
**¹Enhancing organizational learning with e-learning capabilities: A
systematic literature review**

Nadire Cavus*, Omar Hussain**, Adaeze Ubah**, Adam Muhammad Isa**,
Victor Oluwasusi**

*Computer Information Systems Research and Technology Centre, Near East University, 99138
Nicosia, Cyprus**

*Department of Computer Information Systems, Near East University, Mersin 10, Turkey***

Received: March 4, 2023; Revised: Dec 14, 2023; Accepted: April 5, 2024

Abstract: Corporate e-learning refers to the use of online learning technologies to provide professional training to employees. E-learning offers many benefits for organizations, including cost savings, flexibility, and provide consistent, up-to-date training to a diverse workforce. Implementing corporate e-learning programs can improve corporate learning, but also presents challenges such as developing effective content, engaging learners, and measuring the impact of the training. This study was conducted as a systematic literature review to find the missing gaps in corporate e-learning research by collecting past research articles from 4 scientific research databases in the last decade. In total 7,285 records were collected across the 4 databases which went through the PRISMA and rigorous process of inclusion and exclusion, and selection processes. In conclusion, 21 research articles were chosen for inclusion in the final review. This SLR found that e-learning has become increasingly popular in corporate learning over the past 15 years despite challenges in implementation, also offering benefits such as cost reduction, ease of access, comfort, learning ability, and speed, which improves productivity and efficiency in organization. Hopefully, the results of this SLR will benefit researchers who seek insight in the field of corporate e-learning and assist organizations to make informed decisions in deploying or improving e-learning in their establishments.

Keywords: *Organizational learning, e-learning, learning environments, LMS, corporate training.*

Introduction

Organizations go through dramatic changes as a result of the intense global rivalry in the commercial world today (Kosice and Conkova, 2013). Businesses need to be adept at managing changes, developing new products, and constantly improving their processes to stay ahead of competition. There is a growing emphasis on the importance of having employees with knowledge, skills, and abilities that are aligned with the business goals and objectives of the company (Kebun et al., 2019). Organizational learning goes beyond formal and informal education and training. It is a learning process inside organisations that emphasises information flow between levels and involves the interaction of individual and collective (group, organisational, and inter-organizational) levels of analysis to achieve organisational goals

¹ <https://doi.org/10.51659/josi.23.189>

(Giannakos et al., 2022). E-learning was initially introduced in a corporate setting in October 1999 at a CBT Systems workshop in Los Angeles (E-Soft Development, 2016) since then, it has become a common term in education due to technological advancements in the field (Soroichinsky et al., 2020). There is no doubt that one of the most effective responses to the rising demand for education is e-learning, which can be regarded as the process of teaching and learning that takes place online through the use of network technology with the goals of fostering knowledge and abilities that are transferable for the workplace, which is attained by helping individuals accomplish their learning objectives, or by developing knowledge and skills that are directly relevant to the performance of the organisation (Evra et al., 2022). The concept known as “e-learning” has acquired an ever-increasing amount of significance within the realms of both academic and professional education, and it may currently be considered one of the most significant developments and applications of information technology (Al-Gahtani, 2016). Workplace learning can be summed up as the methods, procedures, and tasks that employees use to acquire everything from fundamental abilities to sophisticated managerial techniques that are immediately applicable to their jobs, duties, and responsibilities (Čevra et al., 2022). E-learning is aimed at achieving learning objectives or developing knowledge and skills applicable to organizational performance. Organizational learning is important because it connects to the process of creating value from an organization's intangible assets. It contains concepts from a array of fields, such as organizational behaviour, human resource management, artificial intelligence, and information technology (Giannakos et al., 2019).

Conversely, e-learning offers learners flexibility over their learning experience enabling them to determine when and where they complete their training activities. This flexibility can both be beneficial to learners and employers. For employers, e-learning offer ways to train employees on new skills, development and also save time and money by eliminating the need for travel to their respective training programs. E-learning provides a cost-efficient means for implementing training to a large number of employees (Conkova, 2013). E-learning programs commonly involve using learning management systems (LMS) Soroichinsky et al. (2020), which are software platforms that aid organizations to create, manage, and deliver online training and materials (Cavus, Omonayajo and Mutizwa, 2022). LMSs generally offer a selection of features, such as course creation and authoring tools, online evaluations, and tracking and reporting capabilities, to aid the delivery of effective e-learning programs. The key technical elements of corporate e-learning are the learning content. Learning content can contain variety of formats, such as videos Legowo et al. (2019), audio recordings, simulations, and interactive activities. Learning contents are typically created using authoring tools, which empower instructional designers and subject matter experts to produce and organize the content in a way that is engaging and effective for learners. Another valuable technical aspect of corporate e-learning is the delivery platform. E-learning programs are usually delivered via web browsers Čevra et al. (2022) or mobile applications, which provide learners with access to the learning content and other resources from any device with internet connectivity. Delivery platforms may also provide supplementary features, which may include communication tools, forums, and collaboration tools, to accelerate interaction and engagement between learners and instructors (Chen and Tseng, 2012). In addition to the learning content and delivery platform, corporate e-learning programs also necessitate technical infrastructure in order to support the delivery and management of the training (Giannakos et al., 2019). Overall, corporate e-learning comprises a variety of technical components and technologies, including LMS, learning content, delivery platforms, and technical infrastructure, these elements work collectively to enable organizations to provide effective and engaging online training to their employees which can also be implemented in the LMS (Gavril et al., 2017).

