Assessment of School Information System Utilization in the UAE Primary Schools

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Abstract

This paper presents an assessment of School Information Systems (SIS) Utilization in the United Arab Emirates' (UAE) primary schools through a holistic descriptive approach that involves explaining, studying and analyzing the current technical status of the schools' SIS. To do so, the researchers used a series of case studies (documents analysis, questionnaires and interviews) of a number of primary schools representing the educational zones of the UAE to acquire an understanding of SIS level of utilization. According to the research results, the majority of primary schools have computerized their administrative activities at different levels via the Ministry of Education's suggested system or individually procured systems. Though, the use of Information and Communication Technologies, including SIS, is in its initial stage despite the adopted strategy by the UAE government to accelerate the effective utilization of educational management and automation technologies in the educational institutions and the Ministry of Education itself.

Keywords: Information Technology in Education Management (ITEM), Information & Communication Technologies (ICT), School Information Systems (SIS), The United Arab Emirates (UAE), Information Systems Utilisation and Primary Schools.

Introduction

Information Technology in Education Management (ITEM) was initially introduced to keep student records and to control school finances (Fung, Visscher, Barta, & Theater, 1997). The concept of ITEM first appeared under different acronyms like Computer-Assisted School Administration (CASA), School Information Management Systems (SIMS), Computer School Information Systems (CSIS) and School Administration and Management Systems (SAMS) (Barta, Telem, & Gev, 1991; Visscher, 1991). Currently ITEM is playing a greater role in education management as it assists schools to function more effectively. Tantall and Davey (2001) describe ITEM as a well-designed functional system that provides useful reports and standard operations. Furthermore, School Information Sys-

tems (SIS) are perceived as an implementation of ITEM within a school context. Hence, Telem and Avidov (1994) define a School Information System (SIS) as a specialized Management Information System (MIS) that "matches the structure, management tasks, instructional process and special needs of the school".

ITEM can bring a number of benefits to a large number of stakeholders (administrators, teachers, students and parents) in an educational institution. The list of benefits includes but not limited to: improving information quality, saving time and effort and improving control and utilization of school resources (Barta et al., 1991). In addition, the use of ITEM could facilitate the activities related to school management, student registration, fee collection, reporting and timetabling (Friedman, 1994). Furthermore, school administration can use ITEM in all steps of the decision-making process to improve productivity (efficiency and effectiveness), labor quality and organizational structure (Barta et al., 1991; Oostheok, 1989; Visscher, 1988, 1991, 1996).

The educational system in the United Arab Emirates (UAE) is managed by utilizing a mixture of manual and computerized tools in a number of primary schools. SIS utilization in the UAE can be considered as an early sporadic experience rather than a planned diffusion of Information & Communication Technologies (ICT) and Information Systems (IS). Consequently, much of the schools' time and effort is wasted as a result of the under-utilization of such technologies and systems. The researchers explored the early experiences of SIS utilization in a number of primary schools in the UAE in order to clarify how a planned diffusion of SIS can be successfully executed in the educational sector of the UAE in the near future. The paper is organized into a number of sections. Section two of this paper provides a chronological overview of the UAE's educational system. The third section of the paper provides a detailed exploration of ITEM tools and applications used in primary schools in the UAE. The fourth section provides an overview of the research plan used to realize the objectives of the research plan. The last section of the paper provides the findings of the research agenda and a number of concluding remarks.

United Arab Emirates Educational System

The first public governmentally funded school was established in the Emirate of Sharjah in 1953 well before the political union between the seven emirates (Abu-Dhabi, Dubai, Sharjah, Ajman, Ras-Al-Khaima, Al-Fujira and Um-Al-Quwain) was established in 1971 with a school population of (230) students (Al-Motawi, 1999; MoE, 1993, 1996a, 1996b, 1996c; Morsi, 1981). During the academic year 2003-2004, approximately 306,752 students were being admitted into 780 public schools and a further 234,250 into 426 private schools; the latter type of schools is self-sustaining funded through tuition fees (MoE, 2004).

The educational system structure in the UAE consists of primary schools and secondary schools. At six years of age, the student starts at a primary public school. The student spends five years at the first unit (levels 1-5), four years at the second unit (levels 6-9) and three years at a secondary school (levels 10-12). Schools are funded, staffed and equipped by the government of the UAE, hence primary public education in the UAE is provided for free and the first unit is considered compulsory to all students (MoE, 1996, 1998). The structure and characteristics of the primary public schools in the seven Emirates of the UAE is similar. In addition, the Ministry of Education (MoE) is committed to invest in technology, improve schools infrastructure and devolve some of its authority to the nine educational zones (Abu Dhabi educational zone, Al-Ain educational zone, Al-Gharbia educational zone, Dubai educational zone, Sharjah educational zone, Ajman educational zone, Ras-Al-Khaima educational zone, Al-Fujira educational zone and Um Al- Quwain educational zone) in line with its decentralization policy. Under the proposed Act of Authorization, schools (both public and private) will report directly to their own educational zones, prepare their own budgets, conduct their own training courses and to organize cultural and technical activities.

