‘To err is human, but to persist is diabolical’: Loss of organizational memory and e-learning projects

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Abstract

Many countries around the world install millions of computers, printers, projectors, smartboards, and similar technologies in primary and secondary schools to equip new generations with the ability to effectively access and critically evaluate information and communication technologies. However, experiences from different countries show that technology does not deliver educational success itself. There are some “chronic” problems hindering the effective use of educational technology. This article aims to identify reasons behind the repetitive problems which occur in the context of Turkey's e-learning efforts in primary and secondary learning. The focus is to find out why an organization repeats the same mistakes and has to reinvent the wheel in similar consecutive projects. This study has a qualitative design – more specifically phenomenological design. The main data collection tools were semi-structured interviews with Turkey's Ministry of National Education (MoNE) authorities, academics, employees and consultants, as well as document analysis. Qualitative data were collected from these figures via face-to-face interviews so as to understand the experiences and perceptions of those involved in large projects and to gain their interpretative descriptions of their experiences. Findings showed that MoNE could not capture, organize, disseminate, or reuse the knowledge and experiences gained during the project life cycles – in short, it could not keep its organizational memory which will be useful to guide the managers of future projects.

1. Introduction

Many countries around the world have been spending enormous resources to integrate information and communication technologies in education in order to respond quickly to the changing needs of both economic and social life. Both developed and developing countries install millions of computers, printers, projectors, smartboards, and similar technologies in primary and secondary schools to equip new generations with the ability to effectively access and critically evaluate information and communication technologies (ICT) (Özdemir & Kilici, 2007). However, experiences from different countries show that technology does not deliver educational success itself; it only becomes valuable in education if learners and teachers can do something useful with it (Somyürek, Atasoy, & Özdemir, 2009). For example, technology integration efforts did not result in the expected educational performance and quality improvements in certain OECD countries (OECD, 2001). Different countries' experiences show that effective ICT use in education requires a holistic integration process based on careful planning involving numerous critical components, such as hardware and software purchasing, in-service training, technical and pedagogical support, financial resources, and curriculum integration (Aduwa-Ogiegbaen & Iyamu, 2005; Baskin & Williams, 2006; Blanton, Schambach, & Trimmer, 1998; Niederhauser & Stoddart, 2001; Osin, 1998; Warschauer, 2003).

Compared to developed countries, developing countries have to be particularly careful on ICT integration projects funded largely by foreign sources. Lack of return of investments can cause tax payers and political decision makers on education budget to doubt the effectiveness of technology in the learning process. Therefore, research from different countries that focus on the obstacles to, and solutions for, the effective use of ICT in education is quite important to share their positive and negative experiences with other countries that aim to integrate ICT in educational settings successfully using limited financial resources.
The employment of ICT in education is a complex process comprising intricate components, much like the pieces of a puzzle. Each piece should fit the others well in order to form a complete picture. Data from different countries indicate that successful ICT integration requires interlocking components, such as purchasing hardware, in-service training for staff, curriculum integration, financial resources for maintenance, technical and pedagogical support, and an adequate amount and quality of digital learning material. Lack of one of the components may cause the failure of the whole integration process (Özdemir, 2009).

As a developing country with the 17th largest economy in the world, Turkey has been investing enormous financial resources in reforming its educational system in the last decade. The main goal of these investments was to increase the quality of education with the help of technology. The investments were realized through several projects, such as Basic Education Project I (BEP I) (1998–2003), Basic Education Project II (BEP II) (2004–2007), and the Education Frame Projects I and II (EFP I and EFP II) (2002 and 2007). The total budget of the projects was approximately $US 700,000,000, funded by the World Bank and European Bank for Reconstruction and Development. The investments of projects included hardware purchasing, building construction and restoration, and in-service training.

