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CHALLENGES OF E-LEARNING IMPLEMENTATION AT THE LIBYAN HIGHER TECHNICAL AND VOCATIONAL INSTITUTES: LEADERS' AND EFL TEACHERS' PERSPECTIVES

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Abstract:
This study attempts to identify challenges faced by leaders and EFL teachers at Libyan higher vocational and technical institutes when implementing e-Learning. The present study aims to explore administrative challenges faced by institutional leaders in managing e-learning implementation. In addition, the study aims to highlight the pedagogical and technological challenges in the implementation of e-learning from EFL teachers' perspectives at higher vocational and technical institutes in Libya. A mixed-methods approach was adopted, where a structured questionnaire was administered to thirty-five EFL teachers, and four institutional leaders were interviewed. The findings revealed that institutional leaders and EFL teachers at Libyan institutes face several administrative, pedagogical and technological challenges, such as the absence of a clear legal framework, institutional and policy-related barriers, limited financial support, weak institutional planning, inadequate ICT infrastructure, limited e-learning methodological skills, change resistance, lack of e-learning teaching aids during lectures and insufficient training.

Keywords: E-learning, EFL teachers, institutional leaders, administrative challenges, pedagogical challenges, technological challenges

1. Introduction

E-learning has been a core area of interest for higher education institutions worldwide during recent decades. This is primarily attributable to the fact that integrating e-learning with traditional learning offers low operational costs, creates more inclusive and equitable learning opportunities, provides more scalable and flexible learning, makes lecture and activity delivery easier and empowers the effectiveness of the transferred or imparted knowledge and learning. Furthermore, with technological advancement, online learning comes in handy for teachers and students.

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Over the last decade, many Libyan universities and vocational education institutes have launched initiatives to implement e-learning models within their educational plans, transitioning from face-to-face learning to electronic and blended learning. At the student's level, the initiatives included new e-learning methods for classroom teaching and learning such as smart boards, e-exams, recorded lectures, Facebook pages, online lectures and Google classrooms. Libyan universities and institutes took part in several international e-learning projects within Erasmus+ and DAAD to build education institutes and teachers' e-learning capacity. In addition, many on-site e-learning capacity building training courses were conducted to develop academic staff's e-learning skills at universities.

Undoubtedly, the transition from face-to-face learning to e-learning is challenging and requires effort and time to be successful. There are many opportunities available for implementing e-learning at Libyan universities (Kumar & Artemi, 2010; Rhema & Miliszewska, 2014; Entisar, 2021). However, some studies in the Libyan context have identified a set of factors influencing the successful adoption of e-learning at Libyan universities (Kenan & Crinela, 2012; Kashada *et al.*, 2018; Embark, 2020; Entisar, 2021).

Obviously, the success of e-learning implementation is related to various factors, mainly students, instructors, good governance, legal frameworks, effective management and IT infrastructure. Therefore, it is the right time to investigate challenges faced by leaders and EFL teachers at Libyan higher vocational and technical institutes when using e-Learning.

2. The Importance of the Study

The importance of this study lies in the following:

1) It sheds light on the challenges of e-learning experienced by educational leaders and teachers at higher education institutions and the faculties.
2) It helps officials at the Ministry of Technical and Vocational Education identify challenges of e-learning experienced at technical and vocational institutions.
3) It is useful for decision-makers at the ministry to provide appropriate solutions to the difficulties mentioned, especially during critical times such as wars and pandemics, and to utilize the opportunities for the quality and continuity of education.

3. Study Objectives

This study aims to:

1) Exploring administrative challenges that leaders of Technical and Vocational institutes face when facilitating the implementation of E-learning.
2) Identifying challenges that Libyan EFL Teachers at Technical and Vocational institutes face when using E-learning?

4. Study Research Questions

1) What administrative challenges do leaders of Technical and Vocational institutes face when facilitating the implementation of e-learning?
2) What challenges do Libyan EFL Teachers at Technical and Vocational institutes face when using e-learning?