Available Technologies & Applications
and their use in Primary Schools

The UAE is a country in which the governance of education has been centralized since the early attempts to computerize school management in 1999. Currently, the MoE's strategy for ITEM reflects centralizing school management in certain areas and de-centralizing school management in other areas. The centralization strategy of the ministry aims to install a countrywide network of computers and servers to connect all schools (primary and secondary) in each educational zone to the MoE by the year 2020, while, the decentralization strategy, which starts at the primary school level, gives school management the opportunity to procure their own school information system.

In order to achieve the strategic aims and operational targets of the MoE's 2020 vision; the MoE made a number of investments in ICT and IS starting in the year 1998 to automate the Ministry's activities relating to school management. Such investments in technology and systems came as an integral part of the UAE's governmental strategy to automate all ministerial activities, banks, hospitals and many other organizations to create the region's first electronic government (e-Government). Three major investments can be identified so far in the UAE's educational sector:

1. High School Certificate Control System and Infrastructure

2. Student and Staff Registration Systems

3. e-learning (Curricula delivered via technology)

As an early experiment, the MoE commissioned a High School Certificate Control System to be developed by a third party system provider in 1998 to provide high school students' enrolment, exams and results for the Science and Art streams. This system was enhanced two years later to include the Technical stream of the high school certificate. The system facilitates the use of data related to student registration, examination timetabling, examination scores registering and certificate printouts. In the year 2000, the MoE added three more systems to the existing High School Certificate Control System; Student Registration, Staff Registration and Inventory Management. Table 1 represents the different activities automated though the Student, Staff and Inventory sub-systems.

The staff registration system was designed to provide an accurate record of all employees and personnel in the Ministry and its schools countrywide. While the Student Registration System was designed to hold student enrolment data, tests, final examination scores and school reports for students in all nine educational zones. Recently, the MoE has mounted a great effort to enter records of more than 200,000 students in 451 schools in the seven educational zones while student data from approximately 209 schools (mainly in Abu Dhabi and Al-Ain educational zones) are yet to be entered.

Table (1) Applications for Student, Staff and Inventory Management		
Student Registration Sub-System	*Staff Registration Sub-System*	*Inventory Management Sub-System*
General School Administration	General Staff Registration	Inventory Listing Data
Administration of Public Data	Administration of Staff Data	Inventory Distributing Data
Enrolment Registration	Staff Returns	Inventory Journal
Examination Registration	Maintenance of Staff Absence Details	Inventory Control
Test Score Registration		
Final Exam Registration		

Provided by the Emirates Institution for Computers and used in Abu Dhabi and Dubai emirates so far, the Inventory Management System is an accurate record keeping system of inventory data to control the daily, monthly and yearly movement, distribution and storing of the Ministry's physical assets in the Ministry and the Educational institutions (MoE, 2004). It is evident from the Ministry's documents that the system is yet to cover the other five emirates and suffers from a number of technical problems and lacks appropriate user training.

The Ministry's next strategic investment is in the National Project for Statistical System (NASAP), which will gather and analyze data for student and educational staff from all schools countrywide. This system will be available on the Internet and will enable the Ministry to publish such data analysis through a dynamic Website infrastructure. In addition to (NASAP) and as part of the MoE's future strategy, Information Technology (IT) will be integrated into curriculum delivery in terms of teaching and learning, teacher training and monitoring and evaluation.

Research Method and Data Analysis

In order to assess SIS utilization in the primary schools sector of the UAE, the researchers used a series of case studies of a number of primary schools in the UAE. These case studies were randomly chosen to represent the Abu-Dhabi, Dubai and Sharjah Educational Zones. A trilogy of data collection tools was used during these case studies (MoE documentation analysis, questionnaires and interviews filled by/with key staff at the schools and MoE and behavior observation). Two questionnaires, extended number of interviews and MoE' document analysis were used to acquire an understanding of the situation and to describe and explain the main features of the technology used in various schools. (See Appendix A and B for contents of questionnaires.) In addition it provided a clear description of stakeholder's attitudes and personal opinions toward the available applications and technologies. In this research project a stakeholders means "any individual, group, organization, institution that can affect as well as be affected by an individual's, group's, organization's, or institution's policy or policies" (Mitroff & Linstone, 1993). In the context of primary schools, the stakeholder list includes but not limited to: school teachers, school administrators, school managers, ICT/IS providers, students, parents and the MoE. In this particular research project only those stakeholders who have had a direct relation with the applications/technologies whether in terms of use or funding were included; namely school teachers, school administrators, school managers and the MoE.

