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Original Article

A Systematic Review of Research on E-learning in Service Organizations (Non-academic institutions)

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Abstract

This study is practical in terms of its objectives, and this study aims to provide a comprehensive picture of the online teaching-learning process in Iranian service organizations (non-educational). This research methodology applied a quantitative approach in its data collection method. In the first part, using a systematic approach and documentary study, 870 related research about e-learning at non-academic organizations were identified. Then, formerly after being studied and analyzed based on the criteria such as the research title and abstract, finally, 32 cases were selected and analyzed. In order to determine the research validity have been used the instrument of the Basic Critical Appraisal Skills Program of Glyn et al. (2006) and to examine the reliability, the method of agreement between the two coders was used and confirmed at a kappa value of 731%. The results indicate that the most critical issues regarding the online teaching and learning system in non-academic organizations are the feasibility study and implementation of this method at the mentioned institutions. Furthermore, the systematic review findings also identified five critical challenges of the e-learning system. Therefore, the research results indicate that for implementing the online teaching-learning system, first, it is necessary to identify the challenges such as; challenges related to critical stakeholders, organization, pedagogy, technology, and support system.

Keywords

Teaching-learning process, e-learning environment, systematic review, Iranian service organizations.

Introduction

In today's digital age, many businesses are turning to e-learning to increase productivity and efficiency (de Araujo, Pasadena, Paramarta & Sunarsi, 2021). Employees must have access to up-to-date knowledge in our ever-changing world). Sundram et al.,2020). As a result, they can succeed in their roles and learn new skills as necessary (Flores et al.,2020). There are benefits to e-Learning in the workplace that help increase business productivity: accessibility anywhere and anytime (Fraij, 2021), faster knowledge transfer; reduced training time; improved retention rates; and savings from reduced travel spending. In the workplace, online learning can help people become productive and also, and It is a great learning experience(Alzaabi & Ghani.,2021). Employees will be more productive via computer learning(Alhabeeb, A., & Rowley.,2018).In other words, they will have much to learn because e-learning offers more content than face-to-face learning and saves time(Grabusts& Teilans.,2021).

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Because online learning is fast and easy, staff will not waste time attending unnecessary meetings (Morgan.,2020). It is easier for them to go online rather than leave their workplace to attend training sessions (Anderson.,2021). E-learning is cost-effective because the employer does not need to hire highly paid instructors(Li et al.,2021). This will allow employees to learn at their own pace and not waste time waiting for a trainer. They also learn what he needs for their job faster with the help of e-Learning, which again saves time in completing tasks at organization(Ali.,2020).

So, online learning is now becoming one of the most popular learning methods. It is essential for the employees because it reduces the cost of training, increases access to organizational training(Maga et al.; 2019), enhances the effectiveness of teaching and learning, creates flexibility in teaching-learning methods (Srivastava, 2019) and learners achieve higher learning objectives (Kimiloglu & et al., 2017). There is no doubt which online learning has changed the face of training to a great extent. In addition, recent studies show that online training positively impacts employees as it improves digital skills and leads to better employees (Vahdat,2021).

Another benefit of e-learning is that learners can learn by themselves. As a result, they will get a detailed knowledge of the subject. For example, if you want to learn more about a particular software at home, open your laptop, access the e-learning portal, and study the software. Nevertheless, now it is a question, what is e-learning? Radha, Mahalakshmi, Kumar, and Sivakumar, 2020, said e-learning uses electronic technologies to access curricula outside the traditional classroom setting. The use of desktops, laptops, smartphones, and the Internet provides rapid growth in e-learning and has proven to be the best in all organizations, especially during this lockdown (Radha, Mahalakshmi, Kumar, and Sivakumar, 2020). especially E-learning is new educational technology that is an event in the information age that takes place in a knowledge-based society and is the best place to learn in the current age. Therefore, efforts and experiences in this learning mode are greatly appreciated worldwide (Ibrahim and Hindan, 2019).

Over the past few years, the online learning process has been considered in many organizations and companies due to the rapid development of technology, increasing Internet speed, and the prevalence of mobile devices. (Hammad & et al.; 2018). There is evidence that e-learning in non-academic organizations has grown rapidly in the last decade (Kimiloglu and Kutlu, 2017). According to the Business Wire report with a World Bank estimate (2020), the electronic market will reach 38 billion dollars by 2024. At the same time, it will grow to $38 billion by 2026. Many organizations have adopted this model because it takes 40 to 60 per cent less staff time than traditional learning. In addition, 90% of major companies currently use e-learning software (Rizvi and Nabi, 2021), including organizations such as Cisco, Nek, IBM, Black and Decker, WorldCom, PNC Bank, and Toyota and Shell, Paypal, and Molly Fletcher Company. Therefore, they could invest money to transform their organizational training from traditional to online. As a result, the eLearning market is expected to experience significant growth between 2021 and 2025 (Globe Newswire, 2021). It is significant to note that the online learning industry has grown by over 900% since 2000 (Abuatiq, 2021).

Researchers state the reasons for this rapid growth are; The need to train large numbers of staff at a low cost, the need for a modern workforce for lifelong learning, and finally, the fact that learning through information and communication technologies is often easier than face-to-face classes. Similarly, environmentalists estimate that online learning will reduce greenhouse gas emissions by 86% (Belaid, 2021). Cultural, educational, and environmental factors have led to rapid growth.

The development of e-learning must not be limited to certain countries, and although the US and Europe currently have the largest e-learning markets, Asia-Pacific is also overgrowing. Additionally, due to the coronavirus pandemic, 98% of organizations provide the training

through electronic information and communications technology and can save 43% on training costs. As a result, they can get that amount on the investment and development of the training system. Furthermore, there are other reasons why this learning approach has significantly accelerated in recent years. For example, 77% of companies that used online learning (in 2017) have reported that this method of learning reduces time and increases its efficiency. In line with this idea, 40% of 500 company members of the Fortune Institute acknowledge a correlation between e-learning and the company's success (almost 2 out of 5 companies use this training approach) (Beinicke & Kyndt, 2020).