In the context of these projects, thousands of schools were equipped with computers, printers, projectors, educational materials and internet access. As of today, Turkish primary and secondary schools have a substantial amount of ICT hardware compared to their resources in 1998. By 2008, 98% of secondary school students and 93% of the primary school students are provided with Internet connections in their schools via ADSL. According to the ICT Integration Baseline Study (MoNE, 2007b) prepared for MoNE by academicians from three universities in Turkey, primary school/computer ratio is almost 30 (N = 302). On the other hand, researches done by Turkish academicians (Akbaba-Altun, 2006; Akkoyunlu, 1992, 1995; Çağltaç, Çakiroğlu, Çağltaç, & Çakiroğlu, 2001; Kiliç & Özdemir, 2006; Özdemir & Kiliç, 2007; Somyurek et al., 2009; Toprakçı, 2006; Usluel & Aşkar, 2002; Usluel, Muncu, & Demiraslan, 2007; Yıldırım, 2007) and reports prepared for Turkey's Ministry of National Education (MoNE) (MoNE, 2004b) reveal that there are some "chronic" problems hindering the effective use of educational technology. The reason to use the word "chronic" is to highlight the repetitive problems "reminding one of déjà vu" (Özdemir, 2009). Turkish academicians point out the lack of adequate educational software, the low quality of in-service training for staff (i.e., teachers, administrators and inspectors), the lack of ICT integration in curriculum, and lack of financial, technical and pedagogical support to schools. The projects' budgets were not allocated in such a way that considered all the needs that make ICT use in educational contexts most meaningful. Instead, financial resources were spent primarily for hardware purchasing. During the data collection period in this study, one of the interviewees who was an academician and charged by MoNE as a manager for different projects stated that the purchasing and construction percentage in project budgets is 92% and just 8% is spent for other needs such as in-service training, curriculum development, and technical and pedagogical support in education projects.

Before large ICT integration projects were initiated, several scholars raised concerns about the lack of a plan that could address all the components needed for a successful integration process (Akkoyunlu, 1992, 1995; Özar, 1996). In Özar's research, fifteen policy makers of MoNE expressed that plans for ICT integration did not address curriculum integration, educational software, and teachers' qualifications for ICT use. According to Özar, the reason behind the lack of a successful integration plan was that policy makers did not understand ICT's importance for educational settings. Research studies conducted at different times showed that, due to poor planning, Turkish teachers had almost the same complaints and problems in successive years (Akbaba-Altun, 2006; Akkoyunlu, 1995; Kiliç & Özdemir, 2006; Usluel et al., 2007; Yıldırım, 2007; Özdemir & Kiliç, 2007). All of the large projects allocated insufficient funding for staff training. Some of the teachers, principals, vice principals and inspectors were able to take computer literacy training, but no in-service training were supplied to them about the adequate methods or leadership/supervision for ICT use in educational contexts. Somyürek et al. (2009) suggest that training for educational staff should be ongoing and that integration plans should also consider long-term training sessions so that staff can apply newly-introduced skills.

Why does an organization repeat the same mistakes and have to reinvent the wheel in similar consecutive projects? A careful observation of ICT integration projects in Turkey and a review of relevant literature raise two questions:

- Is loss of organizational memory a factor causing the repeated mistakes in MoNE's large ICT integration projects?
- What kind of mechanisms does MoNE use to retain gained knowledge and experience in these projects?

This study aims to find out whether loss of organizational memory is a problem behind the repetitive problems such as lack of adequate educational software, the low quality of in-service training for staff, lack of ICT integration in curriculum, and lack of financial, technical and pedagogical support to schools in the scope of four large ICT integration projects (BEP I, BEP II, EFP I and EFP II) with regard to the aforementioned questions.

2. Organizational memory and its loss

Knowledge is a key asset for organizations. However, some organizations tend to forget and lose what they have done in the past and why they have done it – in short, they lose their knowledge and memory. This asset can be extended by capturing, organizing, disseminating, and reusing the knowledge created by its employees (Conklin, 1996). Kransdorff (1998, p. 35) defines the concept of organizational memory (OM) – sometimes called corporate memory – in his book “Corporate Amnesia” as the “learned product of group experience and the sum total of shared beliefs and knowledge”:

“Organizational memory is knowledge accrued from experience. It is the non-technical ‘how’ of doing things… Embedded in the personally held skills of individuals, it is the essence of being practical, ownership of which enables, for example, a good theoretician to also become a good practitioner. In terms of management, it would be described as corporate enterprise, the craft of entrepreneurship or the technique of being a good businessman. Its awareness provides the type of expertise that is simultaneously an organization’s adhesive and lubricant that both keeps it together and allows it to operate smoothly and efficiently.”