Questionnaire Analysis

The first of the two questionnaires was designed to measure actual use of general IT tools and applications in daily activities of school management and users' attitudes towards such technologies. Hence, the first questionnaire aimed at identifying the school management activities that are supported by general IT, including ISs and other software applications supplied by the Ministry or by local and international vendors or off the shelf commercial software and applications. In addition, the questionnaire focused on measuring stakeholder's feelings towards the expected 'increase' in personal and organizational efficiency and effectiveness (productivity). On the other hand, the second questionnaire was designed to measure user satisfaction with the existing SISs supplied by the MoE (High School Certificate Control System and Student Registration Systems). In addition, it was intended to gather user feedback in terms of the way these systems were implemented.

Questionnaire 'A' analysis

Fifty copies of this questionnaire were distributed to a number of involved stakeholders in primary schools in May 2004. Thirty-four completed questionnaires were returned or collected by the researchers. The respondents' list included 4 headmasters, 5 assistant headmasters, 4 secretar-

ies, 8 administrative supervisors and 13 teachers. Figure 1 provides a graphical representation of actual uses versus possible uses of general IT/IS in primary schools.
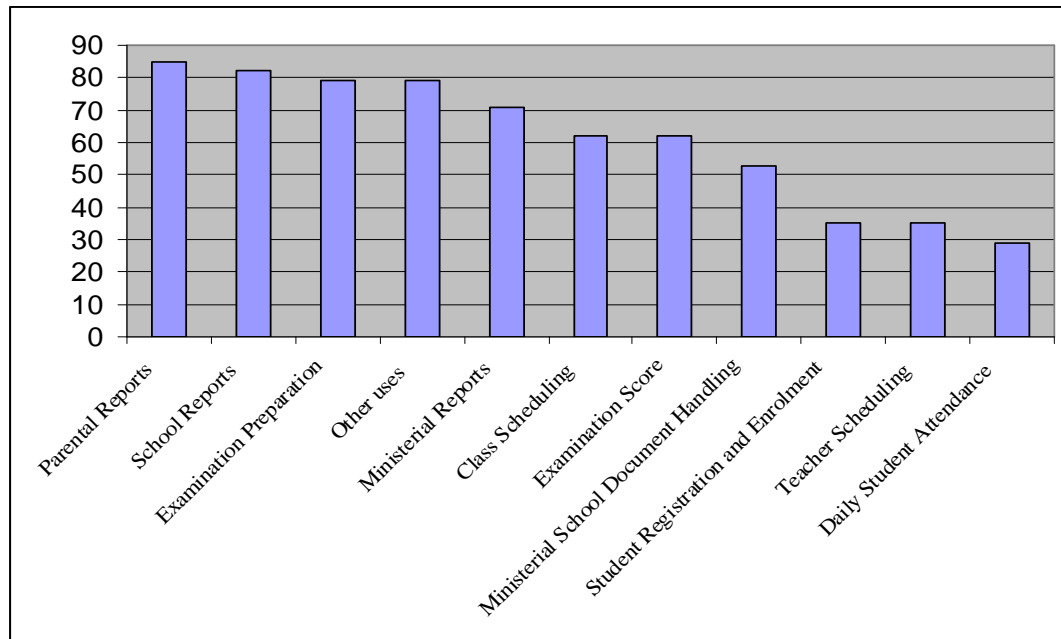

Figure 1: Actual Uses Vs Possible Future Uses of General IT in Primary Schools

It is evident that general IT tools and applications is dedicated to preparing reports for ministerial and parental use and preparing exams. On the other hand, class scheduling and examination scoring came in a second category of use, while staff scheduling, student registration and student attendance have scored the least. This points out the under-utilization of IT in time-consuming and labor intensive activities of school.

Regarding users' attitudes towards IT support, the questionnaire shows that the majority of respondents have a positive attitude towards the use of IT in primary schools whether currently or for future demands, see table (2). The users at primary schools, especially the administrative staff of the school, seem to be confident of the positive outcomes of using IT in their clerical activities.