5. Literature Review

5.1 Overview of the Historical Development of E-learning

The concept of e-learning has significantly evolved since the emergence of mail-based learning as a distance learning method (correspondence mail) in 1840 in Berlin (Verduin & Clark, 1991). The introduction of radio and television in the 1920s expanded access to remote instruction. The emergence of computer-assisted learning in the 1960s triggered the beginning of modern e-learning and blended learning models. Then, with the widespread use of the Internet in the 1990s and artificial intelligence (AI) in the 2000s, educational institutions adopted Learning Management Systems (LMS), such as Blackboard and Moodle, to support online and offline learning. In addition, the rise of Massive Open Online Courses (MOOCs) has played a significant role in bridging the digital divide by providing students from everywhere access to free educational resources (Wagner, 2008; Oulamine *et al.*, 2025; Mswazi, 2014). Indeed, these global advancements became a key driver for pedagogical innovation (Oulamine *et al.*, 2025). However, despite these developments, e-learning implementation in developing countries remains limited due to technological infrastructure and human capacity constraints (Bashitialshaaer *et al.*, 2021; Mswazi, 2014).

5.2 Definition of E-learning

E-learning has been differently defined based on specific categorical properties. Some academies and international organisations portrayed e-learning as the use of technology for learning and placed a focus on the technological aspects of e-learning. According to these technology-driven definitions, Guri-Rosenbilt (2005, p. 469) defined e-learning as "the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitution for the face-to-face meetings by online encounters". Likewise, Governors State University (2008) explains that "*e-learning is to take a course online using a modem, wireless, or cable connection to access academic course material from a computer, phone, or handheld device*".

From an educational perspective, researchers and academics described "*as an improvement on an existing educational paradigm*" (Sangrà, Vlachopoulos & Cabrera, 2012, p. 149). Based on Education-Oriented Definitions, the European Commission (as cited in Alonso *et al.*, 2005, p. 218) defined e-learning as "*the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services, as well as remote exchange and collaboration*". Similarly, e-learning is defined as the use of

information technologies to support students in developing their learning (Ellis, Ginns & Piggott, 2009). Furthermore, researchers and scholars consider e-learning as a communication, interaction, and collaboration tool and based on their communication-oriented definition, "*e-learning is learning based on information and communication technologies with pedagogical interaction between students and the content, students and the instructors or among students through the web*" (González-Videgaray, 2007; Sangra *et al.*, 2012 as cited in Sadeghi, 2018. P. 16).

As can be seen from the definitions above, it is concluded that e-learning is an educational system based on modern methods of communication such as the computer, audio-visual materials, search engines, social media platforms, blogs, emails, electronic libraries, podcasts and websites, whether accomplished in the classroom or at a distance. Thus, e-learning is a learning system based on formalised teaching with the help of electronic resources; whether teaching takes place in or out of the classrooms, the use of computers and the Internet are the major components of e-learning.

5.3 E-learning and Education

Electronic learning is an education-based model that has dramatically changed the way people learn. It is a method of sharing and transferring knowledge through computers, the internet, audio-visual materials, social media platforms, search engines, electronic libraries, and websites, whether accomplished in the classroom or at a distance. Educational institutions utilize this type of education, such as through the World Wide Web and Learning Apps, to make their programs and materials available online and offline. In addition, e-learning enables learners to make use of networks, the Internet, e-mail, virtual Apps and smart boards to acquire knowledge and skills more effectively and efficiently.

Moreover, e-learning plays a key role in providing innovative learning methods using communication tools that ensure the quality of introducing modern technology in university education. It has also contributed to solving study-related issues such as weak financial capabilities and mobility difficulties being faced by students and faculty members (Aini *et al.*, 2020). Its Significance emerged when traditional and electronic education were combined to maintain study continuity, and this was exemplified during the Corona pandemic, when universities used several e-learning models to ensure the continuity of education. Thus, the potential of e-learning in the continuity and quality of the educational process is evident, and e-learning has become an essential part of educational systems in many developed and developing countries (Alodan, 2021).

5.4 E-learning Challenges

There are many issues and challenges that students, teachers and educational leaders encounter when applying e-learning tools and/or forms in their institutions. Such difficulties could directly or indirectly influence the implementation of e-learning inside and outside the classroom. For instance, Aboagye *et al.* (2020) stated that students in Ghana experienced difficulties in using e-learning during the COVID-19 pandemic. They

pointed out that accessibility was the most prominent challenge students encountered while doing online courses. Their study also found out that students were not prepared for the online eLearning experience. Another prominent challenge related to e- learning is the lack of community recognition of its concepts. Similarly, a study conducted by Al-Azawei *et al.* (2016) categorized challenges hindering e-learning implementation in Iraq into two groups. The first category comprises external challenges, such as internet bandwidth, insufficient financial support, inadequate training programs, lack of technical support, lack of ICT infrastructure, ambiguous plan and policies and Frequent electricity shortage. The second category includes internal challenges, namely: ICTS and e-learning literacy, lack of awareness, interest, and motivation (Al-Azawei *et al.* 2016).