According to Walsh and Ungson (1991), OM is the accumulated information taken from an organization’s history that can be used to make decisions in the future. Organizations are not able to make decisions efficiently without its previous knowledge. Being aware of how existing institutional knowledge was created guides an organization in creating more accurate new knowledge which is crucial for
a competitive performance (Calantone, Cavusgil, & Zhao, 2002). Organizational memory is a tried and tested intellectual property that can shape future performance of an organization (Kransdorff, 1998). Prior data and information – all documentation including e-mails, contracts, proposals, reports, copyrights, work processes, procedures, products and individual employees with vast majority of memory in their heads – comprise the organizational memory (Inmon, O’Neill, & Fryman, 2008). High employee turnover, poor knowledge management, poor archiving, non-social working climates that hinder the sharing of knowledge, ignorance of the importance of tacit knowledge, and lack of organizational learning from own or others’ experiences all result in the loss of organizational memory and discontinuity within an organization.

Almost all learning is evolutionary and it occurs incrementally from the building of one experience on top of another. A baby walks by first taking a single step and, having negotiated that successfully, the child takes another. What happens if a baby forgets her first step? She falls down and cries because of her failure. According to Kransdorff (1998), an organization fails like a baby if it cannot succeed in knowledge management and the preservation its organizational memory. He names the loss of organizational memory “corporate amnesia.” In the book “Corporate Amnesia,” Kransdorff claims that no organization is exempted from reinventing the wheel and repeating the same mistakes in the case of corporate amnesia (p. 35):

“Without it (OM), organizations – even if they employ the most qualified people in their field – run like a gearbox without oil. It is assu-
redly the single most important element of any organization’s success or failure.”

Researchers regard organizational memory and learning as an important influence on the success or failure of an organization and as a dynamic concept that emphasizes the changing nature of organizations (Achrol, 1991; Dodgson, 1993; Fiol & Lyles, 1985; Garvin, 1993; Ottoy et al., 1996). Organizational learning supports the employees’ acquisition, retention and retrieval of organizational memory and may occur from two sources. Other firms’ experiences (vicarious learning) and the firm’s own experiences (experiential learning) (Baum, Li, & Usher, 2000; Dodgson, 1993) are the key knowledge resources. In vicarious learning, a firm tries to learn from other firms’ past operational failures by observations and analyses (Bierly & Chakrabarti, 1996). Organizations employing vicarious learning do not pay any learning cost, because it was paid by others. Similarly, experiential learning requires careful examination of past projects and works within the firm to capture knowledge for future use (Kransdorff, 1998; Spear & Bowen, 1999). Kransdorff defines four different types of experiential learning. Unconscious learning is entirely unstructured and random. An employee does not recognize the learning and knowledge acquisition at the time she or he experiences the events. Like unconscious learning, incidental learning is also unplanned, unstructured and random based on chance circumstances, but this type of learning occurs when a person ponders over incidents like mishaps or frustrations. Retrospective learning involves deliberate reflection on incidents with the clear intention of reaching conclusions. Similar to unconscious and incidental learning, this type of learning is usually triggered by mishaps and mistakes but it also includes routine events and accomplishments. Due to its grounding in a conscious intention to learn, the quality of erudition is often superior to unconscious and incidental learning. It may occur through the use of case studies, internal audits and post project reviews. Prospective learning, the most effective in terms of averting repeat mistakes, is the proactive intention to learn before an experience takes place through the examination of cases, post project reviews and oral post-mortems.

