Web-based English Competency Assessment and Placement System for Faculty Communication and Modern Languages

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Web-based English Competency Assessment and Placement System for Faculty Communication and Modern Languages

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ABSTRACT

English is a dominant world language with second largest speaking population after mother tongue. Choosing study English as a second language is a wise choice at these globally competitive times. English brings people from various nationalities towards international communication. It's key to speak to the world. The goal of this research project is to "design a web-based English competency evaluation and regulation for Faculty of Communication and Modern Languages (or FKBM, its Malay short form)"- that can support new students to overcome their English language proficiency and help to FKBM to estimate students' level of English competency and allocate relevant course for registration.

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LIST OF ABBREVIATION

FKBM Fakulti Komunikasi Bahasa Moden

UUM Universiti Utara Malaysia

ICT information and Communication Technology

WBEC Web-based English Competency System

WWW World Wide Web

ARPA Advanced Research Projects Agency

POP Post Office Protocol

ISP Internet Service provider

HTML HyperText Markup Language

URL Universal Resource Locator

URI Universal Resource Identifier

WYSWYG What You See What You Get

FTP File Transfer Protocol

HTTP HyperText Terminal Protocol

TCP/IP Transmission Control Protocol

CGI Common Gateway Interface

CCG Common Client Gateway

MIME Multipurpose Internet Mail Extensions

DOM Document Object Model

DBMS Database Management System

SDLC System Development Life Cycle

RAD Rapid Application Development

UML Unified Modeling language

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The Faculty Komunikasi dan Bahasa Moden FKBM is the first faculty to be established when University Utara Malaysia (UUM) carried out an academic restructuring exercise on reaching the second decade of its establishment. The history of the establishment of the faculty began on 9 July 2002 when the Ministry of Education approved the setting up of the School of Communication and Media Technology, which had been proposed under the communication programmer of the School of Social Development. However, as a result of the academic restructuring and globalization, the school was integrated with the Language Division of the school of Cognitive Sciences and Education to form the Faculty of Communication and Modern Languages on 1st April 2003. The faculty is made up of three main department, Communication, Media technology, and Modern Languages. The main platform for the elevation of the Malay language, the enhancement of students' mastery of English and the acquisition of other international languages such as Arabic, Thai, Japanese, Mandarin, German, Spanish, Italian, Korean and French. (Academic guide book UUM, 2007).

English Language Department is highly expected to help produce high quality graduates with ability for self-development, and communication skills to obtain a

The contents of the thesis is for internal user only

REFERENCE

- Alexander, (1997). Educational Climates. In Educational Environments and Effects: Valuation, Policy, and Productivity. New York: Prentice Hall.
- Bahrami. (1999). Software Usability Model and Product Evaluation. United Kingdom: Addison Wesley Longman.
- Clary, B. (2001). *Introduction to Web Applications, Some thoughts on Web Application Development*. Retrieved 8/7/2007 from http://devedgetemp.mozilla.org/viewsource/2001/web-applications/
- Del, A. (2004). Service oriented web application. Retrieved 10/6/2007 from http://www.sun.com
- Hoffer, J. A., George, J. F & Valacich, J. S. (1999). *Modern Systems Analysis and Design* (2nd Edition). United Kingdom: Addison Wesley Longman.
- Holcomb, R & Tharp, A. (1991). "Users, a Software Usability Model and Product Evaluation", Interacting with Computers. United Kingdom: Oxford.
- Jokela et al. (2000). *Modeling Usability Capability: Introducing the Dimension*. Bomarious, F. & Oivo, M. (eds). California: McGraw Hill.
- Kerner, S. M (2006). *Is PHP The Cure For The 'Broken' Web?*. Retrieved 13 September 2007 from http://internetnews.com.
- Lieslehto, K. (2000). Educational Benefit of Online Learning, Proceedings of the 2000 IEEE International, Symposium of Computer-Aided Control System Design. USA: Alaska.
- Linn, M. C. and Burbules, N. C. (1993): Construction of Knowledge and Group Learning. The Practice of Constructivism in Science Education, TOBIN, K. (ed.). Washington DC: American Association for the Advancement of Science.
- Ng, A. H. (1998, December): Asian Business Students: Influence Of Self-Efficacy and Fear on Learning Approaches. *Paper Presented at the Australia New Zealand Association of Management Conference*. Australia: Adelaide.
- Nielsen, J. (1994). Scenarios in Discount Usability Engineering. Envisioning work and Technology. Book under preparation. Netherlands: Amsterdam.
- Nielsen, J. & Landauer, T. (1993). A Mathematical Model of The Finding Of Usability problems. In ACM INTERCHI'93. Netherlands: Amsterdam.
- Lynch, P. (2004). A Guidelines to Design a Web Page. Canada: Wrox Press. Patokorpi, E. (2004). Design of a Mobile Guide for Educational Purposes, Conference'06 New York: ACM Press.

- Ramsay, M. & Nielsen, J. (2000). WAP Usability: 1994 All Over Again. Retrieved 30 August 2007 from http://www.useit.com
- Ravden, S. & Johnson, G. (1989). Evaluating Usability of Human Computer Interfaces: A Practical Method. UK: Ellis Horwood Ltd., Chichester.
- Reiven. (2006). Advantages Importance and Implementation Plug-Ins. California: Osborne McGraw Hill.
- Schmitt. (2006). Engaging a Rich Web Experience. Greenwich: Manning Publications Co.
- Tetard, F.& Patokorpi, E. (2004). Design of a Mobile Guide for Educational Purposes, Conference '04. New York: ACM Press.
- Turkle, S. and Papert, S. (1990): Epistemological Pluralism; Styles And Voices Within The Computer Culture. *Journal of Women in Culture and Socity*. 16(1); 128-157.
- Vaishnavi & Kuechler (2002). WAP Usability. United Kingdom: Addison Wesley Longman.
- Valacich, J. S., George, J. M. & Hoffer, J. A. (2004). Essential of System Analysis and Design. London: Prentice Hall.
- _____. (2006). *UUM Academic Guide Book 2006/2007*. Kedah: Academic Affairs Department UUM.
- ARPA (2005). Advanced Research Projects Agency (ARPA). Retrieved September 10, 2007 from http://en.www.wiki.org
- Rubin, J. (2004). Handbook of usability testing: how to plan, design and conduct effective tests. Jhon Wiley & Sons