluan untuk membangunkan sistem e-pembelajaran yang khusus untuk sekolah menengah. Sehubungan itu, kajian ini bertujuan untuk mencadangkan model keperluan dengan fungsi sistem e-pembelajaran untuk menghubungkan pihak berkepentingan atau pihak-pihak yang terlibat dalam proses pendidikan dalam persekitaran dalam talian. Data telah dikumpul melalui temu bual dan soal selidik. Keperluan pengguna telah diperolehi daripada kajian literatur dan temubual dengan pengguna. Kesemua maklumat kemudiannya telah diterjemahkan ke dalam prototaip, yang direka menggunakan platform sumber terbuka, Moodle. Akhir sekali, penerimaan dan penilaian kebolegunaan telah dijalankan dengan menggunakan kaedah soal selidik. Keputusan menunjukkan bahawa para peserta berpuas hati dengan keperluan yang dicadangkan, dan keperluan ini juga didapati memenuhi semua keperluan pihak berkepentingan. Oleh itu, model yang dicadangkan dalam kajian ini boleh digunakan untuk institusi pendidikan tertentu dan kawasan yang menghadapi konflik yang sama di kawasan lain untuk membantu melengkapkan kelas tradisional sedia ada.

Kata kunci: e-pembelajaran, model keperluan, wilayah Dhi-Qar, sekolah menengah

Abstract

Recently, the modern technology simplifies the learning programs and support communication among students, teachers, parents, and the managements of schools in educational institutions. With this development, the existing electronic learning requirements do not meet all students' or the educational institution's needs, due to the varying students' needs, goals, backgrounds, knowledge levels, and learning capabilities. Furthermore, prior literature also reveals some disadvantages of current online environment systems, including lack of interaction among users and difficulty of supporting co-operative work. On the other hand, the unstable environment and the insecure situation that Iraq currently faces prompts parents to avoid sending their children to school. In addition to that, in some parts of Dhi-Qar, there are three schools running in one building, operating at different times and there is a dearth of learning materials. With regard to requirement model, there is a lack of requirement model to develop the e-learning system specifically for the secondary school. In accordance to that, this study seeks to propose a functional requirement model of e-learning system to link the stakeholders or actors of the educational process in online environment. Data were collected through interviews and questionnaires. The user requirements were obtained from literature review and interview with users. They were translated into a prototype, which was designed using an open source platform, Moodle. Finally, acceptance and usability evaluation were conducted, using questionnaires. The results reveal that the participants are satisfied with the proposed requirements, and these requirements meet all the stakeholders' needs. Therefore, the model proposed in this study can be used for particular education institutions and other conflict areas to complement the existing traditional classrooms.

Keywords: e-learning, requirement model, Dhi-Qar Province, secondary school

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Raed Mohammed Hussein

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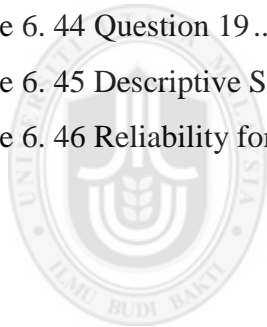
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List of Abbreviations

E-learning	Electronic learning
ICT	Information and Communication Technologies
E-LS	E-Learning System
Moodle	Modular Object- Oriented Dynamic Learning Environment
SDISR	Systems Development in Information Systems Research
UML	Unified Modeling Language
RE	Requirement Engineering
SDL	Specification and Description Language
KSS	knowledge sharing system
LMS	Learning Management System
FR	Functional Requirements
NFR	Non-Functional Requirements
SRS	Software Requirements Specification



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List of Appendixes

Appendix A: Official Letters

Appendix B: Interview's Questions

Appendix C: Acceptance Questionnaire

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Appendix E: Experts' Notes

Appendix F: Questionnaire for Expert review

Appendix G: Experts' Profile

Appendix H: Experts' Review Instrument



CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter explains the background of Iraqi pre-tertiary education system and the demand for electronic technologies for better delivery of teaching and learning experience. It thus forms then study's problem statement which borders on the need for e-learning system in Iraq generally and requirement-based e-learning systems specifically for its secondary schools. This highlights the research questions to be answered by this study, and its corresponding research objectives to be accomplished. Also discussed in this chapter is the significance of this study practically and theoretically, as well as the scope that delineates the boundary that the study covers.

1.1 Background

Requirement engineering ensures that the tool or system under design is in alliance with the standard requirements, and in line with the expected functions of the system. It is opined that a sound requirement engineering process is a requisite to a functional and usable system (Shams-UI-Arif et al., 2010). The requirement analysis of the previous studies on e-learning systems and available documentation, with users' study, will actualise an e-learning system that attends to the task needs of the users, which in this instance are Iraqi pre-tertiary students.

The requirements modeling plays a fundamental role in the Requirement Engineering (RE) process (Nuseibeh & Easterbrook, 2000) as it delivers a structured description of requirements that can be used throughout the requirements process and the rest of the software development processes. In addition, it is a main communication language

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