

How to Manage the Inclusion of E-Learning in Learning Strategy

Insights From a Turkish Banking Institution

<http://dx.doi.org/10.3991/ijac.v6i1.2341>

Ayşe Kok

Bogazici University Istanbul, Istanbul, Turkey

Abstract—The purpose of this research paper is to demonstrate how a banking institution in Turkey is managing the inclusion of e-learning in its learning strategy. The case study demonstrates that the adoption of e-learning is actually influencing bank's learning strategy, and that the simple delivery through technology cannot be sustained as a separate form of training, an appendix to traditional instructor-led activities. To be successful, it has to be seen as a part of a complete learning architecture that includes a variety of tools, approaches, and a coherent learning culture. The analysis shows two emerging phenomena:

- A different degree of success of the e-learning initiative depending upon its coherence with the organizational culture, and the bank's strategy
- A changing balance of classroom training and e-learning in relationship to the adoption of the LMS adoption in each department

Index Terms— e-learning, strategy

I. INTRODUCTION

Buying the technology seems to be the easiest part of implementing e-learning. In fact, it is not just the technical innovation that drives e-learning, but its success depends on building a strategy that optimizes the technology within the organizational culture and other learning channels. To be effective, e-learning requires an integrated learning strategy and a clear vision of its role into a larger, multi channel learning experience. In practice, this is not often the case, because companies have adopted e-learning without a strategic view of its development. Lacking a clear strategy, they have built web sites or courseware without a common thread. The purpose of this research paper is to demonstrate how e-learning has been integrated into corporate learning architecture, not simply as a new training delivery media, but as a tool with its distinctive impact.

I accept the idea that technology *and* the way people and organizations use it, act together in re-shaping social and organizational practices. Thus in this paper, I do not regard e-learning as *the* external driver of change in corporate training, but as *one of the* factors contributing to innovation in training activities in the business environment. In the light of changed learning needs in companies today, I seek to answer the following question: *how is a banking institution in Turkey really managing the inclusion of e-learning in its learning strategy?*

The way I answer my research question is through one single case-study. In fact, because my purpose is to

understand the role of e-learning in reshaping the way companies plan and distribute learning, I focus on how e-learning is used in specific situations. In fact, only a direct examination of what companies are actually doing in this field can, in my opinion, shed a light on a field that has been the object of many speculations and exaggerations. Thus, to understand what is really happening in typical corporate organizations, the best way to study the topic is the analysis of an in-depth case study.

Case study analysis can provide a solid understanding the company, of its learning needs, and of the specific e-learning project. For the main case study that I consider in this paper, this knowledge has been acquired through a direct contact with a banking institution in Turkey. My study involved both my own experience as a manager and interviews with company's managers in charge of the project, collection and analysis of internal relevant documents and data, and direct exposure to the e-learning platform.

In the literature review that follows, I both establish the theoretical background and context for e-learning adoption and development, and outline the theories, which I use to frame my analysis and support my interpretation of the specific case study.

II. LITERATURE REVIEW

In business, *learning* is the process by which people acquire new skills or knowledge for the purpose of enhancing their performance (Costa 1997, Rosenberg, 2001). Its specific goal is to improve workforce performance and to make people work better, so that the organization increases its value. Within business, learning is a conscious attempt on the part of organizations to improve productivity, effectiveness and innovativeness to meet market conditions. In the corporate context, *training* is the way the instruction is conveyed: it supports learning that is the individual's internal way of processing information into knowledge. *Training* can be defined as the way instruction is conveyed while *learning* is the individual's internal way of processing information into knowledge (Rosenberg, 2001, 4).

A. *Different perspectives on technology and organizations*

Internet technologies have been seen as fundamentally altering the organizational landscape, sustaining change and transformation. E-learning has been praised as a revolutionary tool for education and learning. Its adoption, however, needs to be put in perspective. It is not the first time that technology is seen as the driver of change, but

the relationship between technology and organizations has always been characterized by a two-faced perspective. On the one hand, the impact of technology on organizational structure and performance has been emphasized, where technology is considered a causal agent or a constraining force shaping organizational structure and affecting work. This notion is called technological determinism. In this vision, technology itself plays a fundamental role in leading to social and organizational change.

On the other hand, it has been argued that organizational structures support innovative processes and vary in relation to their ability to adapt to or generate new technologies (Scott, 1990; Kimble and McLoughlin, 1995). The first perspective has been dominated since the 1960s by the contingency theory. Contingency theorists considered technology as objective, as empirically measurable characteristics of the work process, and regarded organizational structure as a static form or configuration. Generally, the theory puts the accent on the interdependence of organizations and their environments (Lawrence and Lorsch, 1967).

