Technology and the Sociology of a Successful School in Tehran, Iran

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Abstract

The discourse surrounding the use of technology in education is gradually becoming more diverse. Until recently, it seemed that no matter where we turned we heard about the advantages of educational technology in public media and in educational literature. Little research has been carried out investigating how students and teachers make sense of computer technology in their everyday lives at school. The works of researchers operating from critical theory and postmodern perspectives have provided insights into the disparities, complexities, and contradictions involved in the implementation of technology. This empirical qualitative case study was carried out within a specific educational environment that has been termed a model school for educational technology. It explored how teachers negotiated meaning about technology, as well as about themselves and their roles as teachers. And, it identified and discussed the attitudes and assumptions that operated in school in which technology is upheld as essential to preparing students for work and successful living in the twenty first century.

Introduction

The discourses underpinning the introduction of computer technology to schools have been framed by tangled historical, social, and economic forces of corporate involvement, government actions and rhetoric, and public demands. Little research has been carried out investigating how students and teachers make sense of computer technology in their everyday lives at school (Nichols & Allen-Brown, 2008). The works of a few sociologists, and of researchers operating from critical theory and postmodern / poststructural perspectives, have provided insights into the disparities, complexities, and contradictions involved in the implementation of technology, as well as to issues relating to race, class and gender (Bryson & De Castell, 1998). Such studies have called attention to the multiplicity of power relations among administration, faculty, students, and the community, and each can aid in understanding the complex and contradictory nature of integrating technology into the organizational structure of schools (Bromley, 1998). Even so, almost none of this sociological or critical postmodern / post-structural research has been based on empirical studies in schools (Nichols & Allen-Brown).

This empirical qualitative case study was carried out within a specific educational environment that has been termed a model school for educational technology. It explored how teachers negotiated meaning about technology, as well as about themselves and their roles as teachers. It examined how meanings teachers and students constructed regarding technology use were influenced by the prevailing discourses operating in society at large, the broader educational community and their school. And, finally, it identified and discussed the attitudes and assumptions that operated in a school in which technology is upheld as "essential to preparing students for work and successful living in the 21st century."

Education in Iran

In Iran, formal education begins at the age of six which includes primary, middle, and secondary schools. The teaching period in the three phases is respectively five, three, and three years. After completing the secondary school, the students will receive a secondary school certificate. In case they feel inclined to continue with their studies, they are obliged to pass one-year pre-university courses and at the end will receive a certificate. Continuation of studies in a university is subject to passing the university entrance exam which is held once a year both at the state and private level. In this kind of exam the participants have to gain an appropriate rank in a competitive system.

The planning system in Iran is a semi-centered. This means that the civil planning and research organization determines and compile the texts books. This is then submitted to the provincials, cities, and districts institutions and the teachers are required to teach those already determined materials. Therefore, teachers have more latitude in utilizing the teaching manners and patterns, evaluation, activities, and homework. In fact, the policy-making is centered but the practice and its manner are semi-centered.

In this educational system, gaining the lowest required mark is the ground for assessing a student's success. Certain part of this mark relates to the performance of activities and homework within the academic year. The evaluation of the students is made on a zero-to-twenty ranging ground and a student has to achieve at least ten out of twenty.

The teacher and the students do not have much latitude within the teaching process and the selection of teaching contents and materials are pre-determined. Content is their activity's axis. It is the teacher's duty to cover the whole teaching contents before the end of the school year. Helping materials used in the teaching process are more confined to text-book, blackboard, and chalk. Unfortunately, most teachers teaching approaches are traditional, inactive, and dependent upon improving memory and gaining more information with no regard to its practice in education. Most teachers take up lecture as their main teaching approach. In more well-to-do schools, slides, whiteboard and computers are also used.

Considering the development in technologies such as ICT and IT, due to the high cost of utilizing these facilities, most schools do not have access to new technologies either because of their high cost, or lack of the required skills by the teachers to make use of them in education. Schools are facing problems in connection with equipping libraries and receiving organizational posts for employing librarians. They also have certain problems in using libraries and laboratories and the larger part of the textbooks deal with technological and cultural issues.