Table (2) Technology Users' Attitudes		
Efficiency/Effectiveness Measure	*O. Number*	*Percentage*
The use of IT reduces job burden	4	.97
The use of IT increases job quality	5	.94
The use of technology saves effort	6	.82
The use of IT increases activity completion speed	7	.79

Questionnaire 'B' analysis

The second questionnaire was designed to measure user satisfaction of currently used SIS and to identify user demands. A copy of the questionnaire was delivered in person in December 2004 to a random sample representing two educational zones of the UAE primary educational sector. All of the sixteen participants in this sample were users of an operational SIS, where 11 of the 16 re-

spondents were administrative supervisors while the other 5 were school assistant headmasters. All respondents indicated that they have been using the MoE Student Enrolment System for 2-3 years.

As Figure 2 indicates, the overwhelming majority of respondents use the MoE's SIS mainly for student enrolment, examination preparation and teachers' attendance record while examination scoring, daily student attendance and writing school reports activities rated second in frequency of use. On the other hand, writing ministerial and parental reports scored very poorly; a result contradicting the first questionnaire. In the first questionnaire, where respondents were asked to point out the school management activities that are supported by general IT Application, writing ministerial and parental reports scored very high while in the second questionnaire the same areas of activity scored very poorly because of lack of SIS support for such activities. This indicates the fact that available SISs, whether provided by the Ministry or vendor specific systems, do not cover many of the essential school user requirements. This also indicates the acute need for a clear design and implementation strategy to provide the type of SIS needed by school users to cover all their essential data and information requirements
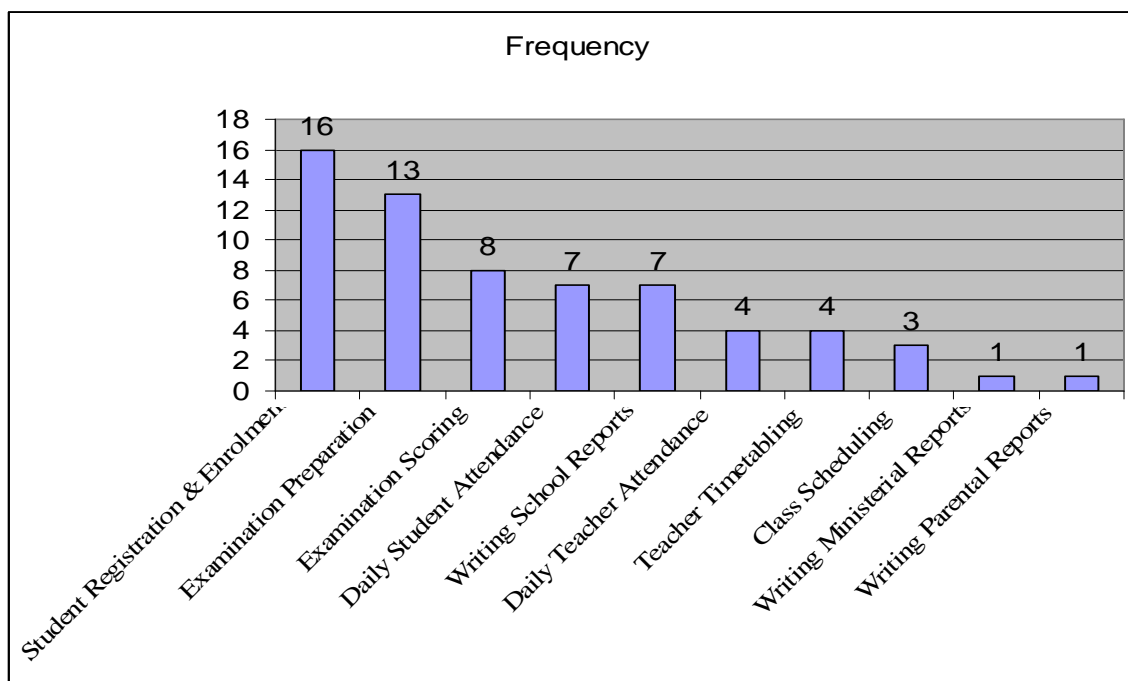
Figure 2: Frequency of daily school management activities

When the respondents were clearly asked whether the current SISs provided them with their needs and requirements of processed data to perform their daily activities, the majority of respondents answered with 'acceptable' to 'good' on a scale of five (no opinion, bad, acceptable, good and excellent). Regarding the actual values and benefits of existing SISs, Table 3 summarizes the answers of the respondents:

Table 3: Actual values and benefits of existing school systems		
Efficiency/Effectiveness Measure	*Frequency*	
	Agree	*Disagree*
Was the system introduced to improve management effectiveness in schools?	13	2
Did the Ministry of Education introduce the system to decrease central control?	13	2
Was the system introduced to improve school administrative efficiency?	12	3
Was the system introduced to improve proficiency for strategic planning by the Ministry of Education?	11	4
Was the system introduced to provide better record transfer between school phases?	8	7
Was the system introduced to improve information flow to and from the Ministry of Education?	6	9
Was the system introduced to improve administrative effectiveness in schools?	5	10