From the beginning, technology has been stressed as a central factor shaping organizational structure (Woodward, 1965; Perrow, 1967; Thompson, 1967, Galbraith, 1977). In the 1970s a different conception began to emerge, that considered structure as a process. Contributing to this revised conception have been organizational psychologists, such as Weick (1969), action theorists, such as Silverman (1971), and symbolic interactionists, such as Goffmann (1983) and Strauss (1978). In different ways they propose that structures are more correctly envisioned as interconnected behaviors, as patterned actions that are continuously produced and reproduced, or as negotiated forms continuously undergoing modification and renegotiation, rather than stable structures. Giddens (1979; 1984) proposed a vision of social sciences where human action and social structure are mutually dependent constitutive variables. Social structure is seen as a duality where action is both “constituted by” and “constitutive of” social organization: “the structural properties of social systems are both the medium and the outcome of practices that constitute those systems” (Giddens, 1979, 69). Therefore, technology is seen as a virtual structure that facilitates and, at the same time, constrains action, that shapes it and that is shaped by it. Consequently, technology cannot fully determine organizational design, and the most important factor is the interplay between action defining structure and structure constraining action. Technologies do not necessitate a given structure, but allow a range of possible structures. Weick, (1990) stresses the value of a subjective view of technology and its *equivocal* and complex nature. Noble argues that “the process of technological development is essentially social, and thus there is always a large measure of indeterminacy, of freedom, within it. Therefore technology does not necessitate. It merely consists of an evolving range of possibilities from which people choose.” (1984,xi)

The issue of information technology inducing organizational change is a part of this ongoing discussion about their mutual influence. It is even more relevant today than in the past, due to the role ICT is playing in the transition from an industrial society and the so called knowledge-driven or learning economy. Much has been written about different aspects of this subject. Many ethnographic studies of office work have shown the complex nature of

supposedly routinely jobs and the intricate negotiations co-workers engage in to get activities done (Wynn, 1979; Suchman, 1983; Gerson and Star, 1986; Orr, 1992; Wenger, 1998). There always seems to be a significant discrepancy between official procedures described in job descriptions and performed actions. Emphasizing work practices, learning in communities of practice, and situated learning and action (Suchman, 1987; Lave and Wenger, 1991) Pat Sachs (1995), argues that we need to rethink the nature of work, abandoning an “organizational” view grounded in scientific management ideas of tasks, training, procedures, workflows, and coming closer to an “activity-oriented” view focused on learning, know-how, networks, work practices, and communities of practice.

The situated learning theory (Lave, 1998) supports this approach. It conceives learning in terms of participation in social practices, as occurring continuously with ongoing activity by individuals. The place of learning moves beyond the individual into the connections between individuals, always related to a shared context. Knowledge does not have an ontological value, but is organically included in a web of relationships.

The situated learning perspective emphasizes the relational nature of learning and knowledge (Latour, 1989) and the negotiated character of a common semantics (Eco, 1979). Learning is participation in a community of members who find their identities in a definite, shared and negotiated set of practices. This community represents a social system that regulates collective learning (Boland and Tenkasi, 1995). So, any effort to support training through technology must take into account the nature of work and learning as described by this approach, and be aware of communities and their practices in order to sustain them. Consequently, utilization and development of e-learning in organizational settings should be grounded in a deep understanding of actual work practices instead of being designed on a bureaucratic conception of organizational work (Bannon, 1998).

E-learning allows codification and storage of training in a digital format, favoring the distinction between its production and its fruition. From this point of view, e-learning transforms training into a commodity that can be stored and retrieved as any other industrial good, without having to put together trainer and trainee at the same time and in the same place. It treats it as a static product. The idea of work implied in this application of e-learning is still the tayloristic view of work as individual tasks coordinated by supervisors.

On the other hand, if learning is seen as social and situated, based on involvement in communities of practice, e-learning can valorize its participatory over its informational dimension, using network technologies that sustain connection and communication among members. It all depends on the coherence of the learning strategy with the organizational and cultural environment of the company.

III. CASE STUDY DESCRIPTION

The way I answer my research question is through one single case-study. In fact, because my purpose is to understand the role of e-learning in reshaping the way companies plan and distribute learning, I focus on how e-learning is used in specific situations. In fact, only a direct examination of what companies are actually doing in this

field can, in my opinion, shed a light on a field that has been the object of many speculations and exaggerations. Thus, to understand what is really happening in typical corporate organizations, the best way to study the topic is the analysis of an in-depth case study.

Case study analysis can provide a solid understanding the company, of its learning needs, and of the specific e-learning project. For the main case study that I consider in this paper, this knowledge has been acquired through a direct contact with a banking institution in Turkey. My study involved both my own experience as a manager and interviews with company's managers in charge of the project, collection and analysis of internal relevant documents and data, and direct exposure to the e-learning platform.

The Turkish Bank with approximately 9,200 employees has the following characteristics with regard to its training and development aspects:

Learning strategy and organization of the Training function: The company's learning strategy has evolved in the past 6 years. Until 2006, it was more traditionally focused on priorities established by Training & Development Department under HR Group on the basis of a reactive approach to the requests of managers in the company. The main delivery system was the classroom. Training and learning priorities are established by business leaders as a part of their business plans, and managers are highly involved in the training process. Training deliverables have shifted from a catalog of courses that focused on content design to a blended mix of learning experiences focused on competences and specific functional needs with strong job-based links.

The new learning approach is organized around key competences, but it is still catalog-based.

The offer of multiple learning options is classified not on the basis of the technology in use, but as self-paced or group-based. Self-paced learning includes video and audio learning experiences, books and computer-based learning such as CD-ROM programs and online learning via the Internet or the company intranet. The second category, group-based learning, includes classroom events, team meetings, on-the-job learning. The technology-based training of the first category is therefore composed by web-based self-paced training modules and self-paced, multimedia training (financial skills, professional development, leadership, management and personal development courses).