As a result of recent social and technical advancements, businesses are making more investments in their workers' education and training (Kyndt and Baert 2013; Hurtz and Williams 2009). Human Resource Development (HRD) departments continue to allocate a significant amount of their expenses to formal, instructor-led training, despite the rise of informal learning in the workplace and other contexts. In recent years, an abundance of digital communication and information technologies has evolved, resulting in variances in how learners and business agents use these resources (Beinicke and Kyndt, 2019). The requirements facilitate the development of an online service that works anywhere (at university, at home, at work, among other environments), with a wide range of options for use. E-learning is quickly becoming a vital part of education worldwide and is widely adopted by educational institutions due to its numerous benefits, including easy access to study materials, timely group discussions, and streamlined team collaboration. Employees must have access to up-to-date knowledge, and implementing e-learning provides a real-world setting that helps the student to engage in a variety of activities like timely group discussion, easier teamwork, and simple access to written materials (Murugappan and Ramesh, 2022).

The purpose of this study is to examine and synthesize the current research on corporate e-learning, identify any gaps in the literature, explore the impact, current state of research, benefits, and challenges of implementing e-learning in organizations, and use this information to inform future researchers and answer the research questions outlined below:

- In what ways can e-learning be used to improve corporate training?
- What is the current status of research in the field of corporate learning and e-learning?
- What are the technical challenges of deploying e-learning platforms in organizations?
- What are the advantages of implementing E-learning in organizations for the training of personnel?

Methodology

Research Design

To address the research questions of the study, the researchers opted to conduct a systematic literature review (SLR) of existing literature in the field of e-learning in corporate learning. SLR is a secondary kind of research that employs the use of predetermined procedures to seek, assess, and analyze all data pertinent to an investigation. This decision was made by the standard procedure that is followed in the area of information systems and software engineering as outlined by (Kitchenham and Charters, 2007). This was done to ensure that the results could be replicated as well as to reduce the possibility of bias on the part of the researchers.

Search Strategy

Certain protocols were adhered to for this systematic literature review to be of the highest quality. Using a broad set of keywords such as (“organizational learning” OR “organizational training”) AND (“e-learning” OR “online education”) AND (“online platform” OR “e-learning system” OR “learning management system” OR “LMS”), a search of peer-reviewed journals articles from the last ten years up to October 2022 was conducted. (Articles in languages other than English, not open access, Articles published before the last ten years, and not research articles were excluded from the search. Since there has been a lot of development in the area of e-learning in the recent decade, publications from 2012 forward were chosen to accommodate high-quality research in the last decade. The researchers searched through multiple different databases, namely Web of Science, Scopus, Science Direct, and EBSCO.

