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Internet-Based learning from the perspective of employees: A study on analysis of awareness, use case and effectiveness

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Abstract

The increasing importance of knowledge, rapid developments in information and communication technologies caused changes on habits in the field of work, academic, social lives and so on. Education is one of these areas. Today, information technology products and internet have become indispensable components of the education. Also different educational terms come into our lives such as e-learning, mobile learning, r-learning. People, have the chance to improve themselves by participating in online trainings without the constraints of time and space. In addition to this, especially corporate companies are providing trainings to their employees through learning management systems contributes to the improvement of its employees in both the professional and technical issues. However, awareness of these developments, usage of internet and information technologies and attitude towards the new learning methods are interesting topics. This study aims to find out results such as how and how much individuals benefit from internet and available technological devices for their education, in particular do they use mobile devices, are aware of them and what their opinions about new education methods are. Within the scope of this study, we used a questionnaire consisting of two different types of questions as multiple choices and five point Likert scale to learn demographic information, internet and computer usage in individual education and attitudes towards internet based and mobile education. For the internal and external validity of the questionnaire the expert opinion is taken and questionnaire is applied to the five people who represent the sample of the study as well as possible then with the feedbacks questionnaire is revised. The study group

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includes 34 people use computers and the internet, work in different sectors, are randomly chosen. The study results will be shared in full text. For the analysis of the questionnaire frequency, percentage and certain statistical methods are used.

Keywords: Internet based learning, mobile learning, learning methods, employees

1. Introduction

Technological developments affect people's needs just as people's daily habits affect the technological developments. In recent years, there have been many improvements in information and communication technology; hence people often carry out many transactions through various applications such as online banking, e-government and student automation systems via the internet, as well as using many different devices such as smartphones and personal computers, without needing to think about the time and the location. Thus, technological developments lead to changes in social structure (Calık and Sezgin, 2005) and many areas such as health, finance, etc. are under the influence of these technological developments. One of these important areas is also education. Education has undergone a radical change due to the impact of the information age, the use of technology in education, the choice of educational systems that use the infrastructure by the institutions/organizations and the increasing importance of the lifelong learning concept.

Traditional education approaches remain incapable to transfer information despite the rapid development of technology and the efforts of people to get information rapidly (Kayaduman et al., 2011). In addition to technological developments, problems such as satisfying educational needs due to population growth and the concept of lifelong learning cause the assessment of different forms of education (İsman, 2011). Both the formal and informal learning processes of individuals should be supported by technological tools depending on the age requirements. In this regard, information technology products and the internet have become irreplaceable parts of education. Learning has shifted to virtual learning from classroom learning with the integration of technology in education (Chen, 2010). There are many different forms of learning, such as distance learning, web-based learning, mobile learning, online learning, virtual university and so on. Although learning environments are designed based on learning purpose, target audience, access type and content (Moore et al., 2011), the common properties of the environments are the physical separation of instructor from learner and the support of the internet.

Internet-based training is an instructional training method that is carried out with the use of various internet tools, such as www, e-mail, ftp, etc. (Odabas, 2003). Utilization of the internet in education is rapidly increasing and the internet may be used as a teaching environment from secondary education to higher education and also from industry to medium-sized enterprises (Hill et al., 2004). One of the most important resources that supports competitiveness in a competitive environment by encouraging renewal is human capital (Chen, 2009). Therefore, this has led enterprises to focus on employee training and also to increase the tendency towards web-based learning and e-learning. Many enterprises offer training to their employees to develop themselves through web-based systems, for example in management, leadership, communication, customer service and quality management (Sarac and Ciftcioglu, 2010).

People nowadays also continue their learning activities by their own efforts, besides their school or job training. Thus, learning has become an ongoing activity throughout life and the concept of lifelong learning has entered our lives. Lifelong learning is defined as whole learning activities that are carried out for the development of individual or community knowledge and skills, regardless of the school process, from birth to death (Gross, 1977). Lifelong learning is based on the idea that it is impossible to get all necessary knowledge and skills for people during elementary, secondary and higher education (Sharples, 2000). Therefore, in consideration of today's world, people should obtain new

knowledge and skills with their individual efforts beyond their own knowledge and skills that were received in schools.

The information and communication technologies provide a very large contribution both at educational institutions, enterprises and in individual learning activities. The internet also helps people to reach a vast educational content.

2. Scope of the Study

As mentioned in the previous section, the internet is an important tool that is accessible to many educational that provides access to a large amount of educational content and supports both lifelong learning and the process of formal education. In recent years, many people have acquired their own personal computers, tablets and smartphones that allow them to have internet access and it is known that they use various applications such as social media, news and video channels via these tools. However, little is known about how people use these tools for their personal learning.

Furthermore, not enough is known about the extent to which employees are aware of the learning options that are provided by enterprises, such as e-learning, internet-based learning, etc.

Hence, the questions below form the framework of the study for the employees in the study group, who are educated to at least undergraduate level and work for a variety of industries.

- Which tools, such as tablet, personal computer or smartphone, do people have?
- How much time do people spend using these tools and the internet during the day?
- Do people have any information about e-learning, web-based learning, etc.?
- Do the enterprises have any educational opportunity for their employees?
- For what purpose have the employees received training via the internet?
- Are the employees willing to participate in internet-based training or not?
- How satisfied are the employees with the training that is received via the internet?
- What are the thoughts of the employees on the comparison between class-based education and web-based education?

3. Method

3.1. Study Group

The study group consists of 34 participants who work in various sectors, have completed a two-year upper-level degree (BSc, MSc, PhD) and have taken part in training via the internet.

3.2. Data Collection Tool

A questionnaire prepared by the authors is used as the data collection tool. It consists of 37 questions. Twenty-two of the questions are multiple-choice questions, while 15 are 5-point Likert scale questions (answers are strongly disagree, disagree, not sure, agree, strongly agree). The questions were categorized according to their content and purpose, such as:

- Question related to demographics

- Question related to computers and communications equipment usage
- Question related to awareness of the concept of new teaching-learning technology
- Question related to the reasons for taking internet-based education and the training that they received
- Question related to impressions about the training they received.

The data collection tool was examined by two experts in education and technology before the application. A pre-questionnaire was filled in by five people who represent the sample as closely as possible. According to their feedback, the questionnaire was revised.

The data collection tool was prepared via Google Forms.

3.3. Data Analysis

Percentage, frequency and association tables are used to analyse the data.

3.4. Internal Validity of the Study

The questionnaire was applied impartially and without any guidance over the internet. Any question that gives a clue to the identity of the participant has been asked. All analyses were performed by the authors and the data obtained will not be shared with third parties or institutions.

3.5. External Validity of the Study

The results can be generalized to employees who have the same educational level and are in the same field. Brief information about the questionnaire was given to the employees before it was conducted.

4. Findings

4.1. Demographic Findings

Thirty-four people participated in the questionnaire and participants responded to all questions. Of the participants, 58.2% were female and 41.8% were male. The participants' age ranged from 23 to 40 and the age average is 29.68. In terms of education, 44.12% of participants have completed a two-year upper-level degree, BSc, MSc, or PhD. The remaining 55.88% are continuing their training at graduate level.

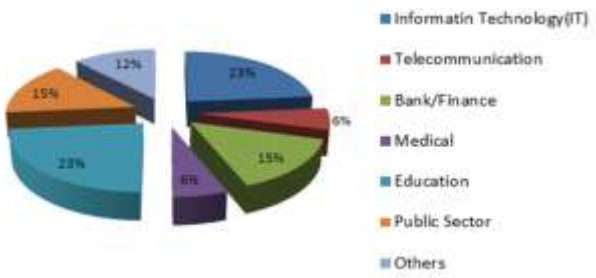

Fig. 1. Participants' Sector Distribution NOTE INCORRECT SPELLING OF "INFORMATION" IN FIG.

In terms of employment, 46% of participants are employees in the IT and educational sectors (equal ratios of 23%) and 30% of participants are in the bank/finance and public sectors (equal ratios of 15%). Figure 1 shows the distribution of participants by sector.

The majority of participants, at 35.29%, work as an "expert". Experts are followed by academics with a rate of 17.65%. Figure 2 shows the participants' job title distribution.

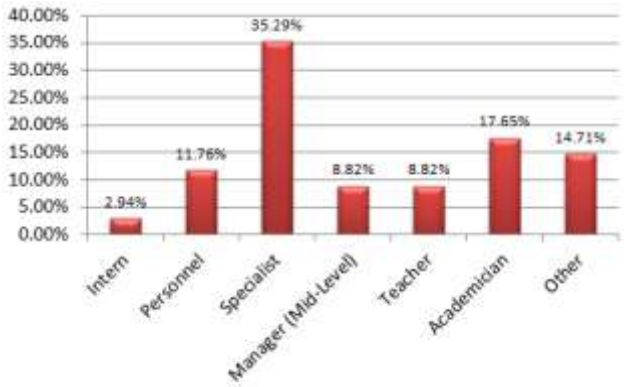

Fig. 2. Participants' Job Title Distribution NOTE IT SHOULD BE "ACADEMIC"

4.2. Computer and Internet Use Case Findings

When the responses were analysed for the daily internet usage time, 32.35% of participants spend from 3 hours to less than 6 hours, 32.35% spend 6 hours to less than 9 hours and 26.47% spend at least 9 hours on a daily basis.

The percentage of participants using mostly a desktop computer for internet access is 38.24%, using mostly a notebook is 38.24%, using mostly a smartphone is 20.59% and using mostly a tablet is 2.94%.

Most of the participants (64.71%) define themselves as a professional-level computer user, 32.25% of them as an intermediate user and 2.94% of them as a lower-level user.

The majority of participants (91.18%) prefer internet usage for research and general culture, 64.71% for entertainment, 64.71% for business and 55.88% for corporate or individual education. Table 1 shows the internet usage reasons of participants.

4.3. Findings of the Awareness of the Concept of New Teaching-Learning Technologies

According to the two different questions about different learning methods as directed to participants, 85.29% have heard of and 61.76% have knowledge about web-based learning and 70.59% have heard of and 58.82% have knowledge about mobile learning (see Table 1).

Table 1. Knowledge about different learning methods

Option/Choice	*Heard (%)*	*Have Knowledge (%)*
E-learning	94.12	94.12
Web-based learning	85.29	61.76
Mobile Learning	70.59	58.82
Online Learning	79.41	70.59
Distance Education	100	85.29
Learning Management System (LMS)	55.88	52.94
None	0	2.94

When 82.35% of participants expressed that their institutions/organizations provide training via the internet, 52.94% of all participants noted that an LMS is used and 29.41% noted that an LMS is not used.

4.4. Findings on Training Reasons, Types and Devices

The frequencies and association rates for the responses to the question “Which of the following tools do you use for internet-based training?” are given in Table 2.

Table 2. Responses to “Which of the following tools do you use for internet-based training?”

Option/Choice	*F*	*%*
Only Desktop Computer	8	23.53
Only Notebook	15	44.12
Desktop Computer and Notebook	6	17.65
Desktop Computer, Notebook and Smartphone	2	5.88
Desktop Computer and Smartphone	1	2.94
Notebook and Smartphone	1	2.94
Desktop Computer, Notebook and Tablet	1	2.94

As shown in Table 2, most of participants (44.12%) prefer “Only Notebook” for their internet-based training.

The responses to the question “Why do you receive internet-based training?” are given with their frequency and association rates in Table 3.

Table 3. Responses to "Why do you receive internet-based training?"

Option/Choice	*F*	*%*
Individual attention	14	41.18
My institution's/organization's demand	13	38.24
Individual attention and my institution's/organization's demand	7	20.59

As seen in Table 3, 38.24% of participants, a high rate, receive training because their institution/organization requests it.

When asked about the source of the training taken over the internet, 55.88% give the response "Online educational web pages provide open courseware/content", 47.06% give the response "Video-sharing environments", 44.12% give the response "My institution's/organization's educational platform/portal", 44.12% of responses give "Experts' online web pages/blogs, etc.".

When participants were asked which material they have difficulty using when receiving training via the internet, 41.18% of them responded that they have difficulty using the reading materials, 17.65% of them responded that they have difficulty using the audio files and 35.29% of participants responded that they have no difficulty using any of the material. The responses to the question "Which training materials do you have difficulty using with when receiving training on the internet?" are given with their frequency and percentage rates in Table 4.

Table 4. Responses to "Which training materials do you have difficulty using when receiving training on the internet?"

Option/Choice	*F*	*%*
Videos	2	5.88
Reading materials (for example, PDF files)	14	41.18
Audio files	6	17.65
Presentation files	4	11.76
Animated course files	3	8.82
None	12	35.29

In terms of certification, 61.76% of the participants have received a certificate/diploma/participation document; on the other hand, 38.24% of the participants have not.

4.5. Findings on Impressions of Participants About the Training

Most of the participants (82.35%) think that training helps them to improve themselves. In addition, 50% of them think that mobile devices will be popular for this in a few years. A high rate (61.76%) of participants want companies to provide training. Table 5 shows the participants' answers to the 5-point Likert scale questions (answers are strongly disagree, disagree, not sure, agree, strongly agree).

Table 5. Participants' Answers to 5-point Likert Scale Questions

Option/Choice	*1**	*2**	*3**	*4**	*5**
The training that I received was a waste of time for me.	32.35%	52.94%	5.88%	8.82%	0%
The training that I received helped me to improve myself.	0%	0%	5.88%	82.35%	11.76%
I think the training that I received via	2.94%	2.94%	8.82%	79.41%	5.88%

the internet was useful for me.					
Companies should provide in-service training to their staff with training content via computer and internet.	0%	2.94%	11.76%	61.76%	23.53%
The online training via the internet is not a substitute for face-to-face training.	5.88%	20.59%	38.24%	17.65%	17.65%
I think that the computer- and internet-based training that I received is enough to learn the subject.	5.88%	5.88%	29.41%	58.82%	0%
I think that the use of mobile devices is/will be more practical than the use of other tools.	5.88%	17.65%	29.41%	38.24%	8.82%
I think that the use of mobile devices for training via the internet will become more popular in a few years.	0%	11.76%	2.94%	50.00%	35.29%
The use of mobile devices makes/will make training more attractive.	0%	14.71%	17.65%	41.18%	26.47%

*1=Strongly Disagree, 2=Disagree, 3=Not Sure, 4=Agree, 5=Strongly Agree

5. Conclusion

When the internet usage rates are examined, it can be seen that the majority of participants (64.70%) use the internet actively. Besides this, although smartphones are nowadays used widely, most participants indicated that they still often use desktop computers and notebooks for internet access. The participants' education levels and their declaration that they are professional computer users show that they are conscious users. However, the rate of responses on using the internet for educational purposes is only 55.88% and represents only half the participants.

It is observed that most participants are familiar with the "E-learning" and "Distance education" terms rather than "mobile learning" and "LMS" terms. On the other hand, it is also obvious that many institutions/organizations provide training programmes to their employees through these methods.

Regarding the results of the study, it can be said that the devices used for internet access are the same as those used for internet-based training, such as desktop computers and notebooks. Therefore, tablets or smartphones are less widely used for internet-based education.

There are three main reasons why the participants prefer to receive training on the internet: time independence, location independence and affordability.

Although most of the participants stated that they willingly accept this way of training, the rate of participants expressing that it was at their institutions'/organizations' request is not small (38.24%).

Results related to teaching materials show that participants are not comfortable with text files and this reduces the efficiency of internet-based training.

It is encouraging to conclude that the participants of this study are satisfied with receiving training via the internet, also that institutions/organizations are starting to provide such training programmes for their employees more frequently. The use of mobile devices for these programmes will increase. However, a consensus among the participants was not achieved regarding the replacement of face-to-face training by internet-based training.

Considering the number of participants and their profiles, to achieve better results we would need to work with a larger number of participants. In addition, it would be interesting to carry out similar questionnaires on participants with different educational levels and to compare the results.

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