The e-learning team comprised of one manager and one developer as a third-party company develops most of the web courses, and assures the consistency of writing, editing, and quality of the web site and technology based tools. The team works in close collaboration with "content experts", people around the company who "own" the content of the e-learning packages and guarantee the information to be up-to-date and consistent.

The installation of the LMS in May 2009 derived from a need to support a significant increase in registration activity as well as produce reliable management reports for completion results. The bank also agreed to deliver to all its employees mandatory compliance training on regulations. The system is integrated with the personnel system data.

Access to e-learning courses is free: people can take them during work hours, while classroom courses are subject to a tuition and, therefore, an agreement with their managers is necessary. The bank has still to decide a policy about the library of soft skill courses.

Structure and tools: All training is sustained by a Learning Management System (LMS) hosted by an Application Service Provider, that currently has over 350 activated e-learning courses excluding video lessons. LMS has been developed by a third party local company is used to create and deliver content, monitor learner participation, and assess learner performance. LMS also provides learners with the ability to use interactive features such as threaded discussions, video lectures, and discussion forums. LMS manages the log-in of registered users, manages course catalogs, record data from learners, and provides reports to management. LMS provides an integrated platform for content delivery, and management of learning, as well as accessibility by a range of users that include learners, content creators, and administrators. In other words, LMS provides the bank with a convenient platform to manage learning activities as well as manages learner's registration and records.

The entrance point for the LMS is a web site for employees called "For@". The e-platform "For@" which is a web-based application developed by a third company is divided into 2 sections (Figure 1):

- **LMS:** The LMS includes over 350 asynchronous web-based courses an online library and a social learning platform which provides digital collaboration tools such as blogs, forums and an internal social networking platform. This built-in social environment enables participants to share information about the training they have taken online or offline and communicate with colleagues at other branches. The library is made up of static content, mainly classroom presentations.
- **Video Portal:** This section includes video-based lessons in the categories of finance, professional development, bank-specific areas and personal development. Videos that are produced internally or announcements of higher level management are also included in this section.

The platform has also searching capabilities, tutorials, and a technical and content help desk, is targeted at nearly 9,200 users of the bank. The platform is also compatible with the mobile phones (any smartphone apart from Blackberry can display the online courses.)

Moreover, the bank implemented the e-learning choice with one off-the-shelf library of courses, Skillsoft. This is a catalog of 150 self-paced licensed courses on soft skills for general curriculum. Due to its limited use these trainings have been assigned to the related technical personnel based on their technical background and skills. The LMS allowed the possibility of anytime access to training, consistent content, delivery, and cost savings. However, even in this case, because a blended approach is seen as more effective, the IT department offers supplements to web-based training. While apart from Skillsoft all courses are open to all personnel, assignment of online courses can also be done based on the departmental request. In this case, customized messages are sent from the LMS for that particular course.