Inclusion and Exclusion Criteria

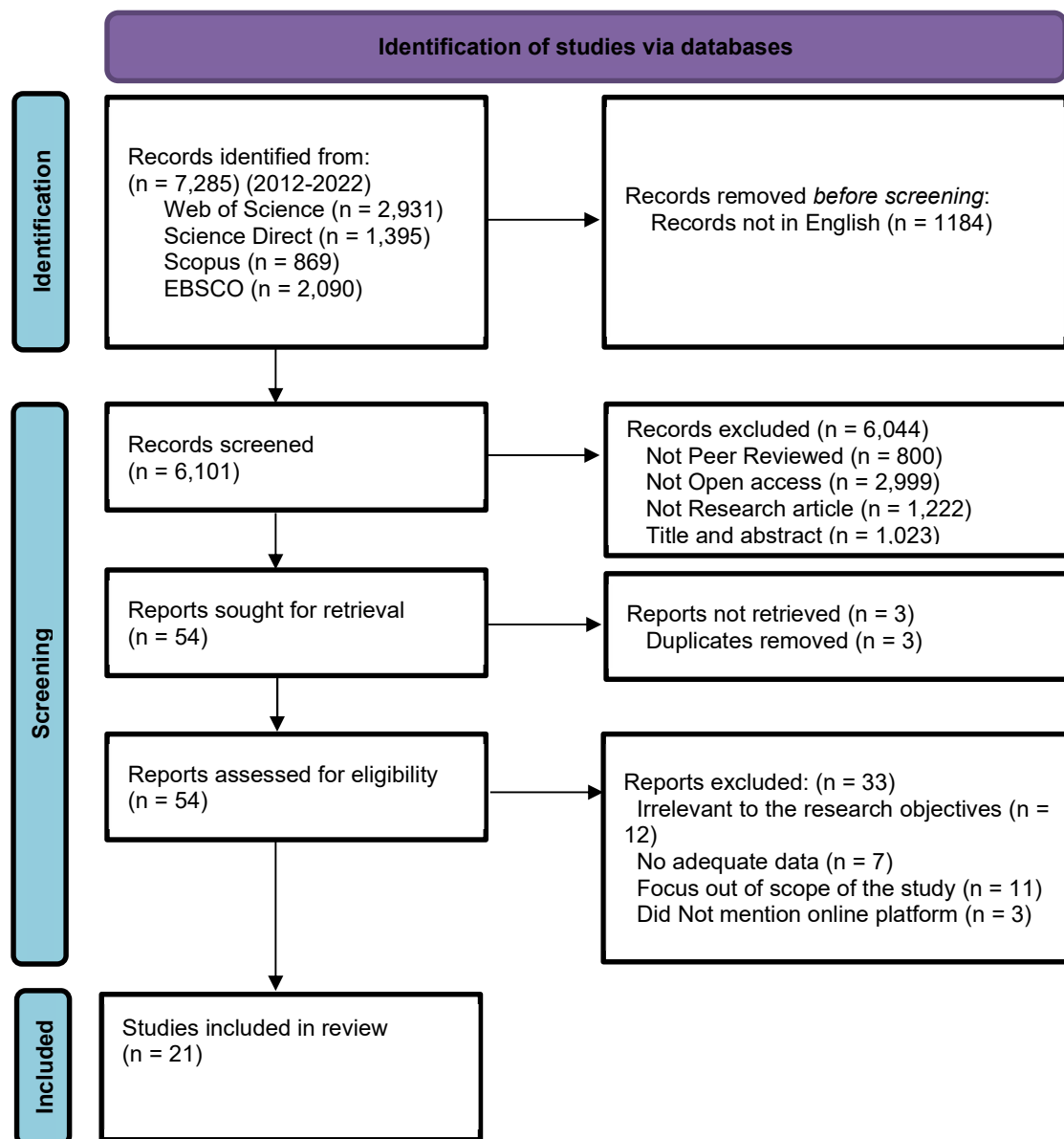
While the whole selection process will undoubtedly vary based on the databases under consideration, all the selection criteria included in this study were incorporated appropriately. It is important to establish specific guidelines for including and excluding research during the selection process because this will impact the overall quality of the literature review. Table 1, which can be seen below, provides a summary of the criteria that were utilized to determine

which studies should be included and which should not be included based on the results of the search process. These criteria were used to effectively complete the selection process.

Table 1. Inclusion and exclusion criteria of the study

Inclusion	Exclusion
Available within the 3 databases	Duplicates between the databases
Only Articles published in English	Articles published in other languages other than English
Full text accessible online (Open access)	Full text not accessible (Not open access)
Peer-reviewed journal articles	Not peer-reviewed journal articles
Articles published in the last decade	Articles published before the last decade
Research Articles	Not research articles

Fig 1. PRISMA flow diagram of the study



Selection Processes

From the first database search through to the final review process, inclusion and exclusion criteria, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines represented the whole selection process. The PRISMA Fig 1 criteria were established to facilitate the selection process from different databases where the acquired results were extensive and needed to be distilled to the barest essentials based on features that would provide the researchers with high-quality research journal articles. After the search was conducted within the past decade and considering only papers published in English, a total of 7,285 articles were retrieved across all 4 databases namely (Web of Science, Science Direct, Scopus and EBSCO). Based on the criteria listed, the researchers were able to get the following numbers from their first search in each database: Web of Science (n = 2,931), Science Direct (n = 1,395), Scopus (n = 869), EBSCO (n = 2,090). After screening out articles that weren't peer-reviewed journal articles, weren't open access, weren't research articles, and screening the titles and abstract, the researchers were left with 54 articles. These 54 articles then went through the full-text assessment phase, which left them with 21 articles to include in this systematic literature review.

