ONLINE PROJECT BASED COLLABORATIVE LEARNING MODEL TO ENHANCE STUDENTS' SOFT SKILLS

SHARIFAH NADIYAH BINTI RAZALI

DOCTOR OF PHILOSOPHY

2016

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Faculty of Information and Communication Technology

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SHARIFAH NADIYAH BINTI RAZALI

A thesis submitted
in fulfilment of the requirements for the degree of Doctor of Philosophy

Faculty of Information and Communication Technology

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2016

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DECLARATION

I declare that this thesis entitles Online Project Based Collaborative Learning Model to Enhance Students' Soft Skills is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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Date : 10 OCTOBER 2016

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APPROVAL

I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in term of scope and quality for the award of Doctor of Philosophy.

Signature : …….

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Date : 10 OCTOBER 2016

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DEDICATION

This project is dedicated to

my beloved husband, Mohd Hafiez Ahmad

for the sacrifices made and support offered;

my beloved parents, Hj Razali Lazim and Hjh Rahemah Abd Rahim

for their loves and bless;

my lovely kids Qistina Amani, Qeisha Amani and Muhammad Adam Rayyan

who are always giving me the strength.

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ABSTRACT

Collaborative Learning (CL) has been proven to promote soft skills and has widely implemented in teaching and learning. However, initial study found the lack of soft skills issue among Malaysian Polytechnic graduates causing the students to face unemployment. Therefore, the purpose of this study is to evaluate the effectiveness of Online Project Based Collaborative Learning (OPBCL) model in enhancing students' soft skills. This study involves both qualitative and quantitative methods. This study has been divided into three phases which are (i) Analysis; (ii) Design and Development; and (iii) Implementation and Evaluation. In the analysis phase, all factors and elements that affect the effectiveness of Online Collaborative Learning (OCL) were identified through document review and validated by experts. At the end of this phases, an OCL model was proposed. In the design and development phase, OPBCL was designed and developed based on the proposed model. Besides that, three testing instruments were developed to assess the effectiveness of OPBCL which are (i) Pre and Post Soft Skill Test (SST), (ii) Collaborative Learning Rubric (CLR) and (iii) Perception of Online Collaborative Learning Questionnaire (POCLQ). Pilot study was conducted in order to ensure that all the instruments are valid and reliable. Finally, pre and post-test with non-equivalent control group design were used in implementation and evaluation phase which involves 106 respondents from Malaysian Polytechnic. The respondents were divided into three groups called Control, Treatment I and Treatment II group where their soft skills are assessed for comparison between traditional project based learning method (Control), online project based learning using CIDOS platform (Treatment I) and online project based learning using OPBCL platform (Treatment II). All collected data were analysed using SPSS 19.0 software. Findings from the pre and post soft skill indicated that all groups had positive effects on the soft skills of the students but in terms of the more successful group, the results showed that Treatment II is more success than Control group followed by Treatment I group. In addition, findings on the pre and post soft skills test of the critical thinking and problem solving (CTPS), collaboration (CS) and communication (CM) skills showed that for CTSP skill, Treatment II is more success than Control group followed by Treatment I group. For CS skill, there is no significant differences between Treatment I and Treatment II group. However, both treatment groups are more success than Control group. For CM skill, there is no significant differences between Control and Treatment II group. However, both Control and Treatment II groups are more success than Treatment I group. In conclusion, the proposed OPBCL model has shown an enhancement in students' soft skills.