In 2023, Alnemrat *et al.* investigated the challenges to the implementation of e-learning at a major Jordanian higher education institution from the faculty members' perspectives. The study findings revealed that among the major challenges that faculty members face while implementing e-learning are unstable internet conectivity, limited infrastructure and resource, and the lack of digitized materials for most of the curriculum.

Similarly, Tarus *et al.* (2015) did a study in Kenyan public universities in which they investigated the e-learning challenges from lecturers' and university staff's perspectives. They explored that "*inadequate ICT and e-learning infrastructure, financial constraints, lack of technical skills on e-learning development and extensive time required to develop materials, and lack of interest and commitment to use e-learning*" are the main challenges that Kenyan universities face in the implementation of e-learning. In their systematic literature review of published articles between 2015 and 2024 in developing countries to highlight barriers affecting e-learning in higher education, Oulamine *et al.* (2025) reported that higher education institutions face technological barriers, such as lack of infrastructure and low connectivity, (2) institutional barriers, such as lack of administrative support and inadequate educational policies, and (3) psychological barrier, such as resistance to change and low digital self-efficacy. Fatuma (2024, p.1) investigated Saudi EFL students' perceptions of the implementation of blended learning (BL) at a Saudi university context. She found that "*students in their classrooms perceived many challenges in terms of implementing the approach. Two main sources of difficulties were constantly identified: challenges initiated by students in terms of lack of technology competence to learn in a BL environment and challenges initiated by the educational system in terms of teachers' lack of suitable training"*.

The stream of literature that sheds light on challenges in e-learning in the context of higher education is plentiful. Most of the studies that were conducted in developing countries highlighted almost the same challenges, namely: e-learning methodology, technical training, technology, infrastructure limitation, teachers and students' motivation and self-efficacy, time management, study discipline, lecturers' readiness, and administrative and financial challenges (Aini *et al.*, 2020; Islam *et al.*, 2015; Ja'ashan, 2020; Almaiah *et al.*, 2020; Lodan, 2021; Moustakas & Robrade, 2022; Qureshi *et al.*, 2012; Kumar, 2015).

6. Research Methodology

6.1 Research Method

The researcher adopted a mixed-methods research design to obtain a detailed and comprehensive understanding of the perspectives of the leaders of technical and vocational institutes and EFL teachers at these institutes regarding the challenges of e-learning implementation. This approach is well suited to the present study, as it combines multiple research strategies that can provide deeper and more comprehensive conclusions about the research problem (Dornyei, 2007). In the qualitative phase, semi-structured interviews were conducted with the leaders of technical and vocational institutes to gather in-depth insights into their perspectives on facilitating e-learning implementation. In the quantitative phase, a structured questionnaire was administered to EFL teachers at technical and vocational institutes to identify challenges they encounter when using e-learning. Four leaders and thirty-five EFL teachers from technical and vocational institutes participated in the present study.

7. Data Analysis and Reporting

7.1 Results from Semi-Structured Interview

The components of the analysis were determined by the participants' responses obtained from the semi-structured interviews. The analysis was also based on a thematic view by a deep reading of the transcripts. The researcher analyses the data according to his understanding of the participants' responses and the literature review.

7.1.1 Administrative Challenges

Four institution managers and four heads of departments were interviewed to identify the administrative challenges they experienced in their attempt to facilitate the implementation of e-learning in their technical and vocational institutes. They highlighted several technological, administrative and financial challenges that were a real obstacle to implementing e-learning. They reported that the lack of an e-learning legal framework, change resistance by administrative staff, lack of administrative encouragement, Inadequate ICT (Information Communication Technology) and E-learning Infrastructure, Lack of financial support to enhance e-learning within the university institutions, Lack of alignment between e-learning initiatives and institutional strategic plans and Lack of infrastructure required for achieving transformation from traditional learning to e-learning.

They went on to explain that the lack of interest in using e-learning among teachers is the main obstacle to implementing any e-learning and blended-learning initiatives in their institutions. They also stated that allocated budgets and the absence of an e-learning legal framework impeded the opportunity to implement e-learning. Some of the managers emphasized the significance of the existence of an e-learning legal framework, as it contributes to making e-learning a de facto. They also emphasized the negative

impact of the poor internet connection in many areas in Libya and the lack of seriousness and the absence of will from the decision makers in adopting an e-learning policy at the higher education institutions. They almost agreed about these challenges. