



100 MOOC PROJECT FOR SMES: WHAT DO THEY NEED

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Abstract

This learning needs analysis study has been conducted within the scope of a European Union funded Project that proposes to build up a Massive Open Online Course (MOOC) portal to support the adaptability of employees and employers to new social and economic structures and increase adaptability of them via ICT tools in Turkey. In the scope of this Project which is called as Bilgeİş, it was planned to create 100 MOOCs (mainly ICT usage related) and a survey was conducted for specifying the training needs in determined sectors. The data were obtained from 585 employers/executives and 1030 employees of Small and Medium Enterprises (SMEs). It is found that learning needs of the target group have occurred generally in equipment and tools used at the workplace, Office programs, accounting software etc. Also, a list has been created according to survey results and obtained six categories. Examining the current station of SMEs helped to shape the planning of MOOCs' design and development process. The results of the current study are not only important for Bilgeİş MOOCs, but also for MOOC developers, ICT trainers, experts, policy makers, etc. can benefit from them.

Introduction

Technological improvements and the economic globalization deeply affect all countries. These changes cause lots of different social activities and lead us to interrogate the situation while adapting them. Since it is a well-known fact that traditional formal courses are not sufficient to create long term effects (Hager, 2011), lifelong learning plays an important role in terms of social integration and adaptation of professional qualifications for both individuals and organizations. At this point, online learning has gained many different roles such as an equality of opportunity supporter, a fast problem solver, remarkable teacher, and a talkative classmate; especially MOOCs are excellent for promoting lifelong learning. Therefore, many people begin to learn in such learning environments. Even, some people believe it is a "transformative revolution" (Bonvillian & Singer, 2013). By means of these environments, everyone can be a "learner-teacher" since the cons related to especially Information and Communication Technologies (ICT) based training are removed (Hamburg & Hall, 2008). Today, especially Small and Medium Enterprises (SMEs) need to have flexible learning environments in order to meet their training needs. Using ICT tools for learning is considered an ideal solution for SMEs, because they promote informal learning that enables to simplify the tasks in work environment and learning in groups in natural way (Hamburg & Hall, 2008).

Problem

De Vries and Brall (2008) state that most of the companies face with several learning needs which are changeable and should be met rapidly. In this respect, the term of lifelong learning is directly related to support employability (Bienzle, 2008). In order to create more flexible and effective learning environments for employees or employers, e-learning, especially MOOC may meet the expectations. While there is extensive literature related online learning environments (Morris, 2014), MOOC are a new but very popular phenomenon in e-learning field (Liyanagunawardena, Williams, & Adams, 2013). They have become significant components of perceived innovation for online learning environments (Guàrdia, Maina, & Sangrà, 2013). Now, they can be seen a new understanding of instruction and learning (Guàrdia, Maina, & Sangrà, 2013). In other words, Kay, Reimann, Diebold, and Kummerfeld (2013) state that “MOOC have exploded onto the scene, promising to satisfy a worldwide thirst for a high-quality, personalized, and free education” (p.70).

Many MOOC offer free-of-charge courses to people, anywhere and anytime, and enable access to higher education and beyond for people who cannot afford a formal education and are disadvantaged (Patru & Balaji, 2016). So, MOOC generally allow learners to join the courses and leave whenever and wherever they want. Therefore, if it is planned to create a MOOC portal which in learners will not drop out easily and complete the courses they enrolled, designers should be careful and meticulous by applying appropriate pedagogy for the courses (Liyanagunawardena, Kennedy, & Cuffe, 2015). If educational interventions focus and deal with some risk factors, dropout rates may decrease (Halawa, Greene, & Mitchell, 2014). For instance, making content related with real life situations/problems can enable the courses more attractive and they can be more beneficial for the target group.

From the globalized world perspective, there are unlimited, mixed, changeable and unstructured opportunities to learn and consequently it is important to decompose and select what is needed, what should be learned for people who are limited by time and place (Illeris, 2011). So, analysis process has a significant role in the selection, arrangement, design and application of all learning components taking place in any kind of training program. As a result, in the scope of current project, analysing the needs and demands of target learners is crucial for the effectiveness and efficiency of the training program before creating 100 MOOC. Based on from here, the researchers wanted to examine the demands, ideas, current situation of employee and employers worked in SME in Turkey before creating 100 MOOC throughout Bilgeİş Project. By analysing the target groups' needs, demands and current situation, it will be possible to create an effective online learning environment for professional development.