According to Liguori & Winkler's findings (2020), 93% of companies that have not used e-learning tend to use this method in the near future to develop and empower their employees. In this regard, 98% of SMEs in 2020 used video training programs to empower and deliver organizational training (Machwate et al., 2020), and 74% of organizations consider e-learning as a competitive advantage that improves individual and organizational performance and increases the company income (Kimiloglu et al., 2017). According to a survey of 2,500 companies, those that used e-learning for employee development and empowerment had an average of 25% more income and profit than others (Chetty, 2020), and in proportion to that, employees also have a higher income (Islam et al., 2015). Furthermore, the use of e-learning, in addition to increasing incomes and corporate profit, improves employee productivity by between 15 and 25%, and on the other hand, increases employee participation by 18%. (Yang, 2019). The study shows that e-learning has also impacted employee retention and has increased its rates from 25% to 50% (DeGani, 2014). This will be more pronounced among the next generation (Gen z) employees as they prefer environments with more learning opportunities. According to a study(2018), Approximately 90% of businesses use e-learning as a mechanism to develop talent. In addition, other studies have shown that online learning creates better learning experiences than traditional teachings. As a result, it has been well received by employees and organizations, resulting in the U.S. federal government spending almost $2.2 billion in 2019 on feasibility and implementation.

On the one hand, another obvious benefit of e-learning is reducing staff training costs (it has been reported that companies can save 50-70% of the costs associated with training) and reduced training time. This means workforces can spend more time doing their core tasks, which increases productivity and efficiency. In addition to all the mentioned benefits, the COVID-19 pandemic has significantly expanded the use of e-learning in non-academic organizations. The results show that using e-learning during COVID-19 reduces employee burnout, increases mental health, increases effective training opportunities, increases employee participation, and increases self-learning (Edge-point learning, 2021). Therefore, e-learning seems essential for international, leading, learner, and fast-thinking companies (and global companies). Furthermore, this learning method benefits organizations that cannot get through traditional education pathways)Pappas, 2019).

However, along with the growth of e-learning in developed countries, efforts have been made to implement this approach in other countries, especially Iran. However, fewer organizations could implement it comprehensively due to some critical challenges. For example; lack of codified guidelines, weakness in rules and regulations, lack of a clear executive method, weakness in network communications, insufficient content, lack of accurate and timely information about e-learning capacities, and finally, agitation Employees have created obstacles to the effectiveness of teaching-learning in organizations (Shams & et al.,2019).

In this regard, the research in e-learning has been mainly in the education industry and higher education, and less has been paid to this issue in organizational education. Therefore, this issue makes the importance of research and the disadvantage of addressing this issue clearer. For

example, many researchers and institutions of higher education have presented models, theoretical and experimental frameworks, some related indicators, and components of e-learning evaluation (Zammel et al., 2018). however, the study indicates that non-academic organizations have been paid less attention to these issues than educational institutions(Zalat et al.,2021). Therefore, the present study, with a systematic review of the researches ¬ in service organizations, seeks to identify the related issues and challenges of the online teaching-learning system. For Achievement of the research objectives, it is expected that the e-teaching-learning system will be designed and implemented more purposefully. In order to design and implement the e-learning system, create a deeper understanding of these challenges and open a new vision for researchers and policy-making,¬In respect to this subject, research questions are put forth as follows:

1. What are the most topics of e-learning in organizations?
2. What are the challenges with e-learning in organizations?

Research methodology

The present study was conducted in terms of applied purpose and in terms of collecting findings using a qualitative approach and systematic review method. In this study, regular and specific methods have been used to identify, select and critically evaluate e-learning research, and then their findings have been analyzed)Abbasi & Seraj Zadeh, 2017(. Cochrane's method has been used to analyze the findings, including seven steps; question selection, setting inclusion criteria, finding studies, selecting studies, evaluating the quality of studies, extracting data, and analyzing and presenting the results (Saffari & et al., 2013).)

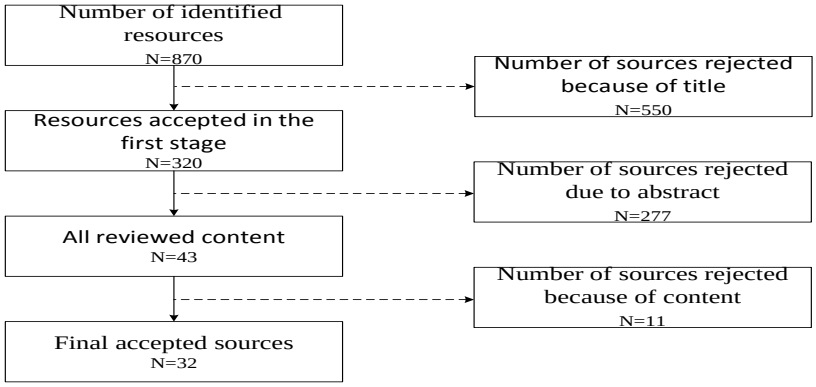

Figure 1. How to review research related to e-learning in Iranian organizations

In the first step, through a systematic review in the scientific databases such as Element, IranDoc., SID, Magiran, Noormagz, and Civilica and by searching for keywords such as electronic learning, flexible learning, virtual learning, distributed learning, online learning, distributed teaching, open education, flexible education, about 870 articles, and research reports were found. After further searching for related keywords, 550 research were left out, and then two more screening steps were completed. Finally, 32 scientific related to the research topic were conducted and reviewed. The Glynn et al. (2006) skills critical appraisal program was used for the validity of the research (Glynn, Schneeweiss & Stürmer, 2006). Furthermore, the agreement method between the two coders was used to evaluate the research reliability. In this way, another person, as an expert in e-learning, analyzed the articles and extracted and

categorized the concepts. Then, the number of findings presented by the researcher was compared with the findings presented by the expert, and finally, according to the obtained output, the kappa index was calculated. The value of the kappa index obtained is 0.731, which indicates the level of agreement and the validity of the research.

Table (2) shows the specifications of the selected articles.

