REQUIREMENTS FOR ESTABLISHING SMART SCHOOL SYSTEM IN ALGERIA BASED ON MALAYSIAN SMART SCHOOL

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ABSTRACT

This project was proposed to identify the needed requirements for adoption of Smart School System in Algeria based on Malaysian Smart School. This study was conducted to seek the current weaknesses and the requirements. It proposes a feasible model to adopt this system. The methodology has been adapted from the method of Magliaro and Eziefe which consist of both qualitative and quantitative study. The results have been sought by questionnaire and literature review, which helped to identify the weaknesses and requirements to carry out this adoption in Algeria. The requirements have been achieved can motivate the Algerian government to launch an effective strategy, and to create a base on which future studies on the ICT integration into the Algerian educational system can be built. In addition the decision makers enable to apply this study for preparing the policy on using ICT to develop the educational sector in Algeria.

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TABLE OF CONTENTS

PERMISSION OF USE I
ABSTRACT II
ACKNOWLEDGE III
TABLE OF CONTENTS IV
LIST OF TABLES VI
LIST OF ABBREVIATION VII
CHAPTER ONE: INTRODUCTION 1
1.1 Introduction 1
1.2 Problems Statement 2
1.3 Research Questions 4
1.4 Research Objectives 4
1.5 Scope and Limitation of Study 4
1.6 The Significance of Study 5
1.7 Organization of report 5
CHAPTER TWO: LITERATURE REVIEW
2.1 Introduction 7
2.2 Profile of Algeria 7
2.3 Education in Algeria 8
2.3.1 Educational System in Algeria 8
2.3.2 Special Education 9
2.3.3 Mass Schooling and Demographic Issues in Algeria 10
2.4 ICT in Algerian 12
2.4.1 Overview on ICT in Algeria 13
2.4.2 Algerian organizations in ICT Sector 14
2.4.3 ICT and Education in Algeria 16
2.4.4 Training professionals on teaching and usage of ICT 17
2.5 Malaysia Smart School 18
2.5.1 The main goals of Malaysia Smart School 19
2.5.2 The Integrated Strategies for Achieving the Goals of Smart School 20
2.5.3 Implementation of Malaysia Smart School 20
2.5.4 The Components of Malaysia Smart School 21
2.5.5 Features of Malaysian Smart School System 22
2.5.6 ICT Use in Malaysian Smart Schools 29
2.5.7 The Management of Smart School 31
2.6 Smart School System in some of other countries 32
2.6.1 Irish initiative 32
2.6.1.1 The objectives of Irish Smart School Strategy 33
2.6.2 New Zealand initiative 33
2.6.2 Other countries initiatives 34
2.7 Comparison between Smart School System in Malaysia and other countries 35
2.8 Previous Study on Contribution of Smart Schools System 36

2.9 Summary 39

CHAPTER THREE: RESEARCH METHODOLOGY
3.1 Introduction 40
3.2 Specification of Problems 41
3.3 Identification study sampling 43
3.4 Data Collection 45
3.5 Data Analysis 46
3.6 Model Construction 47
3.7 Summary 48
CHAPTER FOUR: DATA ANALYSIS AND FINDINGS
4.1 Introduction 49
4.2 Profiles of Respondents 49
4.3 Reliability of Measurements 51
4.4 Descriptive Statistics 53
4.4.1 Variables selected 53
4.4.2 Smart school adoption in Algeria 54
4.5 Pearson Correlation and relationship between variables 54
4.6 Findings 56
4.7 Summary 60
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS
5.1 Introduction 62
5.2 Summary of study 62
5.3 Contribution 68
5.4 Limitation of Research 68
5.5 Conclusion and Recommendations 69
References 73
Appendix 78