It is evident from the above table that the majority of respondents believe that existing SISs will improve school management effectiveness and efficiency, decrease central control by the MoE and provide feedback and statistical data to improve strategic planning by the MoE. To a much lesser degree, the respondents believe that the existing SISs will provide better record transfer between school phases, and improve information flow to and from the MoE. This can be attributed to the many technical and human obstacles encountered when transferring data electronically between the Ministry and the schools. Currently such data is sent via electronic email over a direct communication channel between the school and the Ministry.

Regarding technical satisfaction towards the existing SIS functions, the majority of respondents believe that existing systems suffer from many diverse technical problems: network malfunction, lack of maintainability, time consumption when retrieving historical data and low processing speed as shown in Table 4. While data entry problems, ease of use, and failure to start up were rated as the least technical problem to be encountered.

Table 4: Technical satisfaction and problems encountered with existing systems		
Technical Problem	*Frequency*	
	Agree	*Disagree*
The system suffers from network malfunction.	12	3
The system suffers from lack of maintainability.	11	4
The system consumes more time when retrieving historical data.	10	5
The system suffers from a low processing speed.	10	5
The system suffers from data entry problems.	9	6
The system is not easy to use.	8	7
The system fails to start up.	7	8

Regarding user demands, the respondents were asked to rank the school management activities in terms of which activities are more or less urgent to be computerized; Table 5 provides a summary of the responses.

Table 5: School management activities to be urgently computerized		
School Activity	*Urgent*	*Less Urgent*
Students and Personnel Management	14	1
Student Assessment	13	2
Student and Class Scheduling	12	2
Daily Student Attendance	12	3
Student Affairs (Transfer)	12	3

As evident from the above table, the overwhelming majority of respondents believe that all school activities (Students and Personnel Management, Student Assessment, Student and Class Scheduling, Daily Student Attendance and Student Affairs) need to be fully supported by a computerized system.

On a more personal level, the respondents were asked a number of questions regarding their technical maturity, technical qualification and whether their input was sought or not in system selection. Concerning technical qualification and maturity to use the system, all respondents believed that they are well qualified to use the current SIS and computers in general, regardless of user age and educational background. As far as personal choice for using the Ministry's SIS, 4 out of 16 users indicated that they were consulted to whether they would choose to use the Ministry's SIS as the Ministry itself selected participating users in a random manner.

Interviews

The series of case studies mentioned earlier enabled data to be gathered from sixteen semi-structured interviews in April and May 2003. The lists of interviewees included a number of involved stakeholders in school management. These include administrative staff (ranging from headmasters to school secretaries) and the MoE's staff in charge of various automation projects. Each interview lasted approximately 40 minutes with each of the following interviewees:

1. His Excellency the Minister of Education

2. The IT Manager of the Ministry of Education

3. The Research and Development Manager of the Ministry of Education

4. The University of Zayed's Representative at the Ministry of Education

5. The Applications and Systems Manager at the Ministry of Education

6. The Headmaster, and the Administrative Supervisors at Al-Sharjah Model School

7. The Assistant Headmaster and the Administrative Supervisor and School Secretary at Ishbilia School

8. The Administrative Supervisor at Al-Khan Primary School

Generally speaking, the interviewees believed that school administrative staff is in favor of technology utilization in daily school activities. This was assured by the positive feedback from administrative staff in terms of expected benefits towards personal and organizational productivity including (time saving, effort saving, quality improvement, improving completion speed of activities, reducing the number of administrative staff needed for completing laborious physical activities, committing less mistakes and errors, imposing standardization of activities and facilitating data retrieval for decision making and monitoring). However, the interviewed administrators revealed a number of weaknesses in current applications (including SISs) and management of change including:

1. Unavailability of proper electronic communication with the Ministry

2. The current system/applications do not cover their needs and requirements

3. Limited form of training

4. Lack of technical awareness regarding the system and its infrastructure

5. Tendency to use third part systems/applications rather than MoE's sponsored system/applications. This can be attributed to the fast response from such system/application vendors and providers in case of queries and technical support.

On the other hand, the interviewees from the MoE provided a great belief in and unlimited support for the ongoing 2020 vision and its strategies. Despite their forward looking, the interviewees expected to encounter technical and organizational problems as a normal part of the change process. H.E the Minister of Education has mentioned that the strategy implementation is progressing according to time schedule despite the occasional hindrance caused by inter-governmental agencies routines.