Some global and international companies are aware of the importance of experiential learning. Kransdorff (1998) gives important examples from huge companies. For instance, British Petroleum – a petroleum exploration and refining company – has a special unit to distill lessons from the large investments they have made: project planners can then incorporate such lessons into future plans. Another example is Chaparal, one of the largest steel-makers in the United States. After each project’s completion, the company analyzes what is achieved, or what failed and why. Similarly, Hewlett-Packard charges its 56 research and development centers to do post-mortems in order to investigate the events and procedures that affected projects’ successes or failures. These findings are shared across all units in the company in order to support organizational learning and memory. One well known experiential learning example comes from Boeing. A group of senior Boeing employees spent about three years comparing the failures and successes of past projects before the company started to develop its famous 757 and 767 aircrafts. As a result, the team identified hundreds of lessons for the company. With the guidance of past experiences, Boeing completed the most problem-free project in its history. At Xerox, service technicians were forced to go beyond just reading technical manuals to successfully repair copy machines. The technicians began to share their own knowledge and experiences unofficially in microcommunities, because when individuals share their knowledge in a group, others need to justify what they believe before acting on it. This sharing helped Xerox to develop a new way to solve highly complex problems (Von Krogh, Ichijô, & Nonaka, 2000).

Walsh and Ungson (1991) argue that each individual employee acquires new knowledge in problem solving and decision-making activities and that this knowledge forms the core of organizational memory in time. Today’s employees do not only need good education and training, but also the opportunity to work together in collaboration with others to share different values, beliefs, and experiences to solve complex problems (Conklin, 1996). The Toyota Production System, a benchmark for all other automotive companies, is one of the outstanding manufacturers in the world. According to Spear and Bowen (1999), Toyota’s scientific production method was not written down or chosen consciously. Instead, it grew naturally based on 50 years’ experiences. Even though Toyota’s employees are unable to articulate what they know about the production process, they can easily apply whatever they know. Toyota managers employ experiential learning through discovery learning and problem-based learning methods to equip workers with the company’s rules.

The knowledge needed to keep organizational memory is not centrally stored but distributed across a whole organization. Walsh and Ungson (1991) define five internal storage bins and one external storage bin where knowledge needed for vicarious and experiential learning exists. While internal storage bins are individuals, organizational culture, transformations, structure and ecology, the external storage is the archives. Kransdorff (1998) adds another external bin, “other organizations’ history” which is the cheapest knowledge source. This study will focus on individuals, organizational culture, and other organizations’ history in order to analyze the Turkish Ministry of National Education’s case.

Individuals are one of the major OM holders based on their own experiences and observations. They store OM in their own memory, beliefs, cause maps, assumptions and values, and they employ these experiences and stored knowledge to facilitate work. Culture is the learned way that an organization transmits to its employees about the perceptions of the problems. Culture is composed of past experience that can be helpful for dealing with the problems in the future. A legitimate language (Von Krogh et al., 2000), shared frameworks, symbols,
3.1. Research design

and negative knowledge and experiences could be uncovered. MoNE administrators, academicians, employees and national and foreign consultants. Throughout the study’s interviews, diverse perceptions were recorded when possible so that positive and negative knowledge and experiences could be uncovered.

3. The study

This study is designed to investigate whether loss of organizational memory is a factor triggering the problems related to ICT integration projects in educational settings in Turkish schools. The aim is to look for and to describe why organizational memory is lost, and to determine how it can be retained in an organization based on the opinions and experiences of MoNE administrators, academicians, employees and national and foreign consultants. Throughout the study’s interviews, diverse perceptions were recorded when possible so that positive and negative knowledge and experiences could be uncovered.

3.1. Research design

This study has a qualitative design—more specifically phenomenological design. According to Van Manen (1990), phenomenological research can document “the essence of lived experience” such that others can learn from these experiences. To collect data on how people experience some phenomenon—how they perceive it, describe it, judge it, and remember it—in-depth interviews with people who have directly experienced the phenomenon and lived the experience is the best way (Patton, 2002). In this study, the main data collection tools were semi-structured interviews with MoNE authorities, academics, employees and consultants, as well as document analysis. Since this type of questions allows an interviewee to talk everything in the scope of the questions and two-way communication between an interviewer and an interviewee, semi-structured questions in interviews are one of the most convenient ways to collect data in a qualitative research design especially if there is a limited time and chance to complete the interviews (Bernard, 1988; Patton, 2002). Qualitative data were collected via face-to-face interviews so as to understand the experiences and perceptions of those involved in large projects and to gain their interpretative descriptions of their experiences.