Table 2. Details of selected research articles

Publication Year	Authors	Article Code	Publication Year	Authors	Article Code
2016	Gholipour & et al,(2016)	17 M	2019	Asime & et al, (2019)	1 M
2019	Shiri & Safiaghdam, (2019)	18 M	2018	Ramezani Ardi & et al, (2019)	2 M
2014	Mohammadkhani & et al, (2014)	19 M	2018	Ramezani Ardi & et al, (2019)	3 M
2014	Khoshneshin & Khoshnoudi Far, (2014)	20 M	2013	Taghva & et al, (2013)	4 M
2020	Soleimani & et al, (2021)	21 M	2014	Ostadhasanloo & et al, (2014)	5 M
2019	Shams & et al, (2019)	22 M	2018	Habibizad Navin, (2018)	6 M
2018	Nasirinia & et al, (2018)	23 M	2013	Faraji, (2014)	7 M
2014	Salari & Karami, (2014()	24 M	2015	Hosinpor & et al, (2015)	8 M
2015	Rezaee kelidbari & et al, (2015)	25 M	2017	Gholami & Norouzi, (2017)	9 M
2013	Vakili, (2013)	26 M	2019	)Ershadi & et, (2019)	10 M
2016	Esmaieilpour & et al, (2016)	27 M	2013	Rahimi, (2013)	11 M
2011	Mosadegh & et al, (2011)	28 M	2016	Arabsorkhi Mishabi & et al, (2016)	12 M
2014	Feizi & Behzadi, (2014)	29 M	2018	Nazari & et al, (2018)	13 M
2020	Vazife & Khani (2020)	M 30	2019	Allami & et al, (2019)	14 M
2010	Kharazi & Esfandyari moghadam, (2010)	M 31	2018	Shami Zanjani & et al, (2019)	15 M
2017	Fathi & Seif, (2017)	M 32	2012	Niazazari & et al, (2012)	16 M

Research Findings

As explained in the research method section, 32 articles published during the last ten years on e-learning in Iranian organizations have been studied in this research. Then, in the descriptive data section, indicators such as; the format of the articles, the time of conducting the research, the typology of the researchers, the research method used in the research, the quality and evaluation of the research, and finally, the answer the first research question, the components and variables studied are considered. Finally, in the second part, the challenges of e-learning in an organization have been discussed qualitatively, whose explants are given below:

A) Type of articles: In the studied samples, 84.37% of the articles are from scientific research, and 15.62% of the articles are in the form of conference papers.

Table 3. Format of articles related to e-learning in organizations

Frequency Percentage	Frequency	Type of Article/Papers
84.3%	27	Research-Scientific
15.7%	5	National Conferences

B) The period of the research done on electronic learning: The criterion of the period was the date of publication (and not the date of the research).

Table 4. Timeframe for publishing articles related to e-learning in organizations

Percentage	Frequency	Time
3/12	1	2011
3/12	1	2012
12/5	4	2013
15/62	5	2014
6/25	2	2015
9/37	3	2016
9/37	3	2017
18/75	6	2018
15/62	5	2019
6/25	2	2020
100	32	Total

C) Research methodology: In the sample study, most of the articles have used the quantitative method, of which 53.12% the articles were quantitative, 33.33% were qualitative, and 15.62% were mixed.

Table 5. Type of research method at the research conducted on e-learning

Percentage	Frequency	Research Methodology
53/1%	17	Quantitative
33/3%	10	Qualitative
15/6%	5	Blended

D) Quality and evaluation of research:
In the discussion of quality and evaluation of research, the researcher does not aim to show the weaknesses of research but to classify articles into the first and second types. In other words, in discussing the quality of article evaluation, the researcher determines several criteria for evaluating the quality. In this article, the questions, objectives, hypotheses and research results and the form and structure of the articles are discussed in general. Most articles in the discussion and conclusion have stated that the lack of attention to e-learning in organizations will bring about many problems. On the other hand, several articles have suggested that e-learning has tangible and intangible benefits for the organization. The research questions were pursued in another category to assess employee satisfaction with e-learning. Some researchers stated that it is not in the desired situation. Finally, no structural problems were observed in the articles.

Research question1: What research topics are conducted in electronic service (non-academic)

organizations?
In the samples examined, 18 issues in these researches related to e-learning systems have been further analyzed and discussed, with the subject of the feasibility study, holding and implementation of e-learning having the most frequencies. Based on the results of the studied subjects, respectively, the most frequencies are included; feasibility study, holding and implementation of e-learning, successes, advantages and disadvantages and challenges of electronic learning; assessment process in e-learning; the effect of e-learning on improving the quality of in-service training; the continuous use of electronic learning; performance of the organization and employees; assessing leadership competencies and developing in-service electronic learning; evaluating the performance of the cloud computing model; and having validation of e-learning model in in-service training; employee social trust; security requirements on electronic learning; acceptance of electronic systems; empowering employees through electronic learning; intention to use electronic learning; comparing electronic , combined and face-to-face learning on industrial education; the role of electronic learning on updating ICT knowledge of employees; the role of e-learning in the organization; and feasibility study of professional training of employees for electronic learning.

Research Question 2: What challenges are related with e-learning in organizations?
In this section, 32 articles selected by researchers were carefully reviewed, and a manual coding method was used to identify the main concepts, categories, and dimensions of e-learning challenges. In the first step, each article was carefully reviewed, and concepts related to the purpose of the research were extracted. In the second step, related and similar concepts in terms of categories and, finally, categories in terms of general dimensions were categorized. The above steps are reported in Table (6) based on the opinion and approval of the Advisors and Co-Advisors in the form of 5 dimensions, 21 categories, and 249 main concepts(M).