Since schoolteachers were the first stakeholder to be exposed to IT, they raised many concerns regarding the availability of Personal Computers (PCs) and Internet connectivity. They felt that their limited time should be dedicated to teaching rather than to managing school activities. Despite such concerns, the interviewed teachers felt that using IT would aid rather than hinder their daily activities, increase inter-staff collaboration and improve their professional development and personal productivity. According to interviewed teachers, age is a major attribute for those in favor of technical intervention, as younger teachers are more willing to use and integrate technology within their daily activities and working environment while older generations are less willing to do so. This can be attributed to the wider exposure to IT and productivity tools of the younger generation during their education.

Behavior Observation

The aim of the behavior observation was to investigate the individual behavior of involved stakeholders to gain a better insight into the organizational culture within the school, to assess the interaction between the school's teachers, administrators and administrative supervisors and to assess the pattern of day-to-day work including:

1. Information technology penetration level

2. Computerized school management activities

3. Acceptance of and reaction to changes

4. Awareness of computerized information systems impacts on school productivity (efficiency and effectiveness) by school personnel and management

5. School readiness to embrace technical innovation and school's perceptions of benefits and actual values of such technical innovations

The researchers noted one major difference between the different visited schools as some schools enjoyed an abundance of human and technical resources with dedicated IT staff to operate the MoE Student Enrolment System while others suffered from limited technical and human resources with a prolonged response time in terms of maintenance and technical support. The availability of such dedicated technical and human resources or lack of them influenced the success/failure of the IT experience of such schools. Regarding the utilization of the Ministry's Computerized Information System, the Ministry's directive gave schools the opportunity to either implement the Ministry's Student Enrolment System or to procure a third party system which can be purchased from local or international vendors. The encountered technical problems and lack of dedicated technical staff for maintenance and support pushed many schools to switch to vendor supplied systems rather than the Ministry's Student Enrolment System.

In terms of mental acceptance and reaction of users towards the technical changes to daily activities, practices and working procedures brought by the adoption of an SIS and general IT products, the researchers noted that many of the users with whom discussions were conducted have expressed their acceptance and willingness to fully embrace the computerization effort. The researchers noted that there was very little resistance towards the changes in working practices and daily standard operating procedures caused by state of the art ICT and SISs. This was a feeling shared by both sexes and among all ages of users despite their educational background. On the other hand, the researchers noted that many of the primary schools are ready for change and innovation as they are aware of the nature, benefits, values and shortcomings of the computerization process. Hence the researchers believe that many schools will fully embrace the technology and its accompanying changes to culture, structure and daily operating procedures.

Research Limitations

Fullan (1991, P65) defines implementation as " the process of putting into practice an idea, program, or set of activities and structures new to the people attempting or expected to change". Thus, in the adoption/development process of an SIS it is crucially important to identify all stakeholders who are interested and involved in the innovation process and who are able to express as well as include their viewpoints in any system planning or implementation effort. The researchers chose to investigate the implementation process from the perspectives of four major stakeholders; such choice has been based on the limited time frame available to the researchers as well as on the complexity of the increased numbers of involved stakeholders. On the other hand, much of the collected data and measurements were gathered via interviews and observations. Such instruments have a limited value unless the positive involvement of the interviewees was guaranteed. Also, accessibility to documents and people posed another expected limitation to this study. The 'successful' gathering of rich data and the accessibility to data resources within schools and the MoE departments affected the fieldwork.

Findings and Conclusion

The findings of the research project reported in this paper show a mixture of positive, negative, intended and unintended effects of using SISs in the UAE's educational sector. The interviews, questionnaires and observations show that the use of IT/IS in the UAE's educational sector is still in its initial stage according to Nolan's (1979) four-stage scale of SIS implementations (initiation, expansion, integration and stabilization). Nolan (1979)'s theory on the growth stages concerns time and degree of automation which organizations usually pass through when automating their data processing activities. Furthermore, the use of SISs in the UAE's educational sector can be placed in the adoption stage of Hall, Wallace and Dosset's (1973) Concern Based Adoption Model [CBAM] as can be seen in Figure 3. CBAM is a hierarchy of eight levels of usability that correspond with three innovation stages (Adoption, Implementation and Utilization). The adop-