LIST OF TABLES

Table 1.1	ICT in Algeria	3
Table 2.1	Statistics about education in Algeria	10
Table 2.2	Trends in School Enrolment Ratios from 1948 to 1998	10
Table 2.3	Number of Students in Primary and Middle Schools in Algeria	11
Table 2.4	Number of Class Rooms in Primary and Middle Schools in Algeria	11
Table 2.5	Students per Classroom in Primary and Middle Schools in Algeria	11
Table 2.6	Profile about ICT Policies in Algeria	12
Table 2.7	Some ICT organizations in Algeria	15
Table 2.8	Using of ICT in Algeria	16
Table 2.9	Factors influencing ICT Adoption	18
Table2.10	Malaysia Smart School Strategies	20
Table 2.11	Committees of Organizational Structure of Smart School Curriculum	23
Table 2.12	Some significant gaps in New Malaysia, Zealand and Ireland smart school initiative, and others countries	35
Table 2.13	Previous studies in Smart School field	37
Table 4.1	Profile of Respondents	50
Table 4.2	Results of Reliability Test	52
Table 4.3	Descriptive Statistics	53
Table 4.4	Correlations between Variables	55

LIST OF FIGURES

Figure 2.1	The telecoms integration steps in Algeria	12
Figure 3.1	Jelena & Anthony's Methodology model	42
Figure 3.2	Methodology used in this Study (adapted from (Magliaro & Ezeife, 2007).)	42
Figure 3.3	Formula of determination of the sample size	43
Figure 3.4	The formula SS after correction	44
Figure 4.1	Demographic Data	51
Figure 5.1	The Proposed Implementation Model for Algerian Smart School System	67

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The use of Information and Communication Technology (ICT) has changed communication style between the people, whether it is in teaching/learning process, or in their nature of work. There is no doubt that the integration of ICT infrastructure in the society is needed more than before (Khenak, 2010), especially in the educational systems domain, where it became one of the pillars of teaching/learning process in the developed and some of the developing countries. Algeria is one of the developing countries. The governments have believed that they cannot ignore the role that ICT plays in the community. This matter summoned to take into account the Algerian education policies and systems to develop them in ICT fields.

Developed countries and some advanced developing countries have made quantum leaps in the field of using the ICT in education (Hashmi, 2009). Malaysia is one of the examples that use ICT tools in the education process. The government takes it as one of the parts of its development strategy that is called Vision 2020 (Wawasan, 2020). One of the mega ICT projects in the country is Malaysian smart school. It comes from their belief that ICT is the key to make learning enable to impart on all segments of society (MSC, 2005). Thus, this experience that Malaysia got in the education development, especially the smart schools system may be a suitable model that can be applied to the educational reforms in Algeria. Therefore, this study has focused on the Malaysian smart

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References

Aminah, A. (2005). Reform the Educational System in Algeria (in Arabic). Retrieved July 14, 2010, from http://www.elaph.com/ElaphWeb/Reports/2005/9/88983.htm

Amr, H. (2007). ICT in Education in Algeria Retrieved July 28, 2010, from http://www.infodev.org/en/Document.384.pdf

Arab. (1999). Algeria. Retrieved June 22, 2010, from http://www.arab.de/arabinfo/algeria.htm

Azian Abdullah. (2006). Deconstructing Secondary Education: The Malaysian Smart School Initiative. *Paper presented at 10th SEMEO INNOTHEC International confrence*. Quezon City, Philippines.

Balkisnah, S., & Norhasni, Z. A. (2009). Reviewing the Implementation of the Smart Schools and the Training of Bestari Teachers in Malaysia. *The Journal of International Social Research*, 573, 567-574.

Bee, T. L., & Chia, H. S. (2008). Exploring the Extent Of ICT Adoption among Secondary School Teachers in Malaysia. *International Journal of Computing and ICT Research* , 19, 19-36.

Bohafsi, H. (2008). System of Education and the Labor Market (Algeria as Case Study) (in Arabic). *Paper presented at Second Conference for the planning and development of education and scientific research in Arab countries*. Al-Dahran. Kingdom of Saudi Arabia.

