

ONLINE EDUCATION MANAGEMENT INFORMATION SYSTEM
(OEMIS): A CASE STUDY FOR PRIMARY SCHOOLS IN IRAQ

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ONLINE EDUCATION MANAGEMENT INFORMATION SYSTEM (OEMIS):
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ABSTRACT

An Online Education Management Information System (OEMIS) is a structured scheduled and managed system for the collect, process and retrieves information about the three main components: school profile, Student Enrolment and Staff information. It also provides all the statistical data, reports, queries and dissemination of information needed to support the key activities and decision-makers in the Ministry of Education, Directorates and schools. These include but not limited to: data about the number of teachers for a specific course in a school, a province, in the whole of the country or the number of students passing or repeaters for one school or more. This study will identify the requirement model and proposed design of a web based educational management information system (OEMIS) for primary schools in Ministry of Education of Iraq.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

According to (Bodo, 2006), Information and Communication Technologies (ICTs) consists of software, hardware, networks, and media for storage, collection, processing, transmission, and presentation of information (voice, text, and images), Over the last few years, the use of ICTs in all sectors of education has increased significantly. Education is one of the most important components in creating knowledge societies, prosperity and economic growth. It is not only the means by which individuals become skilled participants in economy and society; it is also one of the key factors in the expansion of the use of ICT. One of the reasons for the evolution of the widespread use of information and communication technology in the context of education systems is to address structural problems and deficits in education systems to enhance the administrative efficiency (Farrell and Wachholz, 2003).

This study identified requirements and proposed design of an Online educational management information system (OEMIS) for primary schools in Ministry of Education of Iraq, where this system is a structured scheduled, and managed system for the collect, process, and store and retrieve information about the three

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REFERENCES

- Ahitue, N., & Neumann, S. (1986). *Principles of information systems for management* (2nd ed.). Dubuque, IA: Wm. C. Brown.
- Ali, N. H., Shukur, Z., & Idris, S. (2007). A Design of an Assessment System for UML Class Diagram. *Proceedings of 5th International Conference Computational Science and its Applications*, [Kuala Lumpur](pp.539-546). Los Alamitos: IEEE Computer Society.
- Bennett, S., McRobb, S., & Farmer, R. (2005). *Object Oriented System Analysis and Design Using UML* (3rd ed.). Berkshire: McGraw-Hill Companies.
- Bodo, S. (2006). *Integrating Education Management Information Systems in National Information & Communication Technology Policies* [Online]. Harare: NESIS/UNESCO. Retrieved November 21, 2010, from http://nesis.intoweb.co.za/en/index.php?module=documents&JAS_DocumentManager_op=downloadFile&JAS_File_id=57
- Davis, G. B. (1974). *Management Information Systems: conceptual foundations, structure, and development*. New York, NY: McGraw-Hill.
- Dennis, A., Wixom, B. H., & Tegarden, D. (2001). *Systems Analysis and Design: An Object-Oriented Approach with UML*. New York: John Wiley.
- EPRD. (1995). *EMIS study Attachment study report to the Ministry of Education Singapore*. Kuala Lumpur: EPRD.

- EPRD. (1997). *Short answer to frequently asked questions about the development of Education Management Information System (EMIS) for the educational sector in Malaysia*. Kuala Lumpur: EPRD.
- Farrell, G., & Wachholz, C. (2003). *Meta-survey on the use of technologies in education in Asia and Pacific*. Bangkok: UNESCO.
- Grady, J. O. (1993). *System Requirements Analysis*. New York: McGraw-Hill.
- Holzinger, A. (2005). Usability engineering methods for software developers. *Journal of Management Information Systems*, 48(1), 71-74.
- Ibrahim, b. A. (2005). Education Management Information System (EMIS): requirements engineering towards a web-based system. Unpublished master's thesis, University Utara Malaysia, Kuala Lumpur.
- Kasser, J. E., (2004).The First Requirements Elucidator Demonstration (FRED) Tool. *Journal of the International Council on Systems Engineering*, 7(3), 233-246.
- Lassila, K. S., & Borton, J. D. (1998). Managing Information Technology for Performance: Information Systems Education for Executives. *Proceedings of the 13th Annual Conference of the International Academy for Information Management*, [Helsinki](pp.125-138).
- Laudon, K. C., & Laudon, J. P. (2003). *Management Information Systems: Managing the Digital*. Upper Saddle River, NJ: Prentice Hall.

- Lin, H. X., Choong, Y. Y., & Salvendy, G. (1997). A Proposed Index of Usability: *a Method for Comparing the Relative Usability of Different Software Systems*. *Journal of Behaviour and Information Technology*, 16(4), 267-278.
- Lund, A. M. (2001). Measuring Usability with the USE Questionnaire [Online]. *Usability Interface*, 8(2). Retrieved November 29, 2010, from http://www.stcsig.org/usability/newsletter/0110_measuring_with_use.html
- Mehta, A. C. (2006). *EMIS and Educational Statistics for the officers of Republic of Iraq*. Amman: UNESCO.
- McNurlin, B. C., & Sprague, J. R. (2004). *Information Systems Management in Practice* (6th ed.). New Jersey: Prentice Hall International.
- Nielson, J. (2006). *Quantitative Studies: How many users to test Alert box*. Retrieved July 03, 2010, from http://www.useit.com/alertbox/quantitative_testing.html.
- Nolan, C. J., Ayres, D. A., Dunn, S., & McKinnon, D. H. (1996). Implementing Computerised School Information Systems. *International Journal of Educational Research*, 25(4), 335-350.
- Pressman, R. S. (2010). *Software Engineering: A Practitioner's Approach* (7th ed.). New York: McGraw-Hill.
- Sarwani, M. W. (2003). The Knowledge and Perspectives about Educational Management Information System (EMIS/SMPP) of Decision-Makers in the Malaysian Ministry of Education (MMOE): An Inquiry into the

Implementation of an EMIS. Unpublished PhD's Dissertation, University of Warwick, Coventry.

Schmuller, J. (2002). *SAMS Teach Yourself UML in 24 Hours* (2nd ed.). Indiana: SAMS Publishing.

Stone, M. (2003). Substantive scale construction. *Journal of Applied Measurement*, 4(3), 282-297.

Sultana, R. G. (2002). *The educational management and information system of the United Arab Emirates: The way forward*. Beirut: UNESCO.

UNESCO. (2004). *Iraq education in transition: needs and challenges*. Paris: UNESCO.

Vaishnavi, V., & Kuechler, B. (2004). *Design Research in information system*. Retrieved November 02, 2010, from <http://desrist.org/design-research-in-information-systems/>

Villanueva, C. (1990). *EMIS in the Philippines*. Bangkok: UNESCO.

Visscher, A. J., & Spuck, D. W. (1991). Computer Assisted School Administration and Management: The State of the Arts in Seven Nations. *Journal of Research on Computing in Education*, 24(1), 146-168.

Watson, R., Kelly, G., Galliers, R., & Brancheau, J. (1997). Key issues in information systems management: an international perspective. *Journal of Management Information Systems*, 13(4), 91-116.

Wood, A. T. (1985). *Information systems definition: the multi view approach*.
Oxford: Blackwell Scientific.