Quality Assessment

In this systematic literature review, researchers oversaw the planned review methods to ensure that the included papers were of high quality. The researchers of this systematic review developed it on a foundation of careful time and resource management. Each criterion and procedure for selection was used with an eye on the study's stated goals and objectives. Automated tools like Mendeley and Zotero were used to assure accuracy in removing duplicates, full-text assessment, sorting out citations and keeping track of the quality of the sorted articles included in the final phase of this systematic literature review.

Data Extraction

One of the most crucial and pertinent parts of this systematic literature review was the process of data extraction, which should fall within the purview of the study's subject. Before the researchers could begin the extraction procedure, each downloaded article was meticulously inspected and subjected to a time-consuming process of full-text evaluation to ensure it met the quality appraisal standards. Table 2 below details the specifics of how the data extraction for this study was carried out to streamline the procedure. After carefully reading, summarizing, paraphrasing, and synthesizing the data found in all of the primary sources, also setup up an Excel spreadsheet detailing every data collected that can be accessed via Google Drive along with other data collected for further assessment in the completion of this research.

Table 2. Data extraction

Data Item	Description
S/No	Serial number of the included study
Reference	Reference of the included study
Country	Country of publication of the study
Aim of Research	The aim of the included study
Improvement	Ways e-learning can be used to improve corporate training
Status	The state of research in the area of corporate training and e-learning
Challenges	Technical challenges of deploying e-learning platforms in organizations
Advantages	Advantages of implementing e-learning in organizations for the training of personnel
Technologies	Various e-learning technologies utilized in the study
Research type	The type of research utilized by the researcher/s
Key findings	Key findings of the included study
Recommendation	Recommendations by the researcher/s of the included study

Source: The entire data collected in this SLR can be accessed through the following google doc link

https://docs.google.com/spreadsheets/d/1s4L9fjVtm_gr1IctwdMBkx7siS5mxIuO/edit?usp=s haring&ouid=109168019301826104831&rtpof=true&sd=true

Results

Improving e-learning in corporate training

E-learning has become the de facto standard for imparting knowledge in the business sector, across the board from the largest corporations to the smallest start-ups (Čevra et al., 2022). The major worries of e-learning adaption in businesses are not simply execution, but also the quality of the learning experience. According to the findings of this SLR, corporate e-learning has seen quite a spike in attention in the past decade (Conkova, 2013), however, most of the researchers (Al-Gahtani, 2016; Anton and Shikov, 2018; Čevra et al., 2022; Chen and Tseng, 2012; Conkova, 2013; Gavril et al., 2017; Giannakos et al., 2019, 2022; Kimiloglu et al., 2017; Lee and Kim, 2015; Li and Tsai, 2020; Lin et al., 2018; Mehrolia et al., 2021; Wan et al., 2014; Wang et al., 2021) in this literature review arguably found out that some areas need some tuning up to effectively improve the quality of disseminating knowledge in the workplace. Gavril et al. (2017) suggested the incorporation of video-based learning into e-learning courses to provide learners with access to a reality to which they had previously been denied access. Video-based learning by the specificity level can impart and aid in the process of assimilating information most quickly and efficiently (Gavril et al., 2017). Due to the enormous demand for e-learning, it must accommodate a wide range of students whom each prefer distinct approaches to education. As a result, online courses should be developed as adaptive learning systems. Research and theory emphasize the necessity for technology enhanced organizational learning (TEOL) programs to include students' social, cultural, and institutional surroundings (Giannakos et al., 2019). Developing a strategy for TEOL requires considering the goals of both the learner and the institution, as well as the role of social networking. To do this, it is necessary to identify the desired objectives and the technologies that can support them, and then incorporate self-directed and socially driven learning practices within the organization (Giannakos et al., 2019). Some online learning systems simply provide text-based course materials, which might make students bored and disinterested in the topic and so less likely to learn anything from it. More resources on e-learning systems that use multimedia elements have become accessible as this technology has advanced. Media like text, pictures, audio, and video are all part of the instructional resources that these systems give to students. The passive and disorganized nature of certain multimedia systems' presentation of educational information is a major factor in their failure in such setups, students have little influence over the organization and acquisition of information (Conkova, 2013). However, Li and Kim (2015) pointed out that the use of irrelevant animations in training systems may distract learners and lead to poor learning outcomes. It is important to ensure that the content of the training system is relevant to the duties of the users. Some e-learning tools such as multimedia (Conkova, 2013; Gavril et al., 2017; Lee and Kim, 2015) contents, iSpring Suit which is a PowerPoint-based publishing toolkit developed by iSpring Solutions that enables users to build interactive learning materials such as slide-based courses, quizzes, dialogue simulations, screencasts, and video lectures which are presented in HTML5 format, Moodle Learning Management System (LMS) which is also an open-source, PHP-based learning management system published under the GNU General Public License. In schools, colleges, businesses, and other sectors, Moodle is used for blended learning, remote education, flipped classrooms, and other online learning initiatives Sorochinsky et al. (2020), Social Learning Technologies and Virtual learning

technologies Giannakos et al. (2019), Enterprise Resource Planning (ERP) e-learning platform Li and Tsai (2020) were also reported to have effectiveness in delivering quality training contents to staff in corporate bodies.