Carmines, E. G. & Zeller, R. A. (1979) *Reliability and validity assessment*, Beverly Hills/London: Sage Publications.

Chan, F. (2002). ICT IN Malaysian Schools: Policy and Strategies. *Paper presented at Seminar/Workshop on the Promotion of ICT Education to Narrow the Digital Divide*. Tokyo, Japan.

CERIST. (2009). *CERIST.* Retrieved September 3, 2010, from http://www.cerist.dz/?fc=historique

Congress, l. (2008). *COUNTRY PROFILE: ALGERIA.* Washington : Library of Congress – Federal Research Division, USA.

David, S. (2004). *Survival Statistics.* Bloomington US: StatPac, Inc.

Eng-Tek, O., & Rothven, K. (2009). The Effectiveness of Smart Schooling on Students' Attitudes towards Science. *Eurasia Journal of Mathematics, Sience & Technology Education, 36*, 35-45.

Frost, & Solivan. (2002). *Benchmarking of the Smart School Integrated Solution.* Kuala Lampur: Ministry of Education, Malaysia & Multimedia Development Corporation, Malaysia .

Genser, Philip J, C., Yazdanbakhsh, M., & Mauricio L, B. (2007). A guide to modern statistical analysis of immunological data. Retrieved September 5, 2010, from http://www.ncbi.nlm.nih.gov/pubmed/17963513

Government, Malaysia. (1997). Concept RFP for Smart School Management. Retrieved June 26, 2010, from http://www.moe.edu.my:8080/c/document_library/

Hashmi, O. (2009). Role of the Teacher in Light of Information and Communication Technology. Retrieved July 20, 2010, from http://ara.cndp-dz.org/modules/news/article.php?storyid=27

Hepp, K. (2003). Critical Factors for ICT in Education Policy in Developing Countries. *Conference on Information Technology: Research and Education,* 501-505. Temuco, Chile: IEEE.

Internews. (2009). Introduction/Brief History of Media Laws and Legislation . Retrieved September 5, 2010, from http://www.internews.org/regions/mena/amr/algeria.pdf

Jean, G. (2008). Provence Promotion "See me We 4" tells... (in French) Retrieved September 6, 2010, from http://www.investinprovence.com/download/seemeewee4fr.pdf

John, B., & Jimes, V. K. (2000). *Research in education* . Boston, US: Allyn an Bacan.

Khaled, T. (2010). Eight Million Students Enrolled in this Study Seats Monday (in Arabic). Retrieved September 9, 2010, from http://www.ennaharonline.com/ar/national/67438.html

Khenak, F. (2010). Algerian V-Learning Network . *17th International Conference on Telecommunications*, 673-679. Doha, Qatar : IEEE.

Lee K, W., Thang, S. (2010). A Critical Discourse Analysis of the Malaysian Smart Schools (MSS). *The International Journal of Language Society and Culture* , 142, 142-154.

Lucia, Q. S. (2009). United Nation Educational Scientific and Cultural Organization. Retrieved 6 6, 2010, from www.unescobkk.org/fileadmin/user_upload/2A1_Lucia.pdf

Mahani,Wahab., Kaur, K. Understanding of the Need for a Digital School Resource Center in Malaysian Smart Schools' . Retrieved October 01, 2010, from http://eprints.um.edu.my/295/

Magliaro, J., Ezeife, A, N. (2007). Pre-service Teachers' Preparedness to Integrate Computer Technology into the Curriculum. *Canadian Journal of Learning and Technology.* Retrieved June 12, from http://www.cjlt.ca/index.php/cjlt/article/view/163/153

Marczyk, David, D., & David, F. (2005). *Essentials of Research Design and Methodology.* New Jersey, US: John Wiley & Sons.