In Iranian schools the beginnings and endings of classes are quite disciplined. The formal teaching time is between four and five hours for each day. In elementary schools the class time is between forty and forty-five and the break is between fifteen and twenty minutes. In middle and high schools the class time is ninety minutes and the break is fifteen minutes. The students are obligated to attend their class regularly. Clothing of the Iranian boys and girls is different and the reason is nothing but the Islamic culture. Girls are required to wear uniforms whose color differ from one school to another. Boys have special uniforms for elementary schools but not necessary for high schools.

Iranian schools are managed either as a private or a state one. In state schools the budget is supplied by the government but in private schools it has to be provided by the students' parents. In state schools, teachers are employed by the education organization. However, in a private school the employment responsibility is upon the dean and under the control of education organization. In this article, I intend to examine one example of those schools which appear to be technologically more successful.

Background of the Study

This is a private school for boys which is located in northern part of Tehran and has about 400 students in 1st – 11th grade and one year pre-university courses. The school's reputed success with infusing educational technology throughout the curriculum had resulted in making it a model that draws many visitors and educators interested in implementing educational technology in their own school.

The elementary, middle, and high school are housed in separate wings. The focus of the secondary school is only mathematics. All the students pass the university entrance exam successfully and enter a university - about 40 percent in Tehran and 60 percent in the rest of the country. The campus includes an alternative education center, a football field, a volleyball field, a basketball field, 2 tennis courts, and houses for faculty and administration. There are grocery stores, businesses and convenience stores located outside the school.

The school is exceptionally well funded and the teachers are paid well. It is competitive to join the school as a teacher. Those teachers who are not comfortable with technology are trained to use technology in their teaching. There are some females in elementary school but for middle and high schools teachers are male. The classes start at 7:30 and end at 3:00. Each class last for 90 minutes with 15 minutes breaks between the classes. The racial/ethnic composition of the faculty is hundred percent White.

Few students or teachers in Iran have access to the amount and variety of educational technology to be found at Roshd School. At the time of this study, the school possessed a fully-equipped video production lab, additional video editing units, a phone-operated video delivery system available in every classroom, a satellite communication system, a live-broadcast channel, a video surveillance system, as well as one Internet capable networked computer workstation for every two students. Video-based and computer-based packaged curricula and many other networked software programs including an extensive periodical and magazine database were also available.

Prevailing Discourse

Communication of expectations for behavior shaped the adoption and implementation of educational technology at Roshd. Originating with the administration, as well as with forces within education and the larger society, this discourse, or pattern of communication, came to define the members of this educational community as technology users. This discussion will include examinations of the particular language used, marginalization of dissenters, and the shape of other particular social practices (i.e., purchasing and hiring). I will also describe the responses of teachers to these expectations for behavior, including how teachers came to participate in the social practices promoting technology, and how such expectations play out within the organizational structure of the school.

Language and Power

The hidden curriculum at Roshd worked to produce in students certain attitudes toward technology, as well as a particular sense of self. However, at the same time that students experienced the hidden curriculum, teachers at Roshd made sense of their experiences in the school in terms of history, power and discourse. For teachers, the recent history of the school, the formal and informal power configurations within the organization, and the discourse surrounding teachers as they carried out their roles as educators also worked to produce certain attitudes toward technology and a particular sense of self.

Communication of expectations was a significant part of many of the interactions that took place among participants at Roshd. Sometimes this occurred in the form of direct statements such as the principal declaring the school was "going to be a technology-based learning institution from that point on," or teachers being instructed to file their classroom inventories through a computerized form on the network. At other times expectations were communicated through attitudes and assumptions. For example, on my first visit to the school, the principal said he would e-mail the teachers a notice that I was in the building and might drop by on their planning periods. He assumed teachers would use technology to check their e-mail during the school day and would not be surprised by my appearance.

The language used by the administration to discuss and describe the nature and purpose of schools and teaching at Roshd was that of effectiveness, efficiency, and control:

- "Eligibility lists, grades, everything is done electronically on a computer and it makes us much more efficient that way."

- "I think [they] are probably more productive because they are. They know how to utilize it as a tool."

- "We have got some teachers that are 4 or 5 years behind, but they are getting there. They are headed in the right direction."

- "We have got people now that are more aggressive and adapt better to the technology."

- "When they leave Roshd they have more experience with computers than probably any other kids in other schools. And they are ready."