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Table 6. Main concepts, categories, and dimensions of e-learning process challenges in organizations

Main Concepts	Categories	Dimensions
Insufficient necessary general and technical competencies(merits) of electronic specialists in electronic context of the Organization (M3) / Unclear competencies required for e-learning managers in the Organization (M3)/The need for managers to have the necessary professional competencies in the design, deployment, implementation and development (M3)/Insufficient knowledge and skills of the key stakeholders including managers and officials in information technology (M22) / Insufficient proportion between the capabilities and abilities of a technology with the needs of individuals (M32) / Insufficient attention to the real needs of businesses and learners with the mechanism of designing education in e-context (M3) / Lack of specialized and qualified manpower on technology (M22)/Insufficient knowledge of training needs and other mechanisms of staff development and empowerment (M17)/Familiarity of policymakers with e-learning(M36)/Stakeholders' passive behavior towards e-learning(M15)/Insufficient attention to psychological factors in the design of training courses in the electronic context (M32)/Insufficient attention to the role of e-learning in employee empowerment (M1)	Competencies	Key stakeholders of the organization
Lack of regulations and instructions related to increasing the workload of trainers in an online context(M31)/Insufficient executive law in the field of accreditation and issuance of work permits for private educational institutions (M 31) / Weakness of law in e-learning(M17) / Insufficient compliance with Intellectual property (M17) / Insufficient attention to the comprehensive e-learning system in the laws and instructions of organizations (M29)	Rules, regulations	Organizational
Insufficient support of managers and policymakers of the Organization (M22) / Negative attitude of managers and policymakers of the organization and administrators toward e-learning(M22) / Inadequate investment to hold training courses in an online context (M14, M17) / Insufficient attention to the training process and empowerment of instructors towards e-learning system (M18, M27, M17) / Insufficient satisfaction of managers and policymakers of the organization of the teaching-learning system in an online context (M24) / lack order to affect the opinions of users (M15) /Discontinuation of using an electronic system by organizational decision-makers (M15) / Insufficient efficient use of resources (M26) / weakness of educators and implementers regarding professional competencies and capabilities necessary to implement effective e-learning(M3) / Insufficient attention to educational standards in the design of training courses in an online context (M3) /	Senior managers and policymakers of the organization	
The issue of intellectual property (Article 31) / Insufficient attention to the challenge, obstacles, and ethical misbehaviours in an online context (M 16) /	Ethical	
Traditional nature of educational structure in the Organization (M17) / Insufficient attention to organizational systems and policies regarding the development and implementation of e-learning (M17, M22) / Parallelism	Structural	

and the existence of multiple decision-making centres in the field of e-learning in the Organization (M17) /		
Weakness of incentive and motivational system of the organization (M22) / Insufficient attention to the issue of culture regarding the holding of training courses in an online context (M14, M18, M28, M22) / Insufficient familiarity of developing countries with e-learning(M36) / Insufficient attention of companies to use holding training courses in an online context due to uncertainty about the effectiveness of the mentioned courses (M28) / Insufficient desire of learners to participate in training courses in an online context (M29, M22) / Inadequate introduction of electronic system to familiarize learners with it (M14, M36, M 17, M 22) /The superficial view of the organization towards e-learning(M22) / The unacceptability of the conferred certificate in this method (M22) / Lack of serious attention to e-learning by the organization(M22)/Incomplete understanding of the factors influencing the success of education in an online context (M19) Insufficient commitment to completing defined activities in in an online context (M17) / Insufficient understanding of cyberspace (M30) / Incomplete familiarity of the organization with the capabilities and functions of cyberspace (M30) / Inadequate agreement on the concept of e-learning(M17)) Insufficient attention to creating a suitable environment for the optimal use of electronic educations (M22) / Insufficient attention to the comprehensiveness and systematicity of the learning system in an online context (M29) /Belief in the existence of gaps in theory and practice in the teaching-learning system (M20) / Believers believe that the effectiveness of electronic courses is lower than face-to-face courses (M20, M24) / Insufficient acceptance of electronic staff due to insufficient knowledge of it (M15) / Insufficient attention to the existential philosophy of the teaching-learning process in an online context (M9) / Lack of awareness about the usefulness of the use of electronic educations(M22) /Lack of a clear understanding of the nature and quality of e-learning(M22) / Existence of some cultural barriers taken from traditional education versus teaching-learning method in an online context (M31) Staff misconceptions about the effectiveness of e-learning(M32) / Negative attitude towards e-learning(M9, M31) / Insufficient belief in the effectiveness of e-learning and inefficiency interpretation of this method of education (M17) /	**Cultural**	
Possibility of spreading security threats due to the development and growth of transformational educational technologies (M12) / possibility of security threats and attacks on computer systems (by hackers) (M12) / Insufficient attention to design mechanisms to increase security in electronic space (M12) / Insufficient Existence of mechanisms for systematic confrontation with security threats (M12) / Insufficient systematic and comprehensive approach in order to identify challenging areas in terms of security (M12) / Insufficient attention to the issue of securing e-learning by senior managers, policymakers and policy builders of the education system (M12) / Insufficient attention to the security requirements of e-learning at the same time and from the perspective of all stakeholders (M12) / Insufficient attention to the issue of management and engineering of security requirements in Electronic platform(context) (M12) /	**Security mechanisms in e-learning**	

Insufficient attention to specific strategies and goals in the use of transformational technologies in education (M17) / Excessive attention to the goals of traditional education neglect new educational goals (M17)	**Learning policies, goals, and strategies**	**Pedagogy**
Insufficient attention to the requirements and obligations of educational design in the e-learning system (M2) / Insufficient attention to the essential requirements of the teaching-learning process in an online context (M2) / Insufficient attention to pedagogy of learning in the design, development, implementation of training courses in an online context (M2) /Insufficient attention to the main factors of the learning process in the design and implementation of training courses in an online context (M2) / Insufficient attention to the characteristics, abilities, skills and personality of learners in the design of training in an online context (M2) / Unequal attention to all dimensions and components of e-learningin the organization and to the same extent (M1) / Designing training courses in electronic context without pre-defined goals (M14) /Lack of clear and sufficient plans, strategies and policies to implement educational courses in an online context (M19) / Excessive attention to the design of electronic programs by computer specialists and neglect of educational pedagogues (M24) / Insufficient knowledge of educational planners with electronic teaching process (M36) / Insufficient attention to the design of the appropriate model and framework in order to implement the electronic system in the organization (M22) / Insufficient support for the educational design approach to improve the successful and quality electronic system (M22) / Reduce the role and responsibility of educational designers and increase the responsibilities of curriculum planners in training courses in an online context (M18) /Insufficient attention to the giving quality, and seeking excellence of the teaching-learning process in an online context (M18) / Insufficient attention to the most important requirements for the development of the teaching-learning process in an online context (M2) / Insufficient attention to the needs of the organization, individuals and jobs in designing effective electronic courses (M22) / Holding training courses at inappropriate times and creating lack of interest and belonging in the learner (M14) /	**The process of designing, developing and implementing training**	

