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Learning Culture in a Smart School: A Case Study

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Abstract

This research was aimed at studying the ICT integration in everyday life of one Iranian smart school. The model, which is used, considers the school as a whole and as a system. The research approach is qualitative. The research data was gathered by 3 months observation and interviews with teachers and students. The model of the examination has several elements including: ICT included in strategic planning, teaching and learning methods – participation for empowerment, flexibility of curriculum, investments in communication, leadership and management and teaching staff’s capacity and commitment. According to research findings, ICT is not in the everyday life the school.

Keywords: Smart school; Everyday life; ICT integration; Culture

1. Introduction

The smart school project in Iran has been inspired by a similar project undertaken by the Malaysian Ministry of Education (Attaran & Siraj, 2010). In Malaysia, the idea of smart schools was proposed in 1997 and became operational in 1999. Seventy-eight million dollars were allocated to the project, the largest portion of which -- thirty-eight percent--was spent on purchasing educational material (Puteh & Vicziany, 2004). Patterned on the Malaysian model, the smart school project in Iran was launched in 2004. At the pilot stage, the Iranian Ministry of Education implemented the project in four high schools in the capital city of Tehran. Following the publication of “The Road Map of Iranian Smart Schools” in 2011, the project was extended to other educational districts. The main focus at the present stage has been equipping the smart schools with computers, smart boards, network facilities and so forth. Like many other countries, an implicit assumption seems to be dominant in the project: that by equipping schools with computer hardware, ICT integration will turn into a mainstream trend (Thang, Hall, Azman, & Joyes, 2010). Nonetheless, several transnational researches have proven that such an assumption is not based on reality. The 2006 Second Information Technology in Education Study (SITES) reported “financial investments for the educational use of ICT had not been in line with high expectations”
(Niemi, Kynäslahti, & Vahtivuori-Hänninen, 2012). Studies of Eng Tek Ong and Kenneth Ruthven (2010) show that even though smart school projects intended to prepare the younger generation for scientific and technological careers, they have failed to accord with expectations. Thang et al. (2011) attribute this to ineffective teacher training. According to their study, teachers in smart schools have not been fully instructed to manage the process of ICT integration into education.

Research findings of Wan Ali, Mohd Nor, and Alwi (2009) show that time, course content and technical malfunction were the main problems teachers faced during the process of ICT integration in Malaysian smart schools. In their research, Mahmoudi, Nalchigar, and Ebrahimi (2008) found that the basic challenges of Iranian smart schools were the lack of necessary rules and regulations in the Ministry of Education and the traditional structure of Iranian schools.

Attaran and Siraj (2010) showed that teachers and students do not hold a positive attitude towards teaching and studying in Iranian smart schools. Furthermore, the results of their study revealed that in order to increase the efficiency of smart schools, educational institutions should be provided with further equipment, and teachers should attend ICT training courses, undergo extra training and receive benefits for their participation in such courses. Moreover, educational courses for the students should be presented through diverse models that correspond to their talents. Traditional routines in class should be abandoned and each class should be equipped with computers and peripheral devices.

As research findings by Niemi et al. (2012) have shown, “mere investments in technical resources or in infrastructure do not create new school cultures and learning experiences that promote twenty-first century skills and learning”. The present research which aims to probe the impact of ICT integration in smart schools (as an organization or community) has chosen the Absal high school as its case for study. Absal high school is Iran’s oldest smart school, which was established and equipped in 2004. The school is located in northeast of Tehran and has been directed under a single administration so far.

2. The Theoretical Framework of the Study

As Niemi et al. (2012) maintain, to understand ICT integration into the school curriculum, it is better to see schools as communities or organizations so we can more easily gain an understanding of schools’ implementations of ICT. Some of the factors Niemi et al. (2012) recount as influential in creating the school culture and in line with the ICT integration into the curriculum are:

- local school culture (openness and enthusiasm for change and reform)
- joint visions and values and the impact of school principals in their creation
- teachers and their pedagogical implementations

A shortcoming of previous research in this area according to Niemi et al. (2012) is that they have viewed the ICT integration factors independently and detached from the organization’s culture. The present study, nonetheless, circumvents this problem by viewing the school as a system, i.e. in a holistic form. In other words, ICT integration is linked to cultural elements; Niemi et al. suggest the following model for assessment of the degree of ICT integration into the school culture:
Figure 1. Key factors for educational use of technology in the everyday lives of schools (Niemi et al., 2012).

We have drawn upon this model to study the ICT integration into the school culture and curriculum of the Iranian smart school.

3. Research Method

This study follows a qualitative approach. One of the researchers attended the classes during a three-month span in order to observe the natural settings of the teaching-learning procedure, with a focus on ICT usage in the teaching-learning process. In addition, interviews were made with the school principal, three teachers who used ICT in teaching, and a focus group of students. Each interview was then recorded, with the main concepts extracted and categorized by the researchers.