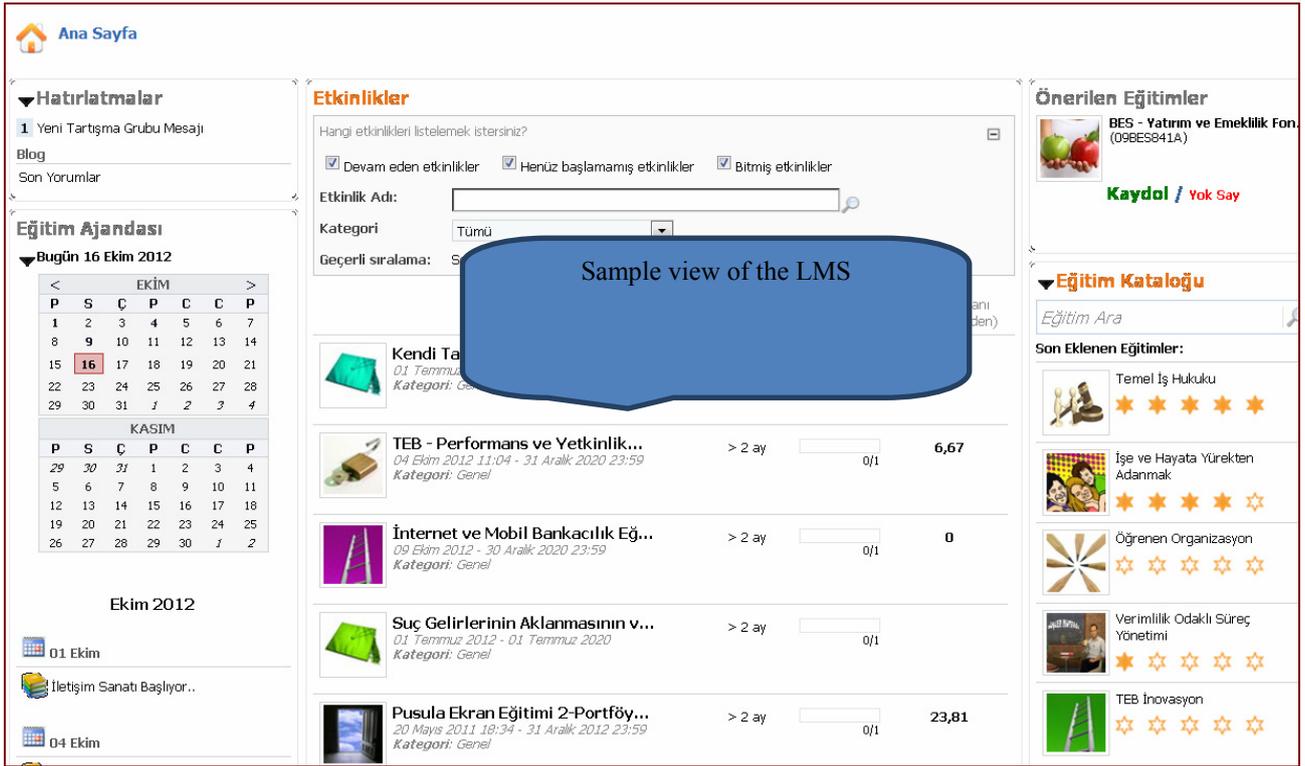


Figure 1. General appearance of the LMS used in the bank

The catalog consists of four types of training:

1. *Mandatory courses*: These can be in the form of existing catalog courses or courses specifically developed for the bank based on the managers' needs (courses about product/process/service).
2. *Regulatory mandatory courses*: These are courses that need to be taken by every bank personnel due to the compliance issues within the Turkish banking industry (e.g. information security, operational risk).
3. *Elective courses*: These are courses which can be selected from the existing course catalog based on one's specific interest.
4. *Personal development*: These are catalog courses that aim to improve one's soft skills for the professional life. Some of these courses can also be accessed from the online performance management tool based on the specific targeted skills of the employees.

It is also a high level management mandate to conduct frequent online exams via the LMS in order to enhance the branch personnel's information about the bank's products and services. From time to time, online knowledge competitions are also held within the bank based on the departmental requests.

One major program that uses blended deployment strategies is a comprehensive soft skill curriculum called "The Customer is Everything for Us". The project is made up of 8 e-learning packages that have been assigned to the general management personnel and branch staff depending on their position and title. The program's objective is to reduce the number of customer complaints and become the new number one in Turkey in terms of customer service.

The orientation program for new hired employees, is mainly a scenario-based simulation. It provides a good overview for new hired employees and management needing to understand the business, the bank's history and organizational structure. The first version of the orientation program is to be developed towards the end of 2012.

Another e-learning initiative is the rapid learning courses about the bank's products as the inexperienced employees need to learn its products and services thoroughly, while veteran workers must routinely refresh their product knowledge and sales skills. While at the moment the rapid learning courses can be taken by anyone in the bank, within the next few months, these training packages will be delivered all together in an interactive game-based learning program that closely simulates the work environment and employees' daily challenges.

The company's learning and development concerns peaked during 2009-10 when it merged with another foreign bank in Turkey. Many of them were Generation Y employees inexperienced in banking and the workplace in general. To increase appeal to the bank's young employees and replicate real work experiences, the Training & Development Department designed a simulation as a competition within a virtual bank building. This simulation reflects three important employee competencies: product and service knowledge, general banking process and workflow application, and relationship management skills. In the game participants' knowledge levels and attitudes are tested on these aspects with multiple-choice questions and interactive real-life scenarios.

A second priority of this game-based simulation is to engage participants in interactive, real-life scenarios. To achieve this, the game encompasses a complex set of rules that stimulate learners with a variety of interruptions and outcomes. Within each scenario, all of a learner's actions

are taken into account as questions respond to the individual's answers in subject and degree of difficulty. The constantly changing content means learners can play the same scenario multiple times and still learn something.

The scoring system encourages players to excel in product and service feature knowledge to succeed.

Rather than simply encourage players to excel because the course says so, the scoring meters serve as an external motivator that runs throughout the training.

In a typical scenario, a branch-based representative seeks to understand a customer's needs and relate them to the bank's products. The individual's task entails taking necessary administrative actions followed by another meeting with the customer to obtain signatures. Cross-selling opportunities are emphasized.

IV. METHODOLOGY

A. Data Collection

The survey for e-learning users is constructed as shown in Appendix 1. These dimensions and related requirements are gathered from previous LMS evaluation studies such as Mohawk College of art and applied technology at Canada (2009), Humboldt State University (2007), Bristol Community College (2009), Idaho State University (2007) and Ohio University (2008). The following are brief descriptions of requirement dimensions and items that are employed:

- **Instructional features** refer to those features in distance learning system that are used in the creation of the courses offered using the e-learning instruction, the implementation of the course within the e-learning environment, as well as the content of course documents, assignments, resources from Internet, quizzes and surveys.
- **Interactive features** refer to those features in e-learning system that requires a transfer of data within a computer or through a network. The interactive features in e-learning system include chat room, discussion board, the creation of external links and homepages within e-learning environment, the act of uploading or downloading of files (text document, graphics, video, audio or animation), and the act of electronic file transfer between e-learning technology and other application software such as Microsoft Excel and Microsoft Word.
- **Administrative features** refer to those features in e-learning system that are used in administrating the system such as defining users, defining reporting periods, running management reports, and monitoring participants' status.
- **Visual features** in e-learning technology refer to the features that make up the visual appearance of the entire e-learning platform, which include the overall layout, the design of graphical user interfaces, and the overall aesthetic design of e-learning technology using colors, icons and shapes of buttons, the different types and different sizes of font, as well as the relationship of all these elements to one another.
- **Support features** refer to those features in e-learning system that are used in giving advice and solving problems within the system and offering a good training for the stakeholders such as technical support, user community, site map and user's guide.
- **Technology features** (hardware and software requirement) refer to those features in e-learning system that are used in such a way the system is compatible with a variety of multimedia plug-ins (QT, PDF, Flash ZIP), any internet browser (Firefox, Internet Explorer Netscape, Safari, other), various devices other than computer to access the distance learning platform (iPhone, HTC Blackberry, etc.).

B. Survey Results

A survey research design was selected for this study to investigate the perceptions of the bank staff regarding the evaluation of the existing e-learning platform. The learners' questionnaire with closed questions has been implemented as a primary survey instrument so far.

The questions are divided into six categories based on the LMS dimensions and features namely Instructional features, Administrative features, Interactive features, Support features, Visual features,

Technology features. 2714 out of 9200 registered participants submitted complete questionnaires, which makes the approximate return rate of 33%. All items were assessed on a 5-point Likert scale from 1 —very low to 5 —very high. Item responses were dichotomized for the purpose of this paper.

The survey in general demonstrates that a different degree of success of the e-learning initiative depends upon its coherence with the organizational culture, and the company's strategy.

As Question 3 (Figure 2) demonstrates there is a changing balance of classroom training and e-learning in relationship to the adoption of the LMS in each department.

As questions 14 and 15 (Figures 3 and 4) suggest, different tools, such as self-paced web courses or social learning platform, have completely dissimilar impacts and levels of success when applied to different learning needs inside the same or different organizations.

The bank in this case study has expressed the intention of supporting social learning as a further step in their e-learning strategy. At the moment there are small indications of a clear recognition of, or of any activity already in place to sustain, communities of practice. Without recognition of their value and a clear commitment to cultivate communities of practice on a larger basis, the adoption of technology alone is not going to achieve the result. (Wenger, McDermott, Snyder, 2002)

In general, the case study demonstrates that the adoption of e-learning is actually influencing bank's learning strategy, and that the simple delivery through technology cannot be sustained as a separate form of training, an appendix to traditional instructor-led activities. To be successful, it has to be seen as a part of a complete learning architecture that includes a variety of tools, approaches, and a coherent learning culture. The analysis shows two emerging phenomena:

- A different degree of success of the e-learning initiative depending upon its coherence with the organizational culture, and the bank's strategy
- A changing balance of classroom training and e-learning in relationship to the adoption of the LMS adoption in each department

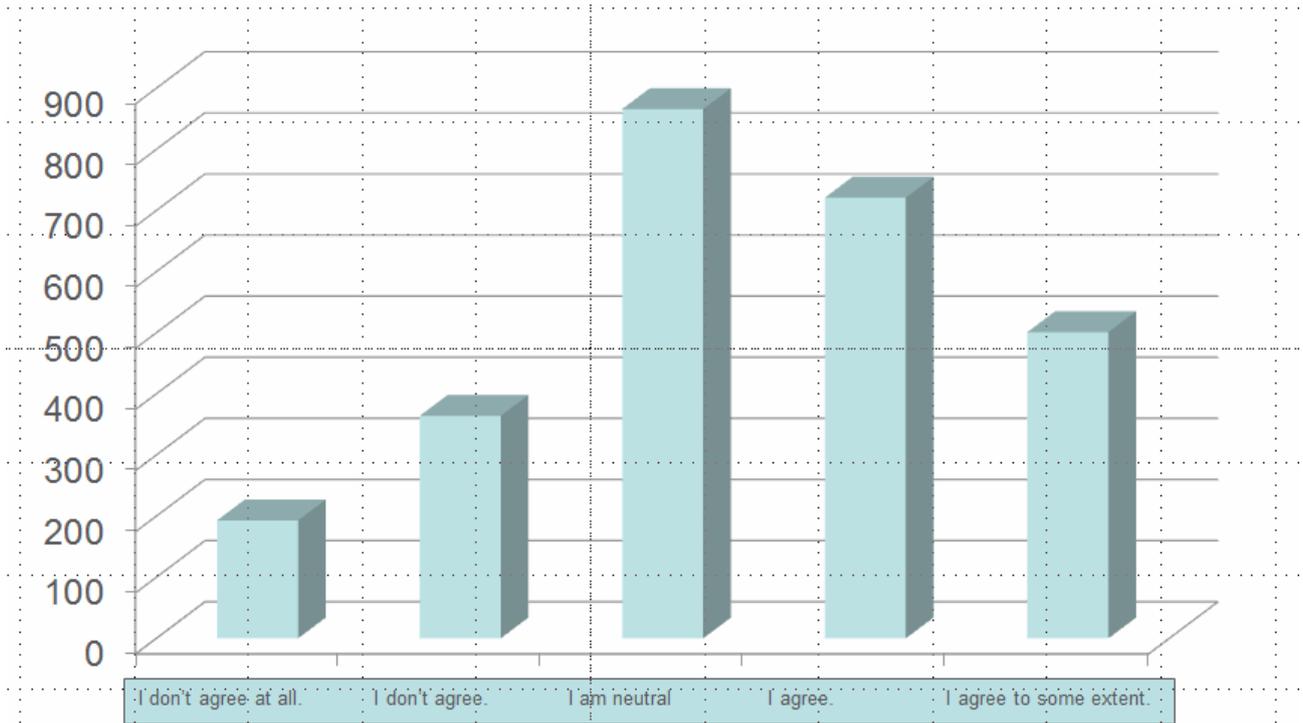


Figure 2. Answers to Question 3- "I think I can learn more on LMS in comparison to classroom trainings." (number of persons)