Mbendi. (2010). Telecommunications in Algeria. Retrieved September 1, 2010, from http://www.mbendi.com/indy/cotl/tlcm/af/al/p0005.htm

Mohammed, M. (2006). Algeria: Operation Family - Many Homes Awaiting PC (in French).Retrieved June 24, 2010, from http://algerie.actudz.com/article1111.html

Mohand, O. (2009). Algerian Schools Launch Sweeping IT Education Plan. Retrieved June 24, 2010, from http://www.magharebia.com/cocoon/awi/xhtml1/en_GB/features/awi/features/2009/01/23/feature-02

MSC, Malaysia. (2005). Smart School Roadmap. Retrieved September 1, 2010, from www.mscmalaysia.my/codenavia/portals/msc/images/pdf/ss-roadmap.pdf

Nazim, F. (2006). American Company Novell to Take Part in "PC for Every Family" project. Retrieved June 22, 2010, from http://www.magharebia.com/cocoon/awi/xhtml1/en_GB/features/awi/features/2006/01/24/feature-01

Norshuhada, S., Shahidan, H. (2010). *Design Rsearch in Software Development.* Kedah, Malaysia: Penerbit UUM.

Noticiasdot. (2009). AISI-Connect National ICT Profile. Retrieved September 6, 2010, from http://banners.noticiasdot.com/termometro/boletines/docs/consultoras/aisi/2000/ aisi_argelia.pdf

Ong, T., Ruthven, K. (2005). The Effectiveness of Smart Schooling on students' Attitudes towards Science. *Eurasia Journal of Mathematics, Science and Education*, 35, 35-45.

Perry, E. (2007). Investing in School Management (Best Practices in School Management). *Paper presented at the Smart School International Conference*, Kuala Lumpur, Malaysia.

Ray, O. (1997). Schools IT 2000 . Retrieved September 6, 2010, from http://www.iol.ie/~aidancbs/it2000/it2000.htm

Rohana, A. R. (2009). E-Learning Initiatives in Malaysian Schools. Retrieved September 6, 2010, from http://www.gauge.u-gakugei.ac.jp/apeid/apeid04/country_papers/malaysia.pdf

Sekaran. (2000). *Research Methods for Business:* A Skill Building Approach, *3th Edition.* New York, US: John Wiley & Sons, Inc.

Simone, E., & Hocine, K. (2006). People's Democratic Republic of Algeria. Retrieved September 01, 2010 , from http://www.portal.unesco.org/education/.../11998887155Algeria.pdf/Algeria.pdf

Smart School Project team, Malaysia. (1997). The Malaysian Smart School A Conceptual blueprint An MSC Flagship Application. Retrieved September 1, 2010, from http://www.mscmalaysia.my/codenavia/portals/msc/images/pdf/ss-blueprint.pdf

SWAN. (2010). Satlinker. Retrieved September 6, 2010, from http://www.swan-informatique.com/en/pageLibre000105bd.html

Thang, S. M., Puvaneswary, M., Lee, K., Hazita, A., Tan, L., Yean., et al. (2010). Grappling with teclmology: A case of supporting Malaysian Smart School teachers' professional development. *Australasian Journal of Educational Technology*, 400, 400-416.

UNISCO. (2006). Principe et objectives genereaux de l'education. Retrieved September 5, 2010, from http://www.ibe.unesco.org/fileadmin/user_upload/archive/Countries/WDE/2006/ARAB_STATES/Algeria/Algeria.pdf

Wikipedia. (2010). EEPAD. Retrieved September 6, 2010, from http://fr.wikipedia.org/wiki/EEPAD

Yen, N, L., Kamariah, A., Rozalin, S., Luan, W, S., & Petri, Z. M. (2005). Self-Regulated Learning in Malaysian Smart Schools: The Environmental and Personal Determinants. Retrieved September 13, 2010, from http://eprints.usm.my/

Zamrus, B. A., Rahman ., Mokelas B, A. (1999). *Curriculum Planning, Development.* New Delhi, India: International Bureau of Education and Central Board of Secondary Education, India.

Zikmund,W.G.(2003) *Business Research Methods* 3rd Edition, Fort Worth: Harcourt College Publishers. USA.