4. Research findings

Observations and interviews revealed that despite the stress in the Ministry’s road map of smart schools on integration into curriculum, ICT has not been incorporated in the everyday life of the school. We discuss this issue according to the components of the Niemi et al. (2012) model.

4.1. ICT included in strategic planning – As part of culture in schools

As the observations and interviews reveal, ICT has not been integrated in the strategic planning of Absal, Iran’s oldest smart school. In fact, teachers employed ICT in the classroom not according to a specific plan, but with regard to temporal circumstances and the like. All third grade and pre-college classes were administered in
the traditional manner, while in other grades, ICT usage in the classroom depended on the teacher’s decision. As
the principal of Absal stated, the pressure emanating from national standard examinations such as the university
entrance exam (called Konkour) and third grade final exams, beside the pressure from the students’ parents,
forced the school to shelve ICT usage and choose the traditional methods. However, in lower grades the teachers
utilized ICT for teaching.

Even in courses where ICT was used as a learning tool, due to problems such as inadequate computer
equipment, the classes were held in laboratories or halls, where issues such as the computers’ technical
problems and waste of classroom time as much as twenty minutes emerged. Such problems, beside the
considerable volume of material to be taught in relatively short time, discourage teachers from using ICT tools
for learning inside the classroom. In their research, Wan Ali et al. (2009) have come to the same conclusion.
According to observations in their research, students’ entering the class takes 5-10 minutes, with another five
minutes elapsed for them to settle in their seats. They need another five minutes to start their computers and if
any technical problem comes up, the teacher has to spend five to ten minutes to fix it before beginning the class.
All of these possibilities cut from the regular class time to the teachers’ dismay.

Teachers of Absal High School possess the courses’ content material in electronic format, and have designed
their own lesson plan electronically (in CDs etc.) Their CDs include images captured from the course book or
animated movies, exercises and drills from the book, the full text of the course book with extra tips and
examples, general information related to the course subject, related multiple choice questions from past years’
national university entrance exams and so forth. An approximate 70 percent of the high school’s teachers have
passed content development training courses. They use the internet to find relevant material and mostly use
Adobe Flash® software to create electronic material. Nonetheless, ICT has not yet become an inherent learning
tool in Absal’s strategic plans and is regarded as an optional tool.

4.2. Teaching and learning methods leading to empowerment

In Absal as a regular procedure, in courses where ICT is employed as a learning tool, the teacher divides
students into groups and asks each group to create instructional material for a certain chapter. Each group is
responsible for teaching the assigned chapter on a specific date. The students are compelled to search for
additional information about the subject, browse scientific websites and read relevant papers in order to manage
content delivery which satisfies the teacher’s and students’ expectations. One student even told the researcher
that their group had spent two months on their presentation for a lesson on chemistry. Students welcome this
method of teaching and believe it has added depth to their understanding of the subject matter since they have to
master the topic in order to teach it to the other students. ICT-based research is optional in Absal High School
and students obtain extra reward for conducting such research. In the meantime, students’ ICT qualifications are
not evaluated and even their score on the computer course is not inserted in their performance sheet in the first
grade of high school. It would be safe to say no criteria exist for evaluating students’ ICT qualifications. That
explains why one student claims that at home, he does not turn his computer on even for three months although
he studies in a smart school, since he is not interested in computers and cannot ‘understand’ them. In fact, the
school provides ICT opportunities only for those interested in computers and internet, who are reciprocally
encouraged by the administration. Those students showing talent in learning ICT are enrolled in computer
training centers outside school to receive training in branches such as robotics. In the meantime, if a student
team is working on a related project, the school’s technicians are ready to guide and assist them, even beyond the working hours. It can be said that in Absal, the school and the teachers have actually placed focus not on ICT-based teaching and learning but on augmenting and evaluating the curriculum.

4.3. Investments in communication

The World Wide Web is a rich media, more powerful than its technological counterparts, because of its potential to foster interaction and participation in terms of real-life events. With computers and internet, students and teachers will be able to interact even after school hours. Research conducted during recent years (Norouzi, Zandi, & Madani, 2008) has stressed the communicative role of ICT. Nonetheless, Absal High School has failed to make the due investment in those areas, although interaction with parents has seen improvements. The school has launched a portal enabling students and parents to contact the administration. The portal holds data such as students’ scores, examinations timetable, class student list and so forth. There are however self-motivated teachers who used internet features to increase interaction with the students. The banner of a math teacher’s weblog reads: “Little is the classroom time and many are the things I want to say. This is a place for me to have more contact with my students.”

4.4. Leadership and management

At Absal High School, the principal has displayed all-out support for the teachers for integration of ICT and access to adequate resources, proving his ability to facilitate change. Through time management calibrated for optimum use of ICT equipment and emphasis on computer training, an overall 280 hours of training courses have been held in a three-year span. To encourage ICT use among the teachers and to raise awareness, the principal has personally sponsored domestic and foreign scientific tours for the teachers, including a 2010 Malaysia tour during which the teachers visited the Southeast Asian country’s smart schools. The spring festival held every year in this high school selects and awards the best electronic content developed by the students and teachers.