About the 100 MOOC for SMEs Project: Bilgeİş

This need analysis study has been conducted within the scope of a European Union funded Project (Technical Assistance for Capacity Development of Employees and Employers via Information and Communication Technologies) that proposes to build up a MOOC portal to be free, accessible and user-friendly designed with advanced tools, which will support the adaptability of employees and employers to this new social and economic structures and to

increase adaptability of employees and employers by investing more in human capital via ICT tools in Turkey.

Methodology

Since the researchers' major aim is to determine the course topics to be developed in line with the needs of the labour market through measurements based on self-assessments of employees' and employers', this study was conducted within survey research methodology. The researchers wanted to describe the current situation, needs and demands of the target group to create an effective MOOC portal with 100 courses which will be prepared for professional development of SMEs in Turkey. By choosing purposive sampling method, it is aimed to reach employees and employers from different size and sectors of the target group in five provinces due to high population of enterprises.

Data Collection

The Learning Need Analysis survey covered five provinces of Turkey and the data were collected from micro (with 1-9 workers), small (with 10-49 workers) and middle sized (with 50-249 workers) enterprises engaging in the sectors such as manufacturing, commerce, transportation and storage, accommodation and catering (selected as dominant sectors for Turkey). The survey has been carried out in the target sectors, namely, start-up companies, R&D companies, and SMEs; following sizes of companies: micro, small and medium. As a limitation, the results of the research covered only 5 pilot cities, so they don't represent the general overview of Turkey. Also, there also have been shifts in quota according to sectors and size groups because the rate of acceptance is low.

The data were obtained from 585 employers/executives and 1030 employees between February 2016 and March 2016 with face-to-face survey technique collected by a market research company. In the phases where the survey is planned and executed, Technical Support Team of Bilgeİş Project worked in cooperation with the researchers who are in Beneficiary team.

Learning Need Analysis Survey

The survey covers a lot of issues regarding: Company background (sector, field of activity, date of establishment, scale by number of employees, relative distribution of employees by gender and education level, financial turnover, etc.), general opinion on ICT, satisfaction regarding general skills and ICT skills, the administrative and accountancy software used in the company and competency of users, software other than administrative and accountancy used by the employees to fulfil general and work-related activities; frequency of using such software; their contribution to the daily work (priority), and users' competency in using them, demographic information.

Table 1: Qualitative distribution of enterprises in provinces which are included for the Learning Need Analysis survey

		Ankara	Eskisehir	Gaziantep	İstanbul	İzmir
Sectors	Manufacturing	66.1	44.3	56.0	56.2	49.6
	Commerce	16.5	25.0	31.0	23.7	31.1
	Transportation and Storage	9.1	10.2	3.6	7.1	10.9
	Accommodation and Catering	8.3	20.5	9.5	13.0	8.4
Type of Business	Micro	6.8	29.4	27.4	17.8	22.2
	Small	46.2	41.2	56.0	71.6	59.0
	Medium	47.0	29.4	16.7	10.7	18.8

Table 1 shows the percentages of participants' response rates to need analysis survey according to their company size, sector and city. As it can be understood from the numbers, the researchers intended to create a balanced selection of groups. Participation rates of the cities are İzmir (21%), Ankara (21%), İstanbul (29%), Eskisehir (15%), Gaziantep (14%). An analysis of a breakdown of employers and their representatives interviewed shows that one of four questionnaires (24% of all) was filled out by female employers and representatives. The youngest of the employers and their representatives, who took part in the survey, was 22 years old and the oldest was 69 years old. Their average age was 40. Employees' average work experience is about 5.6 years in the companies which they are working currently and they have worked 9.6 years in the same sector. The average period of time in which the employees involved in the survey have been in business life is 12.9 years.