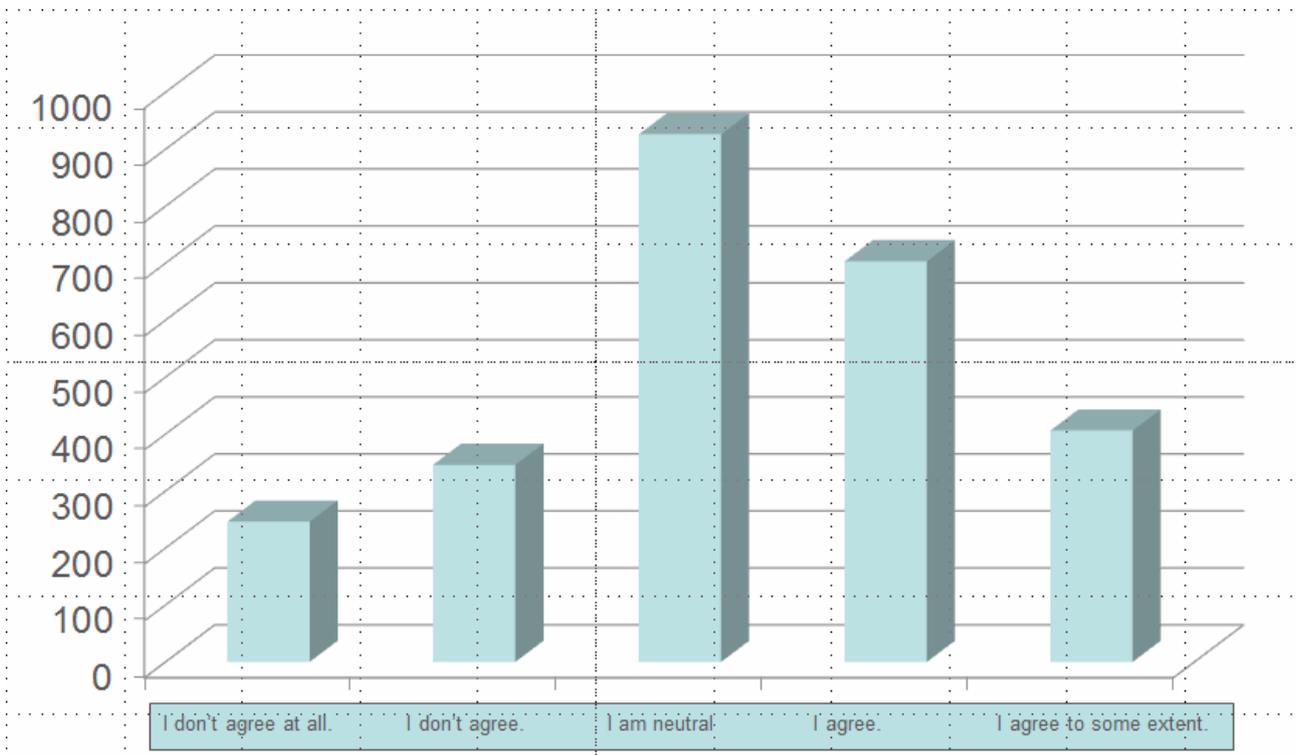


Figure 3. Answers to Question 14- "I can easily ask the trainer about the questions that I could not understand by using the social module on the LMS." (number of persons)