4.5. Flexible curriculum

The Iranian educational system is centralized by definition and the Ministry of Education is responsible for development of the curriculum for educational institutions across the country. The standard, national exams of sixth, ninth, eleventh and twelfth grades are developed based on these materials. Thus, the teachers’ scope of freedom in selecting extracurricular material is a function of the material’s impact on students’ success in standard tests. ICT-assisted courses for students are also held as extracurricular activities and the teachers are not allowed to change the preordained curriculum. All newcomers in Absal High School pass a Microsoft Office® training course in the summer and are adequately familiar with computer and internet at the beginning of the academic year. Obligatory extracurricular computer training courses are also held for freshmen. Students are taught how to use applications such as Adobe Premier® and Multimedia Builder® and become able to produce content by the end of the course. As mentioned above, they use this ability to create content material for the course they are assigned to teach.
4.6. Teaching staff’s capacity and commitment

From the interviews held with Absal smart school’s principal and teachers it becomes clear that the teachers have obtained adequate ICT skills. However, a major problem, which discourages teachers from integrating ICT and the course, is the problem of coordination in the Ministry of Education’s policies that are developed with regard to traditional schools. Hence, the teachers in Absal are forced to adjust their curriculum to that of traditional rules. For instance, even after developing an electronic lesson plan, teachers have to present a printed lesson plan to their supervisor. Moreover, while using the electronic attendance system, they are also asked to sign in the presence notebook. In fact, in order to follow the Ministry of Education’s regulations, many daily routines are conducted in both electronic and traditional forms in Absal High School. Moreover, despite their enthusiasm for using ICT as a learning tool, the teachers are hardly encouraged by the Ministry. They complain about not receiving a certificate after passing a three-year training course and non-acknowledgment of this course as part of their in-service training. They believe that no distinction is made between those who spend personal time learning new methods and developing electronic material, and those who do not; this is seen as a discouraging factor in ICT integration. Nonetheless, there are other motives such as visits made by teachers from other parts of the country to Absal High School, which sustain the motivation among the smart school’s teachers to continue using ICT as a learning tool.

5. Conclusion

As the study revealed, despite having a strategic plan for ICT integration in the teaching-learning procedure, the Absal High School has failed to fully realize this document and implement the routine classroom mechanism. In a comparative study, Puteh and Vicziany (2004) have shown that Australia in integrating ICT in the curriculum has been more successful than Malaysia. One reason for Australia’s success is that an ICT learning strategy has been a key element in the past two decades in Australian schools.

School principals are known to have a key role in driving forward smart school plans in their institutes. Studies show that without a supportive leadership, such plans are doomed to fail. Fullan (2001) suggested that principals are gatekeepers of every innovation and change in the schools. In our case study school, the administration showed strong support by providing training courses, encouraging the teachers and holding domestic and foreign tours. Nonetheless, support at the ministerial level is limited to hardware support and as Mahmoudi et al. have mentioned, the Ministry of Education’s policies are a major obstacle to the development of smart schools.

In the meantime, adequate equipment in Absal High School helps teachers to employ ICT in teaching. Moreover, group projects which call for cooperation outside school hours have created stronger connections between the students. Teachers and students have fostered relationship outside the academic environment and reinforced both academic and personal relations through weblogs. Nonetheless, such relations have not been observed among the teachers. The level of mastery over ICT is acceptable among teachers; yet a decline in commitment to ICT use is observable which stems from discouraging policies. Standard, national examinations are a key challenge, or actually the most important challenge in developing ICT use in schools.

The standard test in the final grade of high school have put pressure on teachers and restrict time for cultivating their creativity and novelty. Actually, one of the main challenges which inhibit the teachers from ICT application as an education tool, is the standard tests. Parents expect schools to provide the chance for their
children to go to the university and sometimes they feel using ICT is fun. Even though the high school principal has provided ICT educational courses for the children and most of them have learned to use computers, the parents consider ICT as a symbol of modernity and advancement in the whole of life and think it is not in line with the success of their children in the university entrance exam.

Last but not least, the centralized educational system is a major obstacle which has minimized the scope of teachers’ creativity. Innovation and risk-taking fails to receive encouraging feedback. The one-size-fits-all policies of the Ministry of Education prescribe the same rules and models for every school. Puteh and Vicziany (2004) hold that ICT integration in Australia has fared better than in Malaysian smart schools. They relate the Australian supremacy to the Australian decentralised educational system, in which teachers play an important role in the curriculum development process. As Cuban’s study in California schools has revealed, despite their long-term exposure to ICT, these schools do not display a high level of use (Cuban, 2001, in Hennessy, Ruthven, & Brindley, 2005). Cuban attributes this to centralized policies, which fail to notice the role of teachers in integration of ICT and Education. Hennessy et al. (2005) point to a similar problem in Britain and other countries with centralized educational systems.

References