The current status of research in the field of corporate learning and e-learning

E-learning enables huge numbers of learners to be involved in professional training programs, and also emerged as the principal method for narrowing the knowledge gap that exists between different groups of people (Gavril et al., 2017). Our findings also indicated that few studies described the current level of research in the fields of corporate learning and e-learning. However, Gavril et al. (2017), stated that the adoption of corporate e-learning has increased by 900% over the last 15 years, additionally, the researchers presented Multimedia (video-based) as one of the popular technological learning tools that seem to be adopted by some corporate bodies to improve their e-learning capabilities. Also, Beinecke and Kyndt, (2020) recorded the growing significance of information transfer through e-learning settings, businesses are switching from traditional learning to online learning for the training of staff. However, Giannakos et al., (2019), developed a framework for studying computer-supported collaborative learning (CSCL) that combines individual, organizational, and collaborative learning. Furthermore, e-learning is quickly becoming the technique of choice for enterprises across all industries according to Kosice and Conkova (2013). Furthermore, our research found out that the emergence of the Covid-19 pandemic compelled numerous corporations to adopt e-learning in disseminating learning across their workplace. A similar result was highlighted by Wang et al. (2021) in their study. Businesses have broadly adopted technological advancements in information processing to aid staffs overcome challenges during training and education. E-learning exemplifies this approach, as it utilizes web technology to enhance the traditional teaching and learning processes (Beinicke and Kyndt, 2019). E-learning can serve as a convenient and cost-effective method of providing education and training to employees, giving them access to materials remotely and progress at their own pace (Lee and Kim, 2015). E-learning can also be more effective, needing less time and effort than traditional face-to-face methods. Organizational development has advanced beyond the capacity of conventional training to keep pace. Addressing the issues faced by modern corporations, technological advancements have an extensive implication for the training and education of staff (Kebun et al., 2019).

The technical challenges of deploying e-learning platforms in organizations

Most of the studies (Al-Gahtani, 2016; Anton and Shikov, 2018; Beinicke and Kyndt, 2020; Čevra et al., 2022; Giannakos et al., 2022; Hsia et al., 2014; Murugappan and Ramesh, 2022 and Conkova, 2013; Wan et al., 2012; Wang et al., 2021) stated the drawback and challenges encountered while implementing and using the e-learning system in an organization which are highlighted accordingly. The survey conducted by Anton and Shikov (2018), pointed out that although organizations provide e-learning for staff development, some staff are not interested in it, and this has led to a low acceptance and adaptation and is a major concern in the deployment of e-learning. Also, Wan et al. (2012) outlined that in online training, most participants seldom or never meet face-to-face. A collaborative group ethic may contribute to the development of a work setting that encourages contact among coworkers. People who are accustomed to requesting and getting assistance through others are inclined to do similarly throughout training. Hsia et al. (2014) highlighted that depending on criteria such as age, gender, computer experience, computer phobia, subjective norms, PIIT, and other factors, different users may have varying levels of acceptance for e-learning systems. The culture and the availability of technical support within an organization can impact the successful implementation of e-learning (Čevra et al., 2022). Also, the researchers found out that using effective e-learning resources is a complex endeavour that requires the right set of skills by the staff involved, according to Sorochinsky et al. (2020), e-learning is quickly gaining popularity

in Russia, even though there is still a significant gap between Russia and the countries that are leaders in this field. Further, they emphasize that developing e-learning resources is a complex endeavour that necessitates proper training and can only be effective if it accurately reflects the unique characteristics of e-learning and if educators are prepared to put them into practice according to their findings.