tion stage of the model corresponds to development of awareness that a situation needs to be addressed and that orientation for the activities that predispose decision-maker towards a particular action (Hall et al 1973; McKinnon & Nolan, 1989). Hence The UAE have an opportunity to reduce the SIS implementation time-frame through learning and benefiting from the experiences of those who have successfully developed, implemented and used IT in their education sector.
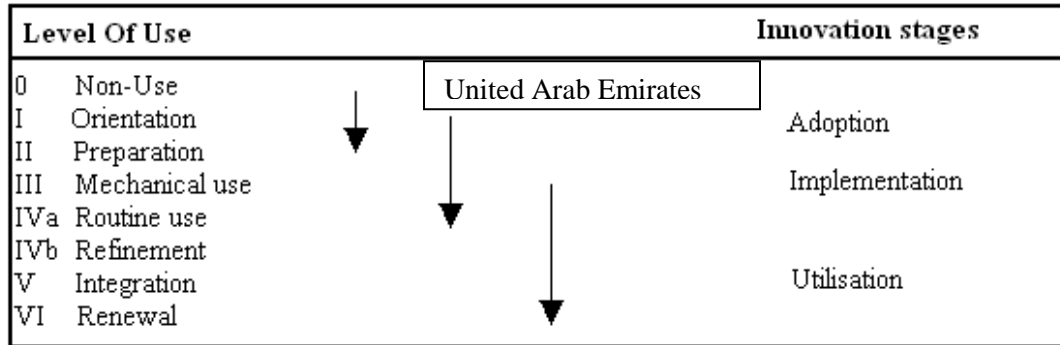

Figure 3: Concern Based Adoption Model of UAE Experiment

Generally speaking, the findings of the interviews and the questionnaires provide a positive view of the MoE's automation project. The confidence in the positive results/implications of technology utilization was high. The users were willing and ready to integrate educational management technology within their daily working practices. The positive impact was felt all around since the Ministry's automation process gave potential users the opportunity to clearly define their needs and requirements. Though a number of negative results and future concerns were raised by interviewees and as a result of visits to schools, these are the under-utilization of already available data, the lack of effective connectivity between the Ministry and the schools and lack of training and proper technical support. The recent publications of the MoE in the UAE (MoE, 2005) show a move to decentralized education management by combining the High School Certificate Control System with School Information System (Students' Score System and Students' Certificate Control System) to score and issue the High School Diploma by schools to graduate students.

The strategy of the UAE government is to accelerate the effective utilization of educational management and automation technologies in the educational institutions and the Ministry itself. In reference to school management systems and applications, it is evident that the majority of schools have computerized their administrative activities at different levels via the Ministry's suggested system or individually procured systems to fit their needs and requirements funded by the school's own budget. Such systems were only used within the school without the much needed connection and integration to the Ministry's system(s), which would enable the seamless movement of data between schools and the Ministry. This missing link undermines the efficiency and effectiveness of both schools and the MoE and dampens the return on investment.

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Appendix A:
Administrative Duties Enquiry Questionnaire

Questionnaire for Administrative Basic at Primary Schools

Q1: What's your job title?

1. Headmaster   2. Assistant   3. Principal   4.Councilar

5. Secretary

Q2:How long have you been designated as Administrator?

1. 1-2 Years   2. 3-5 Years 3. 6-10   4. More than that

Q3: What's your daily duties? Tick the right Option please.

School Activity	*Computerised*	*Manual*
Student Registration & Enrolment		
Daily Student Attendance		
Class Scheduling		
Writing School Reports		
Examination Preparation		
Examination Score		
Writing Ministerial Reports		
Teacher Scheduling		
Ministerial School Document Handling		
Writing Parental reports		
Other Uses		

Q4:Do you believe that using a computerised system will make your job easier?

1. Yes   2. NO   3. Maybe   4. No Answer

Q7:Do you believe that using a computerised system will your time and effort?

1. Yes   2. NO   3. Maybe   4. No Answer

Q6:Do you believe that using a computerised system will improve your job quality?

1. Yes   2. NO   3. Maybe   4. No Answer

Q7:Do you believe that using a computerised system will speed up your duties completion?

1. Yes   2. NO   3. Maybe   4. No Answer

Q8:Do you believe that using a computerised system will improve your job productivity?

1. Yes   2. NO   3. Maybe   4. No Answer

Q9:Do you prefer using a computerised system over a manual procedure in your daily activities?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q10:Do you use data tables in your daily activities?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q11:Do you believe that using a computerised system will help you better gather and use data and information?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q12:Are you prepared to utilize a computerised system fully in will your daily activities?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q13:Do you object to changing your daily practices and working procedures to include a computerised system?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q14:Do you use the Ministry of Education computerised system in your daily activities?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q15: For what of the following purposes you use the Ministry of Education computerised system?