For teachers, this language normalized the policies and expectations for the use of educational technology, including the idea that schools exist primarily to prepare students to work. During interviews, more than two thirds of the teachers brought up the issue of students needing or benefiting from job skills. This included the computer teacher, who told me his program was designed to use the same programs used in industry. For many of the teachers, increasing students' marketability was the sole rationale for educational technology.

Teachers were also subject to expectations arising from sources other than the administration. One source was the constant stream of visitors who expected to see the teachers using technology and eagerly discussing its use. Another source was the students. Students assumed their teachers would be knowledgeable about computer use and they expressed this by adopting an attitude of a lack of regard for teacher who did not meet their expectations. In effect, this gave students a form of power over the teachers, especially in those situations where students were truly expert at using computers or teachers were particularly lacking in computer knowledge.

Another significant source for behavior that promoted computer use was from among the teachers themselves. Teachers often praised technology for helping them become more efficient, while at the same time they bemoaned the time required to hone their skills or become proficient with newly updated programs. When asked the difference between teachers who used technology and those who did not, no one expressed approval of those teachers who were, or had been, "unwilling to change," nor for their reasons for refusing to use technology.

Silencing
According to De Marrais and Le Compte (1999), "Postmodernism holds that dominant groups have controlled not only access to knowledge, but the standards by which knowledge is judged valuable and legitimate" (p. 35). Here, we must question who controls the discourse, who is authorized to speak and who is not authorized. The silenced are those who are not allowed to contribute to the discourse because they voice resistance. They are outside the mainstream, marginalized or ignored (Gore, 2003).

There are several teachers at Roshd whose actions suggested that they did not want to use technology. They rarely used it themselves, and permitted, but did not require their students to use computers. However, most of those same teachers spoke as if they supported the use of technology. One of those who rarely used technology couched his opinion in a positive manner as he explained, *"I try to point out that there is still book, knowledge to be received from books and each other and other areas."*

Those who resisted educational technology at Roshd were categorized and understood as having problems that required solutions; students needed to be shown the value of computers to their futures, and teachers needed to be educated to the value of technology for their students or in how to operate the technology. One of the most telling comments – from a teacher who claimed that he objected so strongly to having to use technology in the classroom that he had retired early – was *"he [the principal] would not like you talking to me."*

Other Social Practices
Other discursive and non-discursive practices defined teachers and students as users of technology as well, and thereby helped eliminate the possibility of avoiding technology use. These practices included the message engendered by the presence of the computers themselves. According to Turkle (2005) the machine is presented as a way of asserting status, a way of saying that this is someone who has not been left behind. Some teachers reacted to the excitement of computers, as well as to their perceived desirability.

Discourse of this nature conveyed the importance of technology and was a nearly constant feature of everyday life at Roshd. Such discourse also involved public recognition of those who used technology, marginalization of dissenters, and the shape of particular social practices (such as purchasing, hiring, and providing technical support). I will discuss each of these in the following sections.

Recognition

The image of the model school was actively cultivated at Roshd. Those teachers and students who were most involved in the use of technology were continually asked to display their expertise. Teachers were accustomed to visitors in their classrooms, and the school has held whole-school assemblies for students' technology presentations.

Their reputations as leaders in technology, along with expectations from administrators who had invested large sums in equipment and who also had a stake in upholding the image of model school for technology, worked to create pressure for teachers to adopt the use of technology.

Purchasing Practices

Often it seemed that purchasing decisions received more time and consideration than the pedagogical decisions regarding why a certain technology should or should not be used in classrooms. Perhaps the general mindset at Roshd, and in society at large, that held that the use of advanced educational technology represented progress, made such decisions of pedagogy seem unnecessary. The administration made it clear that it considered the use of technology to be what was in the best interest of the students. And it seemed to use technology expenditures as a way to focus on the school's vision of making students technology literate.

Purchasing decisions often seemed to spring from what new technology might be available for instructional use. A teacher confided that he knew a suggestion to purchase a certain software package would immediately pique the interest of the administration and would be received well because it was technology. Another noted that the administration was

Always trying to bring our kids the latest things so that they are on top of the world. They are always searching for them and looking and bringing to us.

Curriculum for Teachers

With the continual advancement in computer technology, being a model school meant maintaining the image of a school that has state-of-the-art technology. This was dependent on continually upgrading expensive equipment and continually training the staff and students in how to use newly acquired technology. This was accomplished by providing teachers what was in effect a curriculum of their own through mandatory staff development. The goals for the faculty were as follows:

- Teachers will comprehend, accept, and evolve into the role of an educational facilitator.
- Educational facilitators will master the use of information and communication technologies
- Provide a guideline for the purchase and adoption of new technologies.

Hiring Practices

Technology and its use had increased in importance with regard to the choice of new teachers for Roshd. Prospective teachers were asked not only what experience they might have with educational technology, but also whether or not they would *"be willing to come in a week or two before they are employed to get used to learn a few of these programs."* However, the principal said of most teachers with even 5 years classroom experience without computers, *"when you bring them into the technology environment they still feel safety and security in their past experience."* Therefore, he had made the decision to hire first year teachers, those without classroom experience. He explained,

The reason I went with first year teachers is because they are coming out of university and I hired people that were . . . would have had some technology experience. But I hired people that were aggressive, highly motivated, that were willing to step in to this environment and would be willing to learn it quickly.

This view of beginning teachers seemed to be based, in part, on the premise that learning to teach result from socialization into the status quo (Britzman & Greene, 2003). Those teachers whose understanding of teaching had not yet undergone reutilization when brought into an environment in which the use of technology was not only expected but was the norm, would be more likely to adopt its use themselves. Socialization into the use of technology would more likely result from the mentoring of co-workers who

used technology, and from the first year teacher's desire to gain the respect and recognition afforded to those who projected the image of leaders in technology use.

The principal view of first year teachers also recognizes to some extent, the difficulty of becoming proficient with educational technology and values the determination of those who are willing to commit to gaining skills and experience in its use. The resolution to develop a faculty composed of teachers who "will master the use of information and communication technologies," at the risk of "a lot of the making first year mistakes," sends a strong message to those teachers who are not already "on board with technology." It tells them that they are less valued. Again, a non-discursive practice conveyed expectations and in a sense, defined the normal and abnormal.

Teachers Responses

Meeting Expectations
At the time of this study, in the eighth year of technology use at Roshd, 7 of the teachers interviewed at the secondary school had taught there at the time technology was introduced (8 years or longer). Most of these teachers had accommodated themselves to the expectations of teaching in a model school for technology. Toward the end of my research, in an impromptu visit, one of them admitted,

I am probably not a really good person to ask because I usually just accept things and go on so . . . I would just know that that is the way it was and use it. So, you have asked me more thought-provoking questions than I have ever run across.

Another replied when interviewed,

> *We are expected, I think, to produce and perform more than other schools, and teachers. We are expected to promote Roshd and umm. I think that's been beneficial because you can become too comfortable. Change is a part, and you expect it to be a part of this job here.*

A third reported he felt he had to use the technology that was provided, as another measure that he was accomplishing the schools' goals.

Regarding the pressures some teachers felt to adopt the use of technology, one responded, "technology was so foreign to them, that it was scary to think that you had to do this. And that maybe your job depended on you getting on board and doing what you are with this technology thing." This seemed to be a common understanding. Being a career teacher was similar to having tenure and meant that those teachers could not be terminated for refusing to use technology. This in effect allowed teachers some leeway to resist the various pressures to adopt the use of technology. However, the legality of not being subject to termination did not protect those teachers from the pressure to comply nor from the discourse, at Roshd and in the educational community in general, that constituted them as refusers.

Satisfising
Teachers commonly spoke of the necessity for technology competency for students, while some still seemed to covertly refuse technology use for themselves. Some of these teachers required students to use computers in their classes but chose forms of use, such as Internet research, that did not require much teacher participation. These teachers came to project an image of the acceptance of technology, or as Hodas (1993) put it, "a trial-and- error rummaging through Standard Operating Procedures to secure a satisfising response" (p. 3). Satisfising, in the sense of "satisfying" and "sufficing," or giving the appearance of compliance, relieved the pressure to change by finding a way to deflect it. It was a coping mechanism that was commonly known but not often openly acknowledged. A few teachers volunteered, "There is considerable resistance from teachers who have been at the school for some time against using technology. Some don't use it much."