Insufficient attention to the use of appropriate processes and procedures in order to implement training courses in an online context (M12) / Insufficient attention to the components, factors and requirements of the electronic system to fulfil the effectiveness of learning achievements (M2) / Decreased attention and focus on e-learning vis-a-vis face-to-face learning (M-5) / Probability of decreasing success in conducting course projects as a team and group (M-7) / Decreased participation of learners in learning communities due to lack of face-to-face interaction (M-7) / Insufficient continuity of learners in using electronic system (M-14, M-15) / Time-consuming participation and inclusive involvement in e-learningmethod (M16) /Possibility of receiving and sending feedback with some delay in the electronic learning-teaching process (M24) / challenge in asynchronous learning (M24) / Increase in the number of learners in the electronic context compared to face-to-face classes without considering the differences between the two approaches (M27) Insufficient attention to the process of determining educational needs, prioritizing them, etc. in training courses in the electronic context (M36) / Insufficient appropriateness of approaches and teaching methods with the characteristics of the teaching-learning system in the electronic context (M36) / Insufficient willingness of individuals to actively participate in the teaching process -Learning in the electronic context (M36) / Reducing face-to-face interaction and the existence of temporal and spatial distance between learners and instructors in the electronic context (M36) / Insufficient attention to appropriate incentives to encourage the use of e-learning(M22) / Concern about the quality of electronic courses(M22) / Insufficient time to produce and implement electronic courses (M22) /	**Classroom management**	
Insufficient face-to-face contact between all learners and instructors in an online context (M5, M7, M24, M36, M22) / Insufficient interaction of learners with each other in an online context (M7, M36) / Inadequate interaction with support service systems in organizations (M10) / Limiting the interaction between the teacher and the learner in an online context (M31)	**Interaction**	
Insufficient attention to information and communication technology literacy in instructors (M5, M36) / Insufficient experience of instructors regarding electronic teaching (M7, M8) / Insufficient attention of instructors to student-centred method instead of instructor-centred method(M11) / Insufficient knowledge of instructors about individual features and differences of learners in e-learning (M11) / Insufficient attention of instructors to the importance of interaction, cooperation and dialogue between learners in the electronic context (M11) / Instructors' resistance to acceptance, application and teaching in the electronic context (M36, M22) / Competence and Insufficient readiness of instructors to be present in an electronic environment (M8, M22) / Insufficient familiarity of instructors with electronic software (M8) / Insufficient familiarity of instructors with electronic tools (8) /	**instructor**	

Inadequate skills of learners regarding technical, pedagogical and communication skills (M5, M8, M30) / Insufficient attention to information and communication technology literacy in learners (M7, M36, M17, M22) / Concern about computer use and its effect on people's perception of usefulness of e-learning(M4) / Insufficient students 'satisfaction with e-learning(M9) / Learners' worries about not completing educational activities due to Internet interruption (M25) / Lack of a sense of educational self-satisfaction in learners (M25) / Insufficient familiarity of learners with technical challenges created by the system (M25) /Anxiety and fear of using technology in learners (M25, M22) / Lack of motivation of learners to participate and use of training courses in electronic context (M24, M22) / Creating challenges for learners with low education for effective learning (M36) / Resistance of learners against the change of traditional methods of education (M22) / Creating a challenge based on reducing the freedom and independence of employees in the electronic system (M22) /	**Learner**	
Lack of a suitable model for evaluating the efficiency of e-learning proportional with the context of Iranian organizations (M6) / Insufficient attention to the evaluation of the effectiveness of educational courses in electronic context in the Organization (M13) / Insufficient attention to the results of continuous evaluations of educational courses in electronic context and neglect of timely feedback for improvement (M15, M23) / Insufficient confidence in the participation of all individuals in the evaluations (M18) / Insufficient attention to the process evaluation of educational training courses in electronic context (M23) / Insufficient attention to the use of diagnostic evaluation before the start of educational courses in electronic context (M36)) /Insufficient attention to the comprehensiveness of effective and efficient dimensions in the process of e-learning development in the Organization (M2) / Insufficient attention to assessing the readiness of the organization to accept or reject the implementation and implementation of e-learning in the Organization (M22) / Insufficient attention to design and mechanisms for continuous effective evaluation of e-learning–teaching process (M18) / Insufficient attention to monitoring, supervising and controlling the dimensions of the electronic teaching and learning process system (M18) / Lack of sufficient and deep attention to educational issues in e-learning(M20) / Insufficient motivation of employees to have an active participation in educational courses at electronic context (M21)	**Evaluation of e-learning system**	
Costly production of multimedia electronic contents (M9, M28, M17) / Inadequate quality of educational contents (M10) / Insufficient proportion of the presented contents with the abilities and skills of learners (M11) / Insufficient attention to the quality of electronic contents produced (M29) / Outdated content without paying attention to the changes of the present age (M17) / Insufficient access of learners to appropriate and sufficient resources and contents (M2) / Existence of diversity and differences of tastes in the design and production of electronic contents (M22) /	**Electronic content**	
The insufficient benefit of hardware and training equipment for e-learning purposes (M5, M8, M31, M17, M22, M3) / Lack of up-to-date hardware equipment for the e-learning system (M17) / Insufficient attention to the number of computers required for learners (M16) /	**Hardware**	**Technology**