The advantages of implementing e-learning in organizations for the training of personnel

The implementation of e-learning technologies into organizations has been shown to have several advantages, according to our findings, the researchers found that e-learning is considered among the best methods of education/training that allows flexible training schedules, reduces study expenses, and organization expenses (Chen and Tseng, 2012; Li and Tsai, 2020; Wang et al., 2021). Also, findings showed that E-learning increases learners' learning ability and speed, which also impacts the productivity and efficiency of the organization that uses the technologies (Chen and Tseng, 2012; Giannakos et al., 2019). With our ever-changing world, employees must have access to up-to-date knowledge, implementing e-learning provides a real-world setting that helps the student to engage in a variety of activities like timely group discussion, easier teamwork, and simple access to written materials (Murugappan and Ramesh, 2022). E-learning is nearly often incorporated into the frameworks that support corporate training programs, the technologies provide substantial benefits to businesses, including a reduction in the expense of traditional in-person training and the guarantee that educational resources may be accessed from nearly any location in the world (Li & Tsai, 2020). Both of these factors contribute to increased accessibility. Learning takes place in the manner that is most comfortable for each worker at the organization (Gavril et al., 2017). Some people are only able to learn during their active hours in this situation, access to the training resources is granted to the employee via a functional computer or laptop. From this device, the staff can utilize the full capability of the e-learning platform at any time that is convenient for them (Anton and Shikov, 2018).

Discussion

The Internet and cutting-edge technologies are revolutionizing the educational system, making online courses a practical alternative to in-person lectures. Businesses, government agencies, and academic institutions must now learn about e-learning to decide whether or not to embrace e-learning methods in their particular contexts. Enhancement is required in e-learning in the corporate world because most of the studies reviewed stated that e-learning has attracted a lot of attention in the last decade and a lot of organizations have indicated an interest in corporate training of late, especially during the COVID-19 pandemic. The majority of the findings outlined that some online learning platforms only offer text-based course materials (Al-Gahtani, 2016; Anton and Shikov, 2018; Evra et al., 2022; Chen and Tseng, 2012; Conkova, 2013) and businesses must take social networking, institutional aims, and learner objectives into account while developing a technology-enhanced organizational learning strategy (TOEL) (Giannakos et al., 2019). E-learning allows for a more adaptable training schedule by giving the trainee greater freedom to choose his own pace and make his own choices whenever and wherever it is most convenient for him. Employers that adopt the usage of e-learning may find that their workers have a more positive outlook on training and development, that they spend less time away from the office, and that they save money on transportation expenses (Conkova, 2013). Additionally, businesses across all industries are fast adopting e-learning as their preferred method (Conkova and Kosice, 2013). It has been demonstrated that there are several benefits to integrating e-learning tools into companies because it allows for more adjustable learning and training schedules and minimizes costs for the company, e-learning is frequently

acknowledged as one of the most successful kinds of training and learning approach (Anton and Shikov, 2018; Chen and Tseng, 2012; Li and Tsai, 2020; Wang et al., 2021).

People who are unable to keep up with the pace of online learning are severely hampered by the fact that e-learning is only offered online and does not allow for face-to-face interaction between participants (Al-Gahtani, 2016; Anton and Shikov, 2018; Beinicke and Kyndt, 2020; Čevra et al., 2022; Giannakos et al., 2022; Hsia et al., 2014; Murugappan and Ramesh, 2022 and Conkova, 2013; Wan et al., 2012; Wang et al., 2021) even the organizational culture may have an impact on how e-learning is implemented (Shikov A., 2018). Al-Gahtani (2016) emphasized how various users may have variable levels of acceptability for e-learning depending on parameters including age, gender, computer expertise, computer phobia, subjective norms, and other aspects. Additionally, the deployment of e-learning in organizations is hampered by a lack of technical assistance (Čevra et al., 2022). Additionally, the researchers found out that utilizing effective e-learning materials is a challenging endeavour that calls for the staff members engaged to possess the appropriate skill set. Corporate training according to Sorochinsky et al. (2020), which is an essential component of corporate education, may serve as one of the instruments that are used in the process of getting educators ready for the deployment of e-learning. One potential way to view corporate training is as a subset of corporate education, as it can help improve the professional skills of employees. This type of education is focused specifically on providing training to enhance employees' abilities within the organization. Training programs for employees of a company imply that such workers are capable of achieving specific levels of competence in a certain profession (in this case, e-learning). They are considered to be performers who acquire knowledge and skills and can convey and spread information of this kind.

The results of this systematic literature review revealed a wide range of implications. Firstly, the primary step toward the effective implementation of e-learning in a corporate setting is ensuring that all staff members, including instructors and learners, possess the necessary capacities to participate in such a program, which means before implementation the necessary step is to make sure that they acquire the right skills to make the transition from the traditional form of learning to that of e-learning sustainable in the organization. Secondly, easy-to-use, helpful, and sociable e-learning tools result in more efficient e-learning adoption. Organizations should include these platform features and support them with content. This should improve learning outcomes and create networking possibilities for workers, which are misplaced when firms transition from a traditional form of training to e-learning. Thirdly cost of implementation shouldn't be an issue since corporate e-learning lowers expenses, increases access to learning in corporate environments and gives staff more time to balance training with other obligations.