3.2. Interviews and analysis of collected data

Before conducting interviews, relevant articles, books, and formal MoNE reports and regulations were analyzed in order to find out what kind of organizational memory retention activities were planned and realized in the scope of BEP I, BEP II, EFP I and EFP II. After this analysis, semi-structured interview questions were prepared; their clarity and content validity were assessed by two experts who were the academicians in the field of educational technology. In a short introduction prior to each interview session, the purpose of the interview was briefly clarified by the interviewer. Each interviewee was asked about his or her interpretation, knowledge and experiences related to the repeated problems which MoNE had experienced in consecutive projects (for interview questions see Appendix A); MoNE’s organizational learning capacity from its own or other organizations’ experiences; and organizational memory acquisition, retention and retrieval methods MoNE used during large projects. The researcher took notes during the interview sessions. After each interview session, the respondents were asked if there were other aspects that seemed important to them.

Nine employees who had interpretations of and experiences with MoNE’s large education projects were interviewed. While three of the interviewees are currently managers in MoNE and are responsible for projects, three of them are academics in Turkish Universities. One of the academics was employed as a national consultant on MoNE projects and two academics were employed by MoNE on large projects as either national consultants or managers in the past. Two of the interviewees are the MoNE employees involved in the BEP II. One interviewee is a foreign consultant who worked for MoNE as an education expert in Support to Basic Education Program (SBEP) project, which was conducted to support BEP I and BEP II. The mixed structure of the interviewee list helped to reflect different standpoints on the implementation of large projects.

The collected data were coded and collated according to the principles of verbal data analysis (Chi, 1997). Since the number of interviewees was modest and they supplied a manageable amount of data, data reduction was not needed.

4. Findings and discussion

The findings related to the research questions are presented below in light of the data collected through interviews, and document and literature reviews.

4.1. Is loss of organizational memory a factor causing the repeated mistakes in MoNE’s large ICT integration projects?

The robust consensus amongst the interviewees is that MoNE does not preserve the knowledge and experiences occurring through large ICT integration projects, so it does not retain organizational memory which would be a guide in future projects. All interviewees concurred with this observation and agreed that loss of OM may be one of the important factors triggering other problems hindering effective ICT use in the Turkish education system. Two of the current managers and one of the academics who also worked as a manager for MoNE indicated
that some of the top managers of MoNE were aware of the problem and, as such, made several attempts to maintain OM such as digitizing and indexing project reports and documents. However, because of political interferences and high staff turnover, including top managers, these attempts could not create the expected results.

4.2. What kind of mechanisms does MoNE use to retain gained knowledge and experiences in the projects?

The literature review and interviews revealed that there was no systematic organizational memory retention activity or mechanisms in the ICT integration projects in MoNE. None of the formal MoNE reports prepared by Turkish academics or World Bank experts in the context of BEP I and BEP II include a chapter on activities designed to support organizational learning or to preserve organizational memory gained in these projects (MoNE, 2002, 2004a, 2007a; World Bank Document, 2001, 2002a, 2002b, 2008). In addition, MoNE's formal policy documents between the years 1998 and 2007 lacked plans to support organizational learning or preservation of organizational memory gained in the projects (MoNE, 2001; MoNE, 2004a). The interviewees also declared similar opinions with the document-based findings. Interview data relevant to this research question will be presented alongside discussion of OM storage bins (Kransdorff, 1998; Walsh & Ungson, 1991) in order to link findings with scholarly literature: individuals, organizational culture, and other organizations' history.

Individuals are one of the major OM holders based on their own experiences and observations. Despite of the importance of employees for the retention of OM, all interviewees indicated that the first and the major problem causing the loss of OM is high employee turnover during the lifecycle of MoNE projects. One of the MoNE managers, two academics and the foreign consultant, stressed that high staff turnover includes employees and managers. The foreign consultant emphasized that in his project, “they had at least seven project directors. Even if major efforts were put into building the capacity of national and provincial teams in project planning, many of the teams changed in short time intervals.” One of the academics who also worked as a manager for MoNE projects said that “employee turnover was so high that each project (was) started by a group of people, but completed by a different group of people.” High staff turnover causes fleeting knowledge in an organization. If steps are not taken to preserve this organizational asset, the elusive knowledge and experience disappear with each employee's departure. While Kransdorff (1998) describes this pattern as “hard-won and expensively-acquired experiences walking out of the front door,” Inmon, O'Neil, and Fryman (2008, p. 93) point to the risk for organizations:

“When each person leaves the corporation, a piece of the metadata repository is leaving, and potentially critical corporate knowledge goes out the door with him or her.”