Low speed internet (M5, M16) / Lack of necessary and sufficient infrastructure (M29, M31) / Problems with Internet access (M8, M22) / Interrupted access to web-based training courses in electronic context (M22) / Limited telecommunication infrastructure (M31) / Problems related to bandwidth (M22) / Insufficient benefiting from software facilities necessary for e-learning(M8, M31) / Insufficient attention to upgrading electronic infrastructure (M9, M15) /	**Infrastructure**	
Software limitations in the possibility of access for all users to web pages (M10) / Lack of Persian operating system (M17) / Diversity in the existence of e-learning systems (M22) / weakness in learning management system (M22) / Difference in the quality of education management system in the current situation with the expected quality (M10) / Weakness of formal electronic systems in providing appropriate platforms for implementation (M22) /	**Software**	
Insufficient attention to cloud computing in e-learning research (M26) / Challenges in transformational technologies such as gamification in e-learning(M21) / Lack of success criteria in gamification (M21) / Cultural vacuum in gamification (M21) / Lack of motivation in gamification(M21) Insufficient understanding of the needs of players in gamification (M21) / Insufficient confrontation of employees with meaningful choices in gamification (M21) / Lack of structure for modelling behavioural goals in gamification (M21) / lack of appropriate gamification tools in gamification (21) Lack of multi-channel backup system In gamification (M21) / Insufficient attention to researches on the subjects of transformational technologies (M21) /	**Transformational technologies**	
Insufficient attention to pedagogical support in electronic context (M2) / Lack of support in providing services and executive facilities in e-learning(M2) / lack of support for holding training courses in electronic context (M14, M2) / Insufficient attention to the technical support of learners in an online context (M22) / Insufficient attention to learners' support for processes related to e-learning(M17) /	**Educational-Administrative**	**Support**
Insufficient financial resources for holding training courses in an electronic platform (M16, M19, M26, M17) / High costs of holding training courses in an electronic platform for organizations with little experience in this field (M14, M29) / High costs of site maintenance (M26) / Costs of computer systems (M26) / Insufficient financial resources for the production of electronic contents (M9, M28, M17) / Costs of installation and technical support of software packages (M26) /	**Financial**	

E-learning in organizations is an interdisciplinary topic that has attracted the attention of researchers in various contexts over the past decade. The results show that studies conducted in e-learning have had ups and downs over the past ten years, with evidence of more than 32 published articles on this subject. Paying attention to e-learning as a competitive advantage has increased information transfer speed, saving time and money, simultaneous access of both instructors and learners to educational resources, more flexibility than face-to-face education, and an attractive and dynamic learning environment. Thus, a review of the research background shows that organizations in which the online teaching-learning process exists have a more effective performance than others, and Iranian organizations are no exception to this principle. As mentioned above, some research has been done on the successes, advantages, disadvantages,

and challenges of e-learning, continued use of e-learning; acceptance of e-learning systems; training needs assessment for e-learning, assessing professional leadership competencies for developing e-learning; comparison of online, blended and face-to-face learning in an organization; security requirements in the field of e-learning and the intention to use e-learning.

Additionally, some research has explored the relationship between e-learning and organizational and employee performance, empowerment, and social confidence in human resources.

For example, most of the research is on the feasibility study of holding and implementing e-learning in the organization and then the advantages, disadvantages, and challenges of e-learning and the evaluation process.

Studies show a need for specific organizational infrastructure to implement educational courses in an online context in line with this objective. The lack of these infrastructures will create serious challenges for execution and implementation. According to Al Hujran & et al. (2013), the success of e-learning is significantly dependent on accurate knowledge of its key barriers. It requires the attention of managers and system designers because of organizations' lack of readiness to set up and use electronic education, and barriers existing in this way will cause the lack of using its capacities and failure of efforts. (shams & et al., 2019). Karami & Vazirpoor Keshmiri (2012) state that, opposite to what others think, completing the various stages of planning, economic feasibility, design, production, and delivery of an online training does not end. One of the essential stages of the e-learning system is the evaluation and getting feedback.

Fathi & Seif (2017) argue that when employees believe that e-learning does not require much effort and time and does not have many complexities, they are more inclined to use it. Furthermore, they state that if there is a balance between the job and the technology used by the employee, they should be given the necessary training in the use of educational technologies and understand the usefulness of using technology in teaching. Thus their desire to use electronic education will increase. At the same time, mental norms influence the use of e-learning. For example, when employees find that managers believe they need to use the online training and find it helpful, they are more inclined to use it. Nasirinian et al. (2018) Presented an evaluation model of the e-learning system, which includes: technical infrastructure and support, educational content, training methodologies, assessment, and human resources management. As well as these dimensions, supporting by managers, strengthening the learning culture, increasing the employees' motivation through developing equal educational opportunities and their profession path can be considered for determining the educational strategic plans, more accurate needs assessment based on continuous changes in banking and development of e-learning. They state that if the individual differences of learners in designing training courses are noticed, the learning speed will increase, and the training goals will be achieved in the best way. On the other hand, learners' motivations and organizational position should be considered in choosing educational methods, and learners' interactions and feedback should be used to improve the quality of courses.

Esmaieilpour, Gerami, and Pour Ghaznavi (2016) state that information and communication technology undoubtedly change learning environments, but the idea that these changes are always successful is very naive. Therefore, to prevent failure in using e-learning and create opportunities for its success, the educational managers and decision-makers must identify the critical success factors in designing and implementing this method and adopt the necessary strategies. Assessing the learners' satisfaction with e-learning is another issue that researchers have considered. A review of the research background shows that learners 'satisfaction is one of the critical and effective variables in motivation and attachment to the educational environment, and paying attention to needs and continuously measuring their satisfaction also increases

learners' satisfaction. Learner satisfaction is one of the significant signs of continuing electronic learning. When they are satisfied with the e-learning process, they will be more willing to continue participating in it. On this topic, Gholami & Norouzi (2017) state that satisfaction with electronic courses is more than with face-to-face courses and also among the three dimensions of satisfaction with training (content, method of presentation and feedback), satisfaction with course content, and electronic course feedback is more than physical education courses in the National Iranian Oil Company. The results of Khorasani & Doosti's (2011) research report that quality and learning methods, type of technology, the content of electronic courses, and instructor have the highest correlation with learners' satisfaction.

Alavi & Shariati (2010) state that although the surveyed employees were significantly satisfied with the electronic courses, their satisfaction rate with the content of the training courses is relatively less than other components. Therefore, it is essential to improve the quality of the content of these courses. Ershadi & et al. (2019) have conducted a study to design a model for assessing employee satisfaction with the e-learning management system. They concluded that users are not able to interact with web pages. As mentioned earlier, e-learning has many benefits for individuals and organizations. Using this learning method, employees can access educational content through various media (computer or mobile).