There are several limitations in this systematic literature review which are outlined accordingly. First, the researchers had to make some methodological decisions which were strictly abided by to avoid any form of biased judgments in selecting the right research articles to be included in this SLR, which included and was not limited to the 4 databases mentioned. Secondly, this SLR was strictly based on the research papers that passed the inclusion criteria of the researchers only. Also, only articles written in English were considered and all other papers in other languages were excluded. Likewise, only peer-reviewed journal articles that are open-access and full-text accessible were included in this SLR. Finally, the type of research included

was mostly research articles and literature reviews future research should include other forms of research like book chapters, editorials and conference papers/proceedings, expand the reach to other databases and as well include papers written in other languages. The findings of this SLR will serve as a guide to organizations, staff and instructors to make informed decisions in adopting e-learning.

Conclusion and future works

This SLR reviewed past research articles on corporate e-learning in organizations within the past decade and systematically reviewed them based on the research questions compiled by the researchers to answer as well as find the missing gaps in the literature. The goal of this research is to investigate the impact, state of research, advantages, and difficulties of deploying e-learning in organizations. E-learning can be an effective way to provide training and professional development to employees. E-learning can offer a more flexible and cost-effective alternative to traditional face-to-face training and can facilitate the delivery of steady and up-to-date content to a varied workforce. E-learning can also grant opportunities for learners to participate in interactive and experiential learning, which can improve the impact of the training. The success of e-learning programs is induced by various factors, such as the quality of the learning materials, the commitment of students, and the support provided by instructors and other key individuals. Successful e-learning programs require thoughtfully designed and engaging content, as well as mechanisms for supporting learners and facilitating interaction and collaboration. Organizations that effectively tackle these factors are more likely to accomplish positive outcomes from their e-learning programs. However, the impact of e-learning on employee performance and organizational outcomes can be difficult to measure and quantify. Although some studies have found that e-learning can lead to advances in employee knowledge and skills, the impact of e-learning on more dense and broader organizational outcomes, such as productivity and innovation, remain less thoroughly understood. This underscores the need for organizations to watchfully design and implement e-learning programs and to use a range of assessment and measurement approaches to assess the impact of the training. Overall, the findings of this research can offer valuable insights and direction for organizations that are planning to implement e-learning programs, or are looking to improve the effectiveness of their existing e-learning initiatives, also for researchers it will serve as a guideline for further study in the field of corporate learning and e-learning.

References

- Al-Gahtani, S.S. (2016). Empirical investigation of e-learning acceptance and assimilation: A structural equation model. *Applied Computing and Informatics*, 12(1), 27-50. <https://doi.org/10.1016/j.aci.2014.09.001>
- Anton, C., & Shikov, A. (2018). The method of personalized corporate e-learning based on personal traits of employees. *Procedia Computer Science*, 136, 511-521. <https://doi.org/10.1016/j.procs.2018.08.253>
- Beinicke, A., & Kyndt, E. (2019). Evidence-based actions for maximising training effectiveness in corporate e-learning and classroom training. *Studies in Continuing Education*, 42(2), 256-276. <https://doi.org/10.1080/0158037x.2019.1608940>
- Cavus, N., Omonayajo, B., & Mutizwa, M. R. (2022). Technology acceptance model and learning management systems: Systematic literature review. *International Journal of Interactive Mobile Technologies*, 16(23), 109-124. <https://doi.org/10.3991/ijim.v16i23.36223>