While I was getting acquainted around the school early in the research, a teacher who had taught there several years disclosed to me that his classes did not really use technology. His classroom was one of

two that each had a teacher workstation but no student workstations. (When I asked the technology support personnel about this, I was told that teachers had to request that computers for students be replaced in their rooms because locating equipment in places where it would not be used was a waste of time and funds.) Several weeks later in an interview, although he talked about students needing technology "to get them ready for the real world."

That all teachers do not spend the significant amount of time and energy required to learn and to implement new technologies had long been considered a problem. Most researchers have "blame[d] the stubborn backwardness of teachers or the inflexibility and insularity of school culture" (Hodas, 1993, p. 12). However, technology's promise of improved teaching has implied a direct criticism of teachers' work, and some researchers have recently proposed that teachers may have many valid reasons to resist. These include 1) challenges to traditional classroom authority, prestige, and ways of working and relating to others, 2) contradictory advice from experts, and 3) unreliable and intractable technologies (Cuban, 1999; Hodas, 1993).

The teacher, whose ways of teaching have been dependent on the prestige and authority accorded teachers in the past, is often reluctant to employ the more constructivist ways of teaching that may be advocated by those promoting the use of technology. At Roshd, that teacher may find himself in a double bind. His sense of himself as a teacher may be threatened because to be a co-learner or facilitator of technology, means that he is no longer seen as the sole competent authority and no longer retains power and control in the classroom (Burke, 2005). However, it is exactly this role of educational facilitator, master of information and communication technologies, which is specified in the Information and Communication Plan for faculty. Additionally, it appears that students at Roshd regard a teacher less highly if he is not competent with technology, and furthermore, the prevailing discourse of the both the local and broader educational communities constitute his as a refuser, resisting the progress afforded by technology.

Cuban's (1999) reason for teacher resistance to technology involved teachers receiving contradictory advice from experts. At Roshd this seems, for the most part, to come in the form of too much technology. Teachers are bombarded with training by technical support personnel charged with seeing to it that teachers are trained in the use of all technologies and constrained by the expectations of administrators who hope to see their acquisitions put to use.

As to Cuban's (1999) other reason for resistance, the unreliability and intractability of technology can be said to be inherent in much of today's state of the art technology despite the best efforts of the technical support personnel. At Roshd, for example, the computer teacher reported the system e-mail was not working for several weeks during the school year in which this study took place. Such problems might reasonably be expected to be common when dealing with pilot projects as Roshd does.

Conclusion

In this time of unprecedented support for educational technology, this study focused on the complex network of socio-cultural forces that affect educational practices. It highlights the contradictions and conflicts between the uses of technology to reform schools and enhances student learning and the intransigence of the social organization of schools and the culture of teaching (Winn, 2002). Such an investigation helps provide an understanding of the theoretical and practical issues of integrating educational technology into tomorrow's classrooms.

The communication of expectations for behavior shaped the adoption and implementation of educational technology at Roshd and defined the members of this educational community as leaders in technology use. The language used to describe the nature and purpose of schools and teaching at Roshd was that of effectiveness, efficiency, and control, and thereby, normalized the use of educational technology. Those who voiced resistance were labeled as refusers, while those who met expectations about technology use received public recognition and validation through purchasing decisions and technical support. Teachers commonly spoke of the necessity for technology competency although some still seemed to covertly refuse technology use and to project an image of the acceptance of technology, a satisfying response.

It is characteristic of our rational that many people viewing Roshd from within and from without, assume that the technological solution of implementing educational technology has been responsible for any improvement in student achievement.

This perspective defines the problem in such a way that it narrowly focuses on the mechanisms of student learning, rather than including the examination of the social meanings of technology use such as attitudes and opinions of teachers, students, and others. The unquestioning approval of technology by students, as well as faculty and administration would seem to exemplify the mindset feared by those whose writings seek to warn us of the inherent biases of technology (Feenberg, 2010). The perception that technology *"has made teachers more efficient"* constitutes one more way of promoting "compulsory enthusiasm" for educational technology both at Roshd and around the country. The valuing of science and technological solutions employed in a metaphor of organization and production, has shaped a perception of reality. While not dismissing the necessity for technological literacy, this research uncovers and illuminates the non-neutrality of educational technology and emphasizes the need to guard against negative implications of its use.

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