Findings

Before examining the survey results, to see some general findings can be helpful in terms of identifying the current situation of the target group. More than half of employers see IT as an integral part and the most important component of their businesses. One in five employers said that they use Internet banking in order to continue their business whereas one in five employers noted that the presence of IT had no importance to their business. While three of four business managers (employers) believe that ICT would contribute to their development of business and increased efficiency at their workplace, there are several factors which prevent the employees to be involved in training activities. According the survey results, following factors can show their current situation: Intense and long working hours (44%), Not having free time outside working hours (30.8%), Financial shortcomings (14.1%), Lack of a guiding person or institution in this respect (6.7%), not believing that these activities come back as financial gain (7.1%), Social environment, family obligations (10.2%) In general, 46 % of employers reported that the development of IT skills could put them in an advantageous position in their business segment whereas 27% stated that their positions in the market could only be maintained through the development of skills. 42% of employers in Istanbul, where competition is stiff, believe that this is the only way to maintain their position in the market.

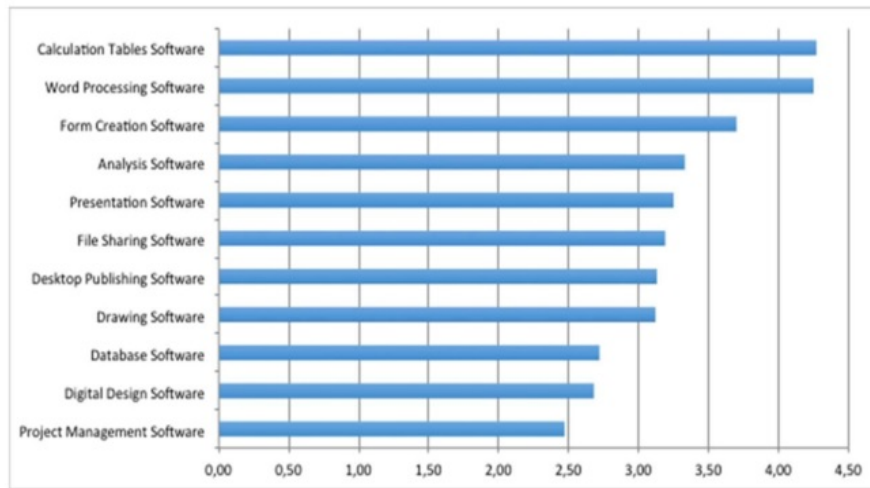


Figure 1. Frequency of Use for Software Used to carry out the Activities Related to the Work Done (Employees)

As seen from the Figure 1, the employees use a variety of software to carry out the activities related to their works. The most commonly used ones among these are software for calculation tables, (Excel, Numbers, Google Sheets, etc.) and word processing (Word, Pages, Notepad, etc.). These two types are followed by Form creation (Excel, Form Builder, Formoid, Arclab etc.), analysis (Excel, SPSS, Stata, Matlab etc.), presentation (PowerPoint, Prezi, Keynote, etc.) and drawing (Paint Photoshop, Corel Draw, SketchUp, Visio, etc.), file -sharing (Dropbox, WeTransfer, Google Drive, OneDrive, etc.), database (MS Access, Libre Office, FileMaker, MS SQL, ORACLE, etc.), and desktop publishing software (PDF Maker, Publisher, Adobe InDesign, etc.). It draws attention that digital design software and project management software are rarely used in the target workplaces.