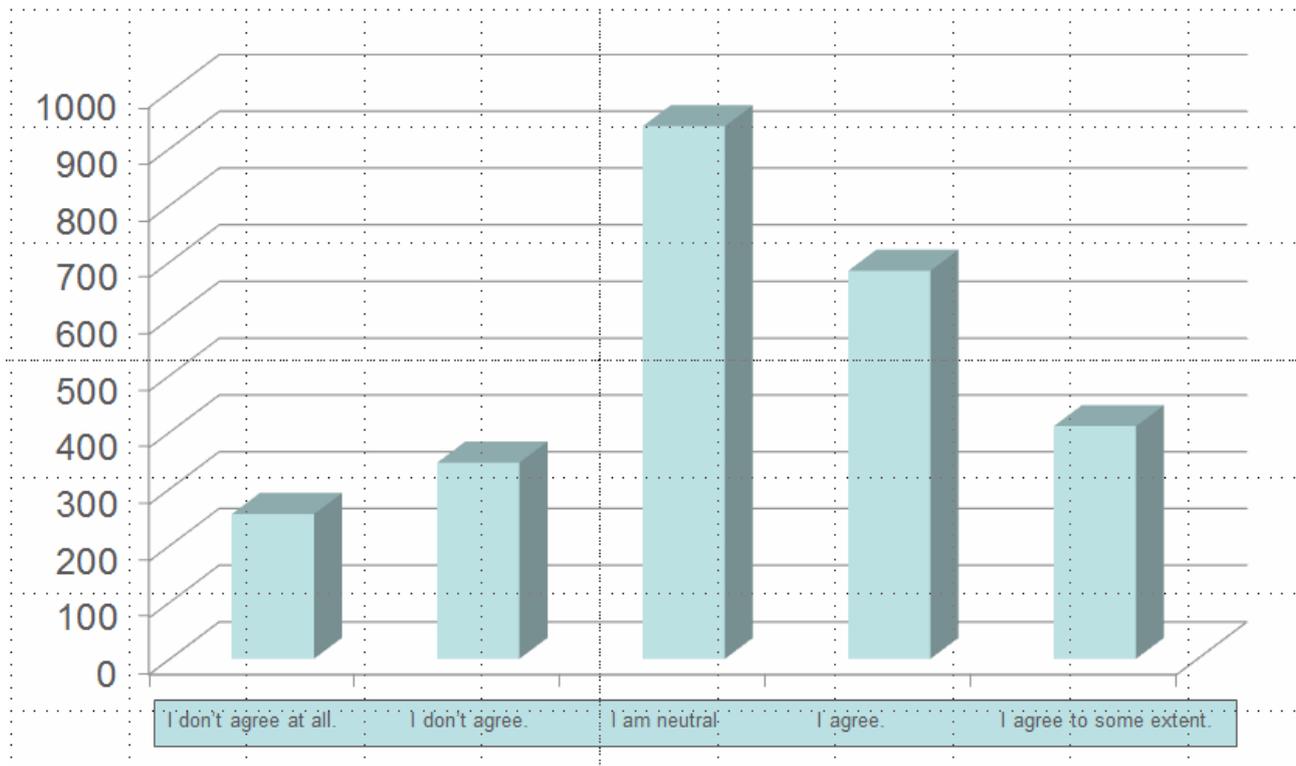


Figure 4. Answers to Question 15- "I can easily ask other participants about the questions that I could not understand by using the social module on the LMS." (number of persons)

V. CONCLUSION

The first consideration drawn from the analysis of the case study may seem a mere definition problem, but it affects the ability to analyze and choose among various e-learning solutions for the bank. What goes under the broad label of e-learning is a mix of very different tools that can be hardly defined by a single term. The term e-learning has been useful to identify a range of activities sustained by Internet-based solutions in a time when these tools and activities were new to the most part of the training community. Now, the acceptance of technology as a viable learning and training modality is widespread, and the label e-learning is too vague to allow a fine-tuned analysis of its different components. As the case studies suggest, a mix of multiple solutions and components, all different in their characteristics and possibilities, go under the same label creating the impression of homogeneity where there is none. Different tools, such as self-paced web courses or social learning platform, have completely dissimilar impacts and levels of success when applied to different learning needs inside the same or different organizations.

The label seems confusing if we consider that companies do not view learning and e-learning strategies as separated anymore, but consider technology-based solutions as an integral part of their general learning sources.

The bank in this case study has expressed the intention of supporting social learning as a further step in their e-learning strategy. At the moment there are small indications of a clear recognition of, or of any activity already in place to sustain, communities of practice. Without recognition of their value and a clear commitment to cultivate communities of practice on a larger basis, the adoption of technology alone is not going to achieve the result. (Wenger, McDermott, Snyder, 2002)

In conclusion, the use of the term e-learning hides very different ways of developing blended strategies to learning. The common label emphasizes technology over learning needs and different, possible solutions, concealing under a uniform cover what, in reality, is a diverse set of successful and unsuccessful experiences. Perhaps, now that the value of using the Internet for learning activities has been established, it is time to forget the "e" and call it simply learning.

While online library, social learning platform and orientation programs are successful, at the moment the library of self-paced soft skills courses is not. Once again, as for the bank, only compliance courses seem to drive this e-learning component, and they are the only instance where a large participation is registered. When a large audience has to be trained or instructed on a mandatory program in a short period of time, this seems to be the optimal solution, while in other cases, the solitude and monotony of most self-paced courses have no appeal to people, especially if the idea is to take them at home, in afterwork hours.

When consistently developed, e-learning activities can also help in achieving organizational learning. In this case study, the use of e-learning has resulted in a form of learning that goes beyond individuals and reaches the enterprise level. Organizational learning occurs when the sum of learning at the individual level is greater than its parts. It leads to shared mental models which become embedded in the practice and culture of the organization members (Argyris, Schon, 1996). Of course, training alone is unlikely to produce such learning, but when it is backed by other organizational systems such as control, incentive and value systems, it can effectively change the enterprise focus and move to a collective level of achievement.