Since there was a high staff turnover within the MoNE’s BEP I, BEP II, EFP I and EFP II projects’ life cycles, there was no opportunity to use the same staff in consecutive projects. Each project had different groups of staff. According to Kransdorff, organizations should create a “knowledge map,” identifying the organization's key staff whose knowledge and experiences are considered important for the success of operations. After creation of such a map, these key employees' oral debriefings can be recorded at regular intervals in order to reference and employ their elusive knowledge and experiences in future projects. Two-thousand oral debriefings were recorded in order to preserve staff members’ expensively-acquired expertise when US Government decided to stop testing nuclear weapons. The US officials were concerned that the acquired knowledge and the skills will atrophy in time. So, they started Knowledge Preservation Project in order to keep the expensively-acquired knowledge and skills that were accumulated over the years and may be needed again in the future (Kransdorff, 1998).

Another reason causing the loss of OM is the high number of units that are responsible for with the execution of projects. The Project Coordination Center (PCC), General Directorate of Educational Technologies, General Directorate of Primary Education, General Directorate of Personnel and Provincial Directorates in each city were responsible for the implementation of BEP I, BEP II, EFP I and EFP II. Since PCC had little authority over other units on the selection of project staff, each unit selected and changed its project employees based on its unique (own) criteria. In addition, knowledge, experiences, documents and reports created in the projects were not systematically stored, digitized or indexed for use by new project staff due to the dispersed structure of project management teams. One of the MoNE managers explained that “you cannot find any document or report of BEP I and BEP II easily. You should go to dusty archives and look for what you need, but most likely you will not be able to find it, because what you look for may be in one of the responsible unit's archive(s).” Another manager in the interviews mentioned that his unit started to use a document management system in 2008. Even though all the reports and documents are stored in a server in this system, they are not indexed so this system does not allow users a keyword-based search; accessing the needed information will not be easy. Moreover, just preserving documents may fail to preserve the context which gives the documents meaning. The context of a document is the very thing that allows it to be useful in the future, even if the context changes. Organizational memory is not just ability for accumulating and preserving, but also for sharing knowledge. While preserved documents are useful to solve simpler problems, solutions of wicked problems require more social interactions among employees (Conklin, 1996).

Just digitizing and archiving documents and reports does not guarantee their use by employees for decision-making in the projects, because the written materials may not contain essential tacit knowledge. An employee may have personal knowledge embedded in her head. She may use it without being able to articulate it, and she may be unaware of the existence of this knowledge in her head (Dretske, 1988; Nonaka, 2005; Polanyi, 1966). Drucker (1992) states that tacit knowledge cannot be articulated in words, but it can be transferred through apprenticeship and experience.

“Japanese companies recognize that knowledge expressed in words and numbers represents only a small part of the exercise in new knowledge creation and decision-making. They view knowledge as being primarily tacit, a characteristic which is also deeply rooted in an individual’s action and experience, as well as in the ideals, values or emotions embraced” (Kransdorff, 1998, p. 48).

Thus, retention of OM requires more than document management. Tacit knowledge transfer between staff is one of the important components of organizational memory and learning. Organizational culture is the learned way that an organization transmits to its employees the perceptions and thinking of the problems and tacit knowledge. Social interaction can help tacit knowledge transfer among staff. However, high staff turnover in MoNE’s projects harms the construction of an organizational culture because the staff does not have adequate
time to develop a legitimate language, or set of symbols, stories and sagas. In addition, since each project’s staff is part of more than one or two units, they do not have a shared framework. The staff members in different units and different cities rarely come together for in-service trainings or formal meetings. The foreign expert in the interviews drew attention to “study visits.” The aim of the study visits in one of the MoNE’s projects is to visit the pilot schools, units and cities in order to collect experiences and good examples, and to observe progress in order to share with the project groups. The study visit team is composed of national and international experts and authorities from MoNE. According to the foreign expert:

“The study visits, in theory, are a great way for building capacity. However, in my experience, these are nearly always abused. The wrong people are sent on study visits for the wrong reasons! The potential benefits end up being lost.”