Nevertheless, on the other hand, this method of learning is cost-effective and reduces time and costs, but employees receive more support during training courses (Ibrahim, 2020). However, the e-learning system launched in our country faces many challenges and problems. Reviewing the research conducted in the field of e-learning in the Iranian organizations, the challenges in this field are in the organizational dimension, pedagogy, technology and support, and key stakeholders, which are discussed in detail in each dimension:

1. Challenges related to critical stakeholders: Numerous causes in organizations can lead to significant challenges in an e-learning system. These include the competencies needed by key stakeholders. Today, many believe that human resources are the essential input to the education system. Therefore, managers, educators, learners, content designers, and users should be aware of the concepts and principles of e-learning. Studies have shown that the weakness of communities and organizations in having specialized human resources in technology and the teaching-learning process is one of the obstacles ahead of its application in an organization (Shams & et al., 2019).

The success and development of e-learning require its administrators to have the necessary professional competencies and abilities in design, deployment, implementation, and development, and the mere use of physical resources and technical equipment cannot achieve the desired goals (Ramezani Ardi et al., 2019). The lack of familiarity of policymakers and educational planners with these issues can impose high costs on organizations. Some of these problems lead to the non-participation of learners in these courses and entail enormous costs for organizations (Karami, 2012). The more abilities and competencies specialists have, the more they can have an acceptable performance (Ramezani Ardi & et al., 2019).

2. Organizational Challenges: Another factor that can cause challenges in the electronic teaching-learning process is organizational challenges. Rules and regulations are among the organizational factors that, if not fully tackled, can cause significant challenges in an electronic context. Lack of administrative laws in the field of accreditation (Kharazi & Esfandyari Moghadam, 2010), intellectual property issues (Gholipour & et al., 2016; Kharazi & Esfandyari Moghadam, 2010), and or the existence of weak laws (Hadadian, 2011) are other related subjects among them. (Allami & et al, 2019; Gholipour & et al, 2016). One of the significant challenges related to this section, which has been considered in most studies, is the insufficient attention of

managers, policymakers and administrators involved in implementing electronic courses towards training and empowering instructors in the e-learning system. As a result, many organizations today use e-learning to grow and develop their employees. However, sometimes lack considering an appropriate investment, and fail to provide appropriate training to get acquainted with the required skills. As a result, this type of learning fails (Allami & et al., 2019; Gholipour & et al., 2016).

Teaching spaces are usually crowded, and instructors under training or who have not received the necessary training cannot overcome this challenge alone (Esmaeilpour & et al., 2016). In the meantime, the senior and active managers in implementing training courses must take the necessary measures regarding holding empowerment courses for instructors and learners. Other challenges in this sector can be the insufficient support of managers and policymakers of the organization of electronic learning, negative attitude toward electronic learning, and non-continuity of electronic systems by organizational decision-makers.

On this subject, it can be acknowledged that one of the most critical factors in the development of e-learning is culture building and providing information on its achievements and challenges. E-learning does not have a long life. Its achievements are not yet touchable to everyone, so many people are unfamiliar with it. Many others who are more or less familiar with it are looking at it sceptically. People in the community usually do not value electronic learning. They consider e-learners to only look for a degree and not learning (Tarin, 2016). If the electronics goals are well defined for people in the community, it can be argued that resistance to it is reduced, and people are more willing to use the courses.

One of the main challenges related to this section is insufficient attention to the issue of culture-building regarding the holding of training courses in the electronic context, the insufficient willingness of learners to participate in training courses, and insufficient introduction of the electronic system to familiarize learners with it. The last challenge in the organizational dimension of security mechanisms refers not to technological factors but the inadequacy of mechanisms to systematically deal with security threats, insufficient systematic and comprehensive approach to identifying areas of challenge in terms of security, and insufficient attention to the issue of e-learning safety by the mangers of the educational system, insufficient attention to assessing the readiness of the organization in order to accept, reject, implement and implement the e-learning in the organization.

3. Pedagogy Challenges: The pedagogy dimension refers to the influential factors in all stages of the education process, including needs analysis, planning, design, implementation, interaction, learner, instructor, content, and evaluation. Currently, the main problem in electronics is the lack of appropriate educational principles. Designers and educators often apply principles appropriate for traditional education systems (Doosti & et al., 2018); Policymakers and decision-makers pay more attention to computer specialists to design electronic programs, and educational pedagogues are neglected. In addition, educational planners are not familiar with the electronic teaching process. On the other hand, there are clear and sufficient plans, strategies, and policies for conducting educational courses electronically. Furthermore, all these issues point to a challenge in this area. Reducing the role and responsibility of educational designers and increasing the responsibilities of curriculum planners in training courses have caused many problems.

Shiri & Safiaghdam (2019) recommend that cooperation between educational designers and IT experts is essential. Another challenge in pedagogy is classroom management. If we ignore its requirements in e-learning, we will face many challenges due to its lack of physical presence. In addition, we see more challenges in Iranian organizations that are often not familiar enough with e-learning in this area. Among the challenges mentioned in the research which were studied

in this section are: Insufficient attention to the use of appropriate processes and procedures in order to conduct training courses in the electronic context, Insufficient attention to the components, factors and obligations of the e-learning system to achieve effective learning achievement, reduction of the rate of attention and focus in electronic as compared to face-to-face learning.

Another challenge that arises in the pedagogical dimension is related to learner and instructor interaction. Interaction is a critical element for success in e-learning and an essential factor in increasing the quality of learning (Ebrahimzadeh & Masoomifard, 2017). Based on the results of the research, the challenges related to the interaction process in Iranian organizations include; inadequate face-to-face contact between the learner and the instructor, insufficient interaction of learners with insufficient interaction with support service systems in organizations and little interaction between the instructor and the learner in the electronic context. The interaction between the teacher and the learner causes the learner's knowledge structure to form and participate in social activities. It can also be effective in motivating, encouraging the learner and helping/her or him/to understand and apply what he or she has learned. In addition, learners' interaction increases learners' communication skills and allows them to share knowledge. Monahan believes that learners' interaction with each other plays a vital role in the development of learning communities and causes the development of interpersonal skills and knowledge acquisition (Hejazi, 2019).

Instructor challenges are another challenge of pedagogy in organizations. Although educational conditions and facilities are factors affecting the learning process, without a doubt, human resources, especially instructors, are one of the most critical components of educational environments (Ghorbankhani & Salehi, 2017). A competent instructor in e-courses must have mastered other specialized skills and competencies and the characteristics of a lecturer in face-to-face courses. In addition, instructors of electronic courses must be ICT literate, have sufficient experience in the electronic context, and have sufficient qualifications and readiness to participate in this environment. In the research under consideration, insufficient attention to information and communication technology literacy in instructors, the insufficient experience of instructors in teaching electronically, insufficient attention of instructors to student-centred instead of instructor-oriented attitude, insufficient attention to the need to change course content according to learners 'needs, instructors' insufficient knowledge among the individual characteristics and differences of learners are some of the challenges of instructors in training courses in the electronic context in the organization.