School Activity	*Yes/No*
Student Registration & Enrolment	
Daily Student Attendance	
Class Scheduling	
Writing School Reports	
Examination Preparation	
Examination Score	
Writing Ministerial Reports	
Teacher Scheduling	
Ministerial School Document Handling	
Writing Parental reports	

Q16:Do you find the Ministry of Education Computerised system easy to use?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q17:Do you think that the Ministry of Education Computerised system needs changes?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q18:Are you willing to participate in user training to improve your computer literacy?

| 1. Yes | 2. NO | 3. Maybe | 4. No Answer |

Q19:What are your suggestions to improve the schools Computerised system?

Appendix B:
User Satisfaction Questionnaire

Questionnaire for Measuring User Satisfaction

Part 1: Personal Details

1.   School Name:

2.   Educational Zone:

3.   What is your Job Title:

    a.   Headmaster

    b.   Assistant

    c.   Principal

    d.   Counsellor

    e.   Secretary

Part 2: Questions

Q1: Do you use the Ministry of Education computerised system?

1. Yes   2. NO

Q2:For how long have you used the system?

1. Less than 1 Year   2. 12-24 months   3. More than 24 months

Q3:Have you been consulted about your wish to use or not to use the Ministry of Education computerised system?

1. Yes   2. NO

Q4:Do you describe yourself as a computer literate?

1. Yes   2. NO

Q5:Do you think you have the skills and know ledges to use the Ministry of Education computerised system?

1. Yes   2. NO

Q6:Do you use the Ministry of Education computerised system in your daily activities?

1. Yes   2. NO

Q7:For how many hours do you use the Ministry of Education computerised system daily?

1. 0 Hours   2. 1-2 Hours   3. 2-4 Hours

Q8:Before the Ministry of Education computerised system, did you attend any formal training courses?

1. Yes   2. NO

        If yes

        Q8.1 for how long?

    1. 1 weeks   2. 2Weeks   3. 1 Month

    4. 2 Months 5. More

Q8.2 Was the training offered internally?

    1. Yes   2. No

Q8.3 How do you judge the quality of the training course?

    1. Bad   2. Fair   3. Good   4. Excellent   5. No opinion

Q8.4 How do you judge the quantity of the training material?

     1. Bad   2. Fair   3. Good   4. Excellent   5. No opinion

Q8.5 How do you judge the adequacy of the training course in terms of balance between technical aspect and how to use system in your job?

     1. Bad 2. Fair   3. Good   4. Excellent   5. No opinion

Q9: For what of the following purposes you use the Ministry of Education computerised system?

               School Activity   *Yes/No*

    Student Registration & Enrolment

    Daily Student Attendance

    Daily Teacher Attendance

    Class Scheduling

    Teacher Timetabling

    Examination Preparation

    Examination Scoring

    Writing School Reports

    Writing Ministerial Reports

    Writing Parental Reports

    Other Uses:

Q10: Does the Ministry of Education computerised system provide you with the needed data?

1. Bad 2. Fair   3. Good   4. Excellent   5. No opinion

Q11: Does the Ministry of Education computerised system help you to fulfill your daily job roles?

1. Bad 2. Fair   3. Good   4. Excellent   5. No opinion

Q12: Which of the following statements you agree with regarding the Ministry of Education computerised system?

	Disagree	*Agree*	*Do not Know*

The system was introduced to improve school administrative efficiency?

The system was introduced to improve administrative effectiveness in school?

The system was introduced to improve management effectiveness in school

The system was introduced to improve information flow to and from the Ministry of Education?

The system was introduced to provide better record transfer between school phases?

The system was introduced to provide feed back and statistical data to improve planning by the Ministry of Education?

The system was introduced to decrease central control by the Ministry of Education?

Q13: Which of the following technical problems you face when you use the Ministry of Education computerised system?

	Disagree	*Agree*	*Do not Know*

The system fails to start up.

The system suffers from data entry problems.

The system is not easy to use.

The system suffers from network malfunction.

The system consumes more time when retrieving historical data.

The system suffers from a low processing speed.

The system suffers from lack of maintainability.

Other problems:

Q14:Do you believe that user training and user participation is essential to user friendly systems?

1. Yes   2. NO

Q15: Rank the following factors according to your personal choice of being the most important for system usability:.

1. User Friendliness   2. User Training

3. User Satisfaction

Q16:Do you agree with the need to develop a system to cover all daily school management activities?

1. Yes   2. NO

Q17: Rank the following school management activities in terms of its urgency to be supported by a computer system/subsystem:

School Activity	*Rank*
Students and Personnel Management	
Student and Class Scheduling	
Daily Student Attendance	
Student Affairs (Transfer)	
Student Assessment	

Biographies

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