Since the wrong people are sent for the wrong reasons, the intended knowledge and experiences could not be collected and shared among staff. One of the academics emphasized that the reason that the “wrong people” were being selected could be explained by the staff selection criteria. Different units hire staff based on their own criteria, but these criteria were not developed using scientific methods. Actually, collaborating with the universities, MoNE could develop hiring criteria to match the needs of the projects with the skills and knowledge of the employees to hire. The authorized managers select staff based on their personal relationships instead of on the staff’s adequate abilities and skills.

“History provides experience cheaply” (Kransdorff, 1998). The experiences lived in other disciplines and organizations can be a source for organizational learning and memory. Three MoNE managers and three academics admitted that MoNE did not benefit from other countries’ similar projects. The project managers did not search other countries’ past projects’ reports or documents, nor did they interview with other countries’ project authorities and experts. For example, Chile’s Enlaces projects, started in 1992 with the financial support of World Bank (Hepp, 1998; Potashnik, 1996; World Bank Document, 1998), had quite important similarities with Turkish projects (e.g., the projects’ aims, both countries’ socio-economic status, financial resources for the projects, etc.) Turkish authorities could have learned much from Enlaces if they had intended to learn from others’ experiences. The Enlaces project is an important model for similar projects, such that it can provide important planning and implementation lessons based on the experiences of teachers and students; investments in hardware, networks, and educational software; and technical and pedagogical support to each school with the help of 24 different universities. For example, Enlaces’ teacher training strategy could have been a guide for MoNE managers. Enlaces’ teacher training program shows a commitment to supply ongoing support with the help of universities. On the other hand, in Turkey’s case, the number of in-service trainings supplied and the quality of the supplied trainings were quite low (Yıldırım, 2007; Özdemir & Kılıç, 2007). Instead, MoNE cooperated with several Turkish universities for some in-service trainings and consultancy of academics. This cooperation was not permanent or planned for the projects’ life cycles. A report prepared by the LearnLink Project funded by the US Agency for International Development (USAID) reports several lessons learned from the Enlaces project:

- Gradually introduce computers into schools and integrate the technology into teaching and learning activities.
- Decentralize technical assistance and training.
- Use robust processes for assessment, monitoring, and evaluation.

Osin’s (1998) recommendations are parallel with LearnLink’s recommendations such as “do not start your project by buying computers.” “do not start a project before assuring long-term budget coverage,” “create cadres of instructors for teacher training,” and “plan formative and summative evaluations.”

Taking others’ experiences into consideration is surely a fruitful guide, especially for developing countries that invest in educational ICT use with loans granted by foreign sources. Two academics who worked for MoNE as managers indicated that manager and employee selection criteria for the projects are again the source of this problem. The selected managers could not see the big picture, but instead focused on bidding on hardware and constructions. Since managers know that they do not have long in their positions, each one wants to show his or her abilities by doing something visible.

5. Conclusion

The aim of this study is to investigate whether loss of organizational memory causes several repeated mistakes such as the lack of adequate educational software, the low quality of in-service training for staff (i.e., teachers, administrators and inspectors), the lack of ICT integration in curriculum, and lack of financial, technical and pedagogical support to schools in the ICT integration into education investments in Turkey. The researcher expected that identifying the problem underlying the barriers to effective use of ICT in education could particularly help developing countries to use their limited financial resources more productively and to make better returns on their investments. The necessary data was collected in two steps via a literature review and interviews with the staff hired in these MoNE ICT projects. Data collected from the document analysis and the interviews imply that high employee turnover is one of the major causes of organizational memory loss in MoNE projects. The findings are consistent with interpretations of management literature (Kransdorff, 1998; Von Krogh et al., 2000; Walsh & Ungson, 1991): loss of organizational memory typically results in project failure. When the interviewees were asked what caused the loss of organizational memory, one of the current MoNE managers and three academics primarily stressed political interference in the projects. The frequent change of ministers and top managers caused the frequent change of project managers, employees, regulations and preferences, and discontinuity in the project life cycles.