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ABSTRAK

Pembelajaran Kolaboratif (PK) telah terbukti berkesan dalam membangunkan kemahiran insaniah dan telah dilaksanakan secara meluas dalam proses pengajaran dan pembelajaran. Namun, kajian awal mendapati graduan Politeknik Malaysia kurang kemahiran insaniah mengakibatkan mereka menganggur. Oleh itu, kajian ini bertujuan untuk menilai keberkesanan model Online Project Based Collaborative Learning (OPBCL) dalam meningkatkan kemahiran insaniah pelajar. Kajian ini melibatkan kaedah kualitatif dan kuantitatif. Reka bentuk kajian terbahagi kepada tiga fasa iaitu (i) analisis; (ii) reka bentuk dan pembangunan; dan (iii) implementasi dan penilaian. Dalam fasa analisis, semua faktor dan elemen yang memberi kesan terhadap keberkesanan Pembelajaran Kolaboratif atas talian (OCL) dikenal pasti melalui semakan dokumen dan validasi pakar. Di akhir fasa ini, satu model OCL dicadangkan. Dalam fasa reka bentuk dan pembangunan, OPBCL telah direka bentuk dan dibangunkan berdasarkan model cadangan. Selain itu, tiga instrumen ujian turut dibangunkan bagi menilai keberkesanan OPBCL iaitu (i) Ujian Kemahiran Insaniah pra dan pos (SST); (ii) Rubrik Pembelajaran Kolaboratif (CLR); dan (iii) Soal Selidik Persepsi bagi Pembelajaran Kolaboratif atas Talian (POCLQ). Kajian rintis telah dijalankan untuk memastikan semua instrumen adalah sah dan boleh dipercayai. Akhirnya, ujian pra dan ujian pos dengan reka bentuk kumpulan kawalan telah digunakan dalam fasa implementasi dan penilaian yang melibatkan 106 responden dari Politeknik Malaysia. Responden dibahagi kepada tiga kumpulan yang dinamakan kumpulan Kawalan, Rawatan I dan Rawatan II di mana kemahiran insaniah mereka dinilai bagi membandingkan kaedah tradisional projek berasaskan pembelajaran (Kawalan), pembelajaran berasaskan projek dalam talian menggunakan platform CIDOS (Rawatan I), dan pembelajaran berasaskan projek dalam talian menggunakan platform OPBCL (Rawatan II). Perisian SPSS 19.0 digunakan untuk menganalisa semua data yang diperolehi. Dapatan ujian kemahiran insaniah sebelum dan selepas menunjukkan kesemua kumpulan mempunyai kesan positif terhadap kemahiran insaniah pelajar tetapi dari segi peningkatan menunjukkan kumpulan Rawatan II adalah lebih berjaya daripada kumpulan Kawalan diikuti oleh kumpulan Rawatan I. Di samping itu, analisa ujian kemahiran pra dan pasca ke atas kemahiran pemikiran kritis dan penyelesaian masalah (CTPS), kolaborasi (CS) dan komunikasi (CM) menunjukkan bahawa bagi kemahiran CTPS, kumpulan Rawatan II adalah lebih berjaya daripada kumpulan Kawalan diikuti oleh kumpulan Rawatan I. Bagi kemahiran CS, tidak ada perbezaan yang signifikan antara kumpulan Rawatan I dan Rawatan II. Walau bagaimanapun, kedua-dua kumpulan rawatan adalah lebih berjaya daripada Kumpulan Kawalan. Untuk kemahiran CM, tidak terdapat perbezaan yang signifikan di antara kumpulan Kawalan dan Rawatan II. Walau bagaimanapun, kedua-dua Kawalan dan Rawatan II kumpulan adalah lebih berjaya daripada Kumpulan Rawatan I. Kesimpulannya, model OPBCL yang dicadangkan dapat menunjukkan peningkatan dalam kemahiran insaniah pelajar.

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ACKNOWLEDGEMENTS

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

First and foremost, I would like to express my deepest gratitude and appreciation to my supervisors, Professor Dr. Faaizah Shahbodin, Professor Madya Dr. Norasiken Bakar and Professor Dr. Hanipah Hussin for their invaluable personal and professional guidance. Their wealth of knowledge, advice, and encouragement has made my doctoral endeavour possible.

My special thanks to Dr. Azman Hasan (UTHM), Dr. Jamil Abd Baser (UTHM), Dr. Gede Pramudya Ananta (UTeM), Dr. Saiyidi Mat Roni (UiTM), and Tarisa Makina (UTeM) for their professional advice and encouragement to keep up the momentum to conclude my doctoral journey. My appreciation also goes to many of my friends and colleagues, in particular, Aspalilla Main, Che Ku Nuraini Che Ku Mohd, Kyrina Airin Fariza Abu Samah, Maria Mohamad, Muhammad Helmi Abu Bakar, Rosnani Affendi and Sharifah Nurul Huda Tuan Yassin for their valuable input and help.

Special thanks to Ministry of Higher Education and Community College for the scholarship throughout this study. Particularly, I would also like to express my deepest gratitude to Department of Polytechnic Education for allowing the study to be conducted in several Polytechnic. Many thanks to the top management, lecturers and diploma students from Politeknik Merlimau Melaka, Politeknik Ibrahim Sultan, Politeknik Kota Kinabalu,

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Politeknik Syed Sirajudin and Politeknik Sultan Idris Shah for their assistance and cooperation.

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LIST OF ABBREVIATIONS

MOHE	Ministry of Higher Education
HEI	Higher Education Institution
DPE	Department of Polytechnic Education
CL	Collaborative Learning
PjBL	Project Based Learning
OCL	Online Collaborative Learning
OPBCL	Online Project Based Collaborative Learning
LMS	Learning Management System
SNSs	Social Networking Sites
SST	Soft Skills Test
CLR	Collaborative Learning Rubric
POCLQ	Perception of Online Collaborative Learning Questionnaire
CIDOS	Curriculum Information Document Online System
Moodle	Modular Object Oriented Development Learning Environment
SDE	System Developer Expert
SME	Subject Matter Expert
OCLE	Online Collaborative Learning Expert
CTPS	Critical Thinking and Problem Solving Skill
CS	Collaboration Skill
CM	Communication Skill

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