REFERENCES

- [1] Ala-Mutka, L. & Punie, Y. (2009). Learning and Innovation in New ICT-Facilitated Communities. European Commission, retrieved June 28, 2010 from http://www.ou.nl/Docs/Campagnes/ICDE2009/Papers/Final_Paper_333Ala-Mutka.pdf
- [2] Allsopp, J. (2007). Microformats: Empowering Your Markup for Web 2.0, Berkeley: Friends of ED.
- [3] Attwell, Graham (2007). The Personal Learning Environments – the future of eLearning? In eLearning Papers, 2 (1), retrieved June 28, 2010 from <http://www.elearningeuropa.info/files/media/media11561.pdf>
- [4] Bernsteiner, R. Ostermann, H., & Staudinger, R. (2008). Facilitating e-learning with social software: Attitudes and usage from the student's point of view. International Journal of Web-Based Learning and Teaching Technologies, Volume 3, Issue 3. <http://dx.doi.org/10.4018/jwltt.2008070102>
- [5] Bowman, S. & Willis, C. (2003). We Media - How audiences are shaping the future of news and information. California: Media Center at the American Press Institute, retrieved June 26, 2010 from http://www.hypergene.net/wemedia/download/we_media.pdf
- [6] Chatti, M. A., Jarke, M., Wang, Z. & Specht, M. (2009). Mashup Personal Learning Environments. In Wild, F., Kalz, M., Palmer, M. & Müller, M. (Eds.) Mash-Up Personal Learning Environments (MUPPLE'09). Workshop in conjunction with the 4th European Conference on Technology-Enhanced Learning (ECTEL'09): Synergy of Disciplines, retrieved June 28, 2010 from http://dspace.ou.nl/bitstream/1820/2106/1/mupple09_dspace.pdf
- [7] Davenport, G., Barry, B., Kelliher, A. & Nemirovsky, P. (2004). Media fabric – a process-oriented approach to media creation and exchange. BT Technology Journal, 22 (4), retrieved June 28, 2010 from <http://mf.media.mit.edu/pubs/journal/MediaFabricFinal.pdf>
- [8] Dillenbourg, P. (1999). Collaborative Learning: Cognitive and Computational Approaches. In Advances in Learning and Instruction Series, New York, NY: Elsevier Science, Inc.
- [9] Downes, S. (2005). E-Learning 2.0. In ACM eLearn Magazine, October 2005, retrieved 23 June, 2010 from <http://www.elearnmag.org/subpage.cfm?article=29-1§ion=articles>
- [10] European Commission (2010). New Skills for New Jobs: Action Now, OIB, retrieved June 24, 2010 from <http://ec.europa.eu/social/main.jsp?catId=568&langId=en>
- [11] Fiedler, S. & Kieslinger, B. (2005). Adapting to changing landscapes of education
- [12] (On microlearning), Austria: Centre for Social Innovation, retrieved January 25, 2009 from http://www.microlearning.org/proceedings2006/ml2006_fiedler_kieslinger_paper_education_landscapes.pdf
- [13] Friesen, N. & Hug, T. (2009). The Mediatic Turn: Exploring Consequences for Media Pedagogy. In K. Lundby (Ed.). Mediatization: Concept, Changes, Consequences, New York: Peter Lang, 64-81, online version available at http://learningspaces.org/n/papers/Media_Pedagogy_&_Mediatic_Turn.pdf
- [14] Gobet, F. (2005). Chunking models of expertise: Implications for education. Applied Cognitive Psychology, 19, 183–204. <http://dx.doi.org/10.1002/acp.1110>
- [15] Knowles, M. (1975). Self-Directed Learning: A Guide for Learners and Teachers, New York: Association Press.
- [16] Lave, J. & Wenger, E. (1991). Situated learning: Legitimate peripheral participation, New York: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511815355>
- [17] Lindner, M. (2008). Micromedia Flow Experience Design. A Conceptual Framework for Designing Microcontent-driven Applications for Peripheral View and Partial Attention. In Microlearning and Capacity Building. Conference Series of the Microlearning Conference, Innsbruck, 37-56.
- [18] Lubensky, R. (2006). The present and future of Personal Learning Environments. Blogpost, last retrieved from: <http://www.deliberations.com.au/2006/12/present-and-future-of-personal-learning.html>
- [19] Oblinger, D. & Oblinger, J. (2005). Educating the Net Generation, Educause, retrieved June 23, 2010 from <http://www.educause.edu/educatingthenetgen>
- [20] Tapscott, D. & Williams, A. (2006). Wikinomics. Penguin Group, New York, 324.
- [21] Toffler, A. (1980). The Third Wave, New York: Bantam.
- [22] Wenger, W. (1998). Communities of Practice: Learning as a Social System. The Systems Thinker, Vol. 9, No.5.

AUTHOR

Ayse Kok is with Bogazici University Istanbul, Istanbul, Turkey.

Received 5 November 2012. Published as resubmitted by the author 11 February 2013.

APPENDIX 1- SURVEY QUESTIONS

1. I am happy with the current user interface of the LMS.
2. I really enjoy taking e-learning courses on the LMS.
3. I think I can learn more on LMS in comparison to classroom trainings.
4. It is easy for me to access the trainings required.
5. I feel comfortable with using the LMS.
6. In general, I am satisfied with the functionalities provided by our LMS.
7. Online activities and examples provided in e-learning courses enhance the conceptualization of ideas.
8. The e-learning scenarios provided in e-learning courses are interesting.
9. The e-learning courses offered in LMS make the learning process easier.
10. The scenarios of e-learning courses are long enough.
11. E-learning goals in LMS have been stated clearly.
12. The social module on LMS offer the opportunity for asynchronous interaction between learners and trainers.
13. I can easily interact with other participants by using online communication tools (such as discussion forum, chat tools...etc.) provided by the social module.
14. I can easily ask the trainer about the questions that I could not understand by using the social module on the LMS.
15. I can easily ask other participants about the questions that I could not understand by using the social module on the LMS.