“The close relationship between discontinuity, corporate amnesia and repeated mistakes is one of the research observations of Peter Herriot, director of research at Sundridge Park Management Center, and his research assistant Carole Pemberton. Based on studies in the UK and the US, they concluded that many organizations are going wrong because they have lost their collective memory. Experience, they say, has become devalued. It is now viewed negatively because it is said to hold back the speed of change with the organization. In their book ‘Competitive Advantage through Diversity’, they note that lack of experienced staff helps to explain the poor performance of at least one unnamed High Street bank. ‘By sacking long-serving managers every time they (the bank) made a business mistake, they wiped out the organizational memory and increased the chances of making further mistakes’” (Kransdorff, 1998, p. 104).
An important asset of contemporary organizations is the knowledge that belongs to employees. This knowledge is valuable as long as employees use it. If the staff is unhappy, unmotivated, or unskilled, the base assets of a company are wasted. When these individuals leave, a valuable asset leaves with them (Conklin, 1996).

According to the study interviewees, the project managers of MoNE were not called to account for the project failures as long as there was no illegality. When you know that you do not have to explain your mistakes, you may not try to do your best. This psychology may be another factor that prevented managers from taking the steps necessary to stop the loss of organizational memory.

On the other hand, one of the managers declared that MoNE realized the importance of OM recently and started a new project in 2008 called Capacity Building Support for the Ministry of National Education (CBMoNE). The project is designed to empower organizational structure and human resources through new policies, laws, regulations and in-service trainings. Since this project is at the planning phase, the results will be observed in the future.

In summary, to reach the expected ends in educational reform projects, developing countries have to be particularly careful about organizational memory and learning. They must learn how to acquire, retain and retrieve the knowledge and experiences from projects; to transfer the acquired knowledge and experiences in a project to another one; and to benefit from other organizations’ and countries’ knowledge and experiences. Otherwise, organizations will continue to look for a scapegoat on which to blame their mistakes instead of looking for the reasons behind them. Additionally, lender organizations such as the World Bank can create a database, containing the lessons learned from different projects around the world, for the access and use of borrower countries. The lender organizations can force the borrower countries to use other countries’ knowledge and experiences and to maintain and disseminate organizational memory that develops in their own projects. Thus, these countries do not lose time reinventing the wheel in subsequent projects.

Appendix A. Interview questions

- Do you know the Organizational Memory and Organizational learning concepts? If you know, what is the importance of these concepts for organizational success?
- What does MoNE do to keep the experience and knowledge acquired during the ICT integration projects in education?
- What does MoNE do to use the experience and knowledge acquired during the ICT integration projects in education in consecutive similar projects?
- What does MoNE do to transfer and disseminate the knowledge and experiences acquired by the former employees during the ICT integration projects to the new employees?
- Did MoNE benefit from other countries’ knowledge and experiences they acquired in similar projects? If it did, what kind of activities was realized to collect other countries’ experiences and knowledge?
- Is there any standard to prepare the project documents/reports?
- Where and how does MoNE keep the project reports? Are produced documents/reports easily reachable to analyze in subsequent works/projects?
- How does MoNE hire managers and employees for the projects? Who defines the hiring criteria?
- Before starting a project, are the hired employees supplied with in-service training on how to keep organizational memory and to share the acquired experiences and knowledge during a project’s life cycle?
- Before starting a project, are the hired employees supplied with in-service training or orientation to transfer a previous project’s experiences and knowledge?
- What is the turnover rate during a project’s life cycle?
- According to you, does MoNE use its organizational memory efficiently during a project’s life cycle? If your answer is “Yes”, then what are the positive results of the organizational memory use for MoNE; if your answer is “No”, then what are the negative results of the organizational memory disuse for MoNE.

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