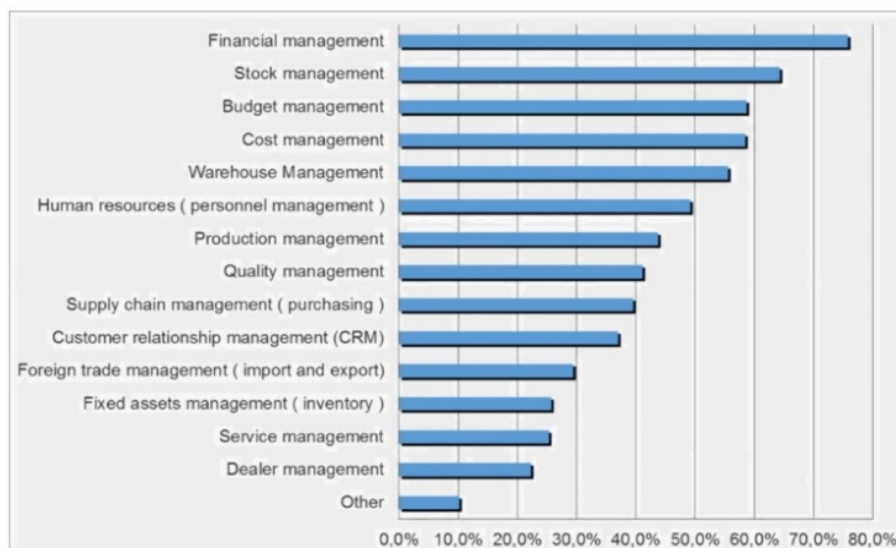


Figure 2. Frequency of Use for Software Used to carry out the Activities Related to the Work Done (Employee & Employers)

The software related to management and accounting generally used by employers in order to carry out activities related to production of goods and services and the training needs. As it can be seen from the Figure 2, the priority is always given to the software related to *financial management* in administrative and accounting software for employees and employers. This is followed by *stock management* and *warehouse management* software. However, the *financial management* takes place in first rows for manufacture, trade, transportation and warehousing sectors, the priority is given to the software related to *budget management* for accommodation and food services sector. In addition, *budget management* and *cost management* software are among the prioritized software for transport and storage sector. Also compared with the others, in medium scale enterprises warehouse management appears to be more evident. It is clearly seen that effectiveness of the software use is due to the size of the enterprise. For small scale enterprises, stock management and for micro scale enterprises budget management software is more crucial.

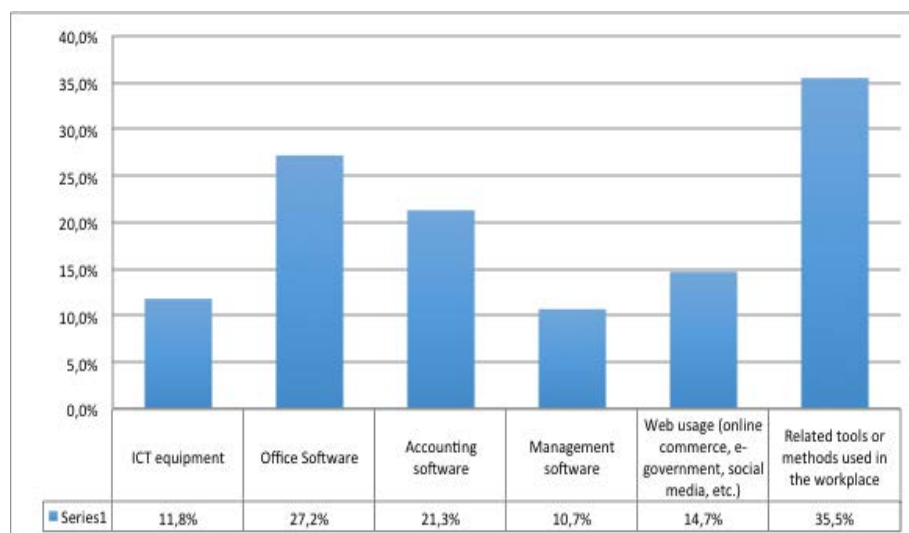


Figure 3. Employee Demand for Training (%)

Figure 3 shows that 35.5 % of employees' demand training related to equipment and tools used at the workplace. It was followed by office software with 27.2% and accounting software with 21.3%. These demands were followed by training in Internet use related to online trade, social, media, etc. (14.7%). The other learning needs are related to ICT equipment (11.8%) and management software (10.7%).