Heidari & et al., 2013 Learners, like instructors, have challenges in the electronic context. Learners in any educational system have psychological characteristics, attitudes, abilities and skills that contribute to their activity in the learning process. However, in the electronic approach, besides having the minimum features and abilities necessary for learning and success, they also need to have specific skills, abilities and characteristics to enter the course (Heidari & et al., 2013). In other words, some challenges for learners are; Inadequate learners' technical, pedagogical, communication skills and ICT literacy, concerns about using technology, and lack of motivation to participate in an e-learning environment.

Another challenge of e-learning is multimedia content. By the way, it should be noted that before conducting training courses, the training designer should produce multimedia content. Proper use of electronic content with dimensions such as; voice, image, animation, and film can significantly increase learners' learning and memory (Salehi & et al., 2016). However, the time-consuming production of electronic multimedia content; Its cost; inadequate quality of educational content; Insufficient relevance of the presented content to the abilities and skills of the learners; the obsolescence of the presented content, regardless of the changes of the present age, is one of the challenges identified in the researches in this field in Iranian organizations.

The last challenge in the field of pedagogy is the challenge of evaluating the e-learning system. Evaluation is an integral part of any educational system that can represent strengths and weaknesses (Abbasikasani, 2018). What was observed in the evaluation challenges in Iranian organizations included; Lack of a suitable model for evaluating e-learning appropriate to the context of Iranian organizations, insufficient attention to evaluating the effectiveness of training courses in the organization, insufficient attention to the results of continuous evaluations of training courses and neglect of timely feedback to improve, insufficient attention to using diagnostic evaluation before beginning the education of the course on the electronic context,

4. Technology Challenges: One of the crucial parts of technology challenges in e-learning is hardware and software challenges. Physical facilities, educational equipment, and essential educational software are among the primary priorities and requirements for forming electronic classrooms; the absence or insufficient quality can cause significant challenges in holding courses. According to studies conducted in related research, insufficient physical facilities and educational equipment for electronic learning, lack of updated hardware equipment, software limitations in the ability of all users to access the web pages, diversity in the existence of e-learning systems, weakness in learning management system are some of the fundamental challenges in this area.

Another issue that Iranian organizations face in the technology dimension is the challenges related to infrastructure. Low-speed internet is one of the main problems in the whole country, and organizations are no exception. The lack of necessary and sufficient infrastructure, insufficient access to the Internet and low speed interrupted access to electronic teaching-learning systems, limited telecommunication infrastructure, and problems related to bandwidth are other challenges in this area.

Finally, the latest challenge in the technology dimension is the challenge of applying transformational technologies in electronic learning. Transformational technologies in education provide various features for instructors that facilitate the learning process and encourage learners to be more active (Aleksic-Maslac, 2017). However, unfortunately, despite all the advantages of evolving technologies in electronics, they often fail due to poor and improper design (Pettey & van der Meulen, 2012). In this area, researchers have pointed out that two methods of gamification and cloud computing in organizations have created some challenges. These include; lack of success criteria in gamification, lack of motivation in gamification, insufficient understanding of players' needs, insufficient confrontation of employees with meaningful choices, lack of structure for modelling appropriate behavioural goals in gaming, and lack of proper tools in gamification.

5. Support Challenges: The support dimension of online support and the resources needed to foster learning environments is significant (Abbasi Kasani, 2018). Support in the research under consideration includes educational-administrative and financial dimensions. Weak support in providing services and executive facilities in e-learning, weak support for holding training on the electronic platform, insufficient attention to the technical support of learners on the electronic platform, insufficient financial resources for holding training courses on the electronic platform, high costs of training for organizations with little experience in this field, insufficient funding for the production of e-content are among the challenges related to this sector.

Suggestions

Considering that in most of the research, the level of satisfaction with the e-content was at an undesirable level, it is necessary to conduct an educational needs assessment and then produce the content based on learner needs and goals of the organization. Furthermore, it is essential to pay attention to the instructor's facilitator role in providing e-learning and consider the learners

as interactive partners. In this regard, paying attention to the characteristics and competencies of instructors, the instructor's course plan improves the quality of training courses in the online context. In this regard, the evaluation of the instructor's mastery and dominancy over the course subject and the scientific content should be considered. One of the most critical factors affecting the quality of electronic courses is the subject of interaction.

Electronic chat rooms, videoconferencing, and anything that helps people discuss the courses they have taken can increase the motivation to re-attend these courses and reduce the limitations and barriers to online communication. Furthermore, evaluation of the effectiveness of courses using scientific and systematic approaches such as; Satisfaction-value network receives feedback from key stakeholders of the electronic system, increases satisfaction and reduces the costs of the mentioned courses.

Since motivation is the most critical condition for learning, educators should provide a context in which learners are motivated by engaging in learning activities. Attitude towards e-learning is another factor influencing the success of electronic learning. Technical support, motivation and knowledge of e-learning can change learners' attitudes towards this method. In other words, the mentioned factors create a positive attitude in learners, and as a result, their adaptation to e-learning for in-service training is more easily done. All stakeholders' professional competencies and capabilities are essential in successfully implementing e-learning.

In other words, instructors in e-environments need to have skills in communication and interaction, principles of the teaching-learning process, management, and use of technology; electronic managers in organizations must also have competencies and capabilities in the field of educational design electronically. Moreover, easy access to systems, hardware, and software plays a vital role in the effectiveness of e-learning in organizations. Therefore, it seems necessary to have the necessary standards for the electronic educational system. Therefore, in this regard, it is suggested to evaluate the learning management system based on standards such as; WebQuall should be on the agenda to reduce the gap between the current and the desired situation and thus increase learner satisfaction. Finally, the appropriate technology infrastructure in the organization, the availability of affordable access to technologies, and the availability of learner access to applications can effectively improve the quality of this method of education.

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