- Čevra, B., Kapo, A., Zaimović, T., & Turulja, L. (2022). E-learning in organizations: Factors affecting individual job performances. *International Journal of Emerging Technologies in Learning*, 17(02), 189-208. <https://doi.org/10.3991/ijet.v17i02.26967>
- Chen, H.-R., Tseng, H.-F., 2012. Factors that influence acceptance of web-based e-learning systems for the in-service education of junior high school teachers in Taiwan. *Evaluation and Program Planning*, 35(3), 398-406. <https://doi.org/10.1016/j.evalprogplan.2011.11.007>
- Čonková M. (2013). Analysis of perceptions of conventional and e-learning education in corporate training. *Journal of Competitiveness*, 5(4), 73-97. <https://doi.org/10.7441/joc.2013.04.05>
- Gavril, R.M., Kiehne, J., Hell, C.R., & Kirschner, C. (2017). Impact assessment on the performance of e-learning in corporate training programs in the context of globalization. *In Proceedings of the International Conference on Business Excellence* (pp. 398-410). <https://doi.org/10.1515/picbe-2017-0043>
- Giannakos, M.N., Mikalef, P., & Pappas, I.O. (2021). Systematic literature review of e-learning capabilities to enhance organizational learning. *Information Systems Frontiers*, 24, 619-635. <https://doi.org/10.1007/s10796-020-10097-2>
- Giannakos, M.N., Mikalef, P., & Pappas, I.O. (2019). Technology-enhanced organizational learning: A systematic literature review. In Pappas, I.O., Mikalef, P., Dwivedi, Y.K., Jaccheri, L., Krogstie, J., & Mäntymäki, M. (Eds.). *Digital Transformation for a Sustainable Society in the 21st Century. I3E 2019. Lecture Notes in Computer Science* (vol. 11701). Cham: Springer. https://doi.org/10.1007/978-3-030-29374-1_46
- Hsia, J. W., Chang, C. C., & Tseng, A. H. (2012). Effects of individuals' locus of control and computer self-efficacy on their e-learning acceptance in high-tech companies. *Behaviour & Information Technology*, 33(1), 51-64. <https://doi.org/10.1080/0144929X.2012.702284>
- Kitchenham, B., & Charters, S. (2007). Guidelines for performing systematic literature reviews in software engineering. Keele University and Durham University Joint Report, EBSE Technical Report EBSE-2007-01. <https://docs.edtechhub.org/lib/EDAG684W>
- Kimiloglu, H., Ozturan, M., & Kutlu, B. (2017). Perceptions about and attitude toward the usage of e-learning in corporate training. *Computers in Human Behavior*, 339-349. <https://doi.org/10.1016/j.chb.2017.02.062>
- Lee, S., & Kim, B.G. (2015). Users' preferential factors in Web-based e-learning systems for ease of workplace learning in Korea. *Learning and Individual Differences*, 39, 96-104. <https://doi.org/10.1016/j.lindif.2015.03.027>
- Legowo, N., Abdurachman, E., Herwidiana K., I., & Budiastuti, D. (2019). The influence of instructor readiness, it capability, support of LMS content, and their implications on e-learning effectiveness in a Corporate University of BUMN. *International Journal of Recent Technology and Engineering*, 8, 3, 54-59. <https://doi.org/10.35940/ijrte.c3875.098319>
- Lin, C.-Y., Huang, C.-K., & Zhang, H. (2018). Enhancing Employee Job satisfaction via e-learning: The mediating role of an organizational learning culture. *International Journal of Human-Computer Interaction*, 584-595. <https://doi.org/10.1080/10447318.2018.1480694>
- Li, D.-C., & Tsai, C.-Y. (2020). Antecedents of employees' goal orientation and the effects of goal orientation on e-learning outcomes: The roles of intra-organizational environment. *Sustainability*, 12(11), 4759. <https://doi.org/10.3390/su12114759>
- Mehroliya, S., Alagarsamy, S., & Indhu Sabari, M. (2021). Moderating effects of academic involvement in web-based learning management system success: A multigroup analysis. *Heliyon*, 7, 5, e07000. <https://doi.org/10.1016/j.heliyon.2021.e07000>
- Murugappan, V., & Ramesh, P. (2022). Analysis on quality of learning in e-Learning platforms. *Advances in Engineering Software*, 172, 103168. <https://doi.org/10.1016/j.advengsoft.2022.103168>

- Sorochinsky, M.A., Barakhsanova, E.A., Vlasova, E.Z., Prokopyev, M.S., & Burnashev, A.E. (2020). Corporate training of Yakutia teachers to apply methods of e-learning. *Journal of Educational Psychology*, 8(3), e486. <https://doi.org/10.20511/pyr2020.v8n3.486>
- Sylqa, D., & Neziraj, E. (2022). The relation between organizational learning and information technology in companies with international activities during the Covid-19 pandemic. *Quality - Access to Success*, 23, 186. <https://doi.org/10.47750/qas/23.186.37>
- Wan, Z., Compeau, D., & Haggerty, N. (2012). The effects of self-regulated learning processes on e-learning outcomes in organizational settings. *Journal of Management Information Systems*, 29(1), 307-340. <https://doi.org/10.2753/MIS0742-1222290109>
- Wang, Z.-Y., Zhang, L.-J., Liu, Y.-H., Jiang, W.-X., Jia, J.-Y., Tang, S.-L., & Liu, X.-Y. (2021). The effectiveness of E-learning in continuing medical education for tuberculosis health workers: A quasi-experiment from China. *Infectious Diseases of Poverty*, 10, 72. <https://doi.org/10.1186/s40249-021-00855-y>