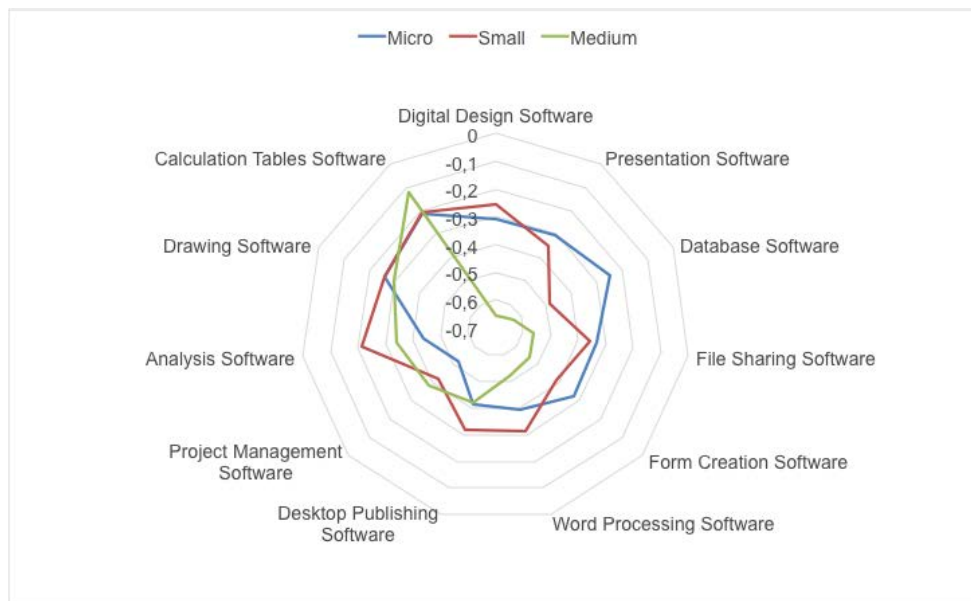


Figure 4. The need for the software training for the functioning of the enterprises due to their scales

Figure 4 demonstrates the training needs for software groups of the business based on the number of its employees. The highest training need has been found to be in medium scale businesses. It has been seen that for medium scale businesses, the biggest need is digital software groups and database software groups. Training needs occur in database, project management and form creating software groups in medium scale businesses; on the other hand, the needs occur in project management, analysis, desktop publishing and text processing software groups in micro businesses.

Although survey results have helped to decide course topics, categories etc., the researchers should have determined some criteria to specify the scope of the courses. These criteria have created with the current situation of the SMEs. For example, SME's busy schedule is very critical issue to complete the training courses and an analysis of employee satisfaction regarding IT training indicates that "lack of contribution to training" (25%), provision of training outside of working hours or on off days (23%), insufficiency of training periods (22%), and inadequacy of applications (21%) were the main factors affecting satisfaction. So, the courses will be prepared according to those concerns. Also, the content is heavily based on procedural knowledge rather than conceptual. Courses will be prepared in reasonable size learning objects, so this will make the system modular. Assessment is another critical issue, so the courses will have more authentic assessment components.

Learning needs of SMEs generally occur in database, project management, digital form creating software groups, analysis, desktop publishing and text processing software groups. A list has been created according to survey results and obtained six categories for course topics such as: (a) Hardware related (3D printer use, Installation of Network Printer, Installation of modem, etc.), (b) Business Software Related (Google Docs, MS Office, Desktop Publishing, Drawing, File Sharing, etc.), (c) Internet related (E-Commerce, Online Advertising, basic web site construction, etc.), (d) Enterprise Resource Planning (ERP) and Customer Relationship

Management (CRM) related, (e) Sector Specific (CAD-CAM-CNC, SolidWorks, Quality Control and ISO Documents), (f) Not ICT related: Managements Skills (Leadership, energy usage management, report writing, etc.) and Individual Development (Communication, Delivering Effective Feedback, Handling Difficult Customers, etc.).

Conclusion

As developments in the area of ICT affect the competitiveness and economy, new technologies also increase the opportunities for reorganization and create competitive edge over rivals who have lower technologies (Hager, 2011). Also, the necessity of further investigation on individual and organizational learning needs becomes visible (Russ-Eft, 2011). In this respect, this analysis work helped the project team to understand SME's training needs. The results made the needed course topics clear. Moreover, the enablers and barriers to take online courses were determined. To sum up, results of this research are expected to contribute to the implementation process of creating MOOCs or ICT courses for adult training designers and the instructors. The topic list created at the end of analysis can guide MOOC developers who are trying to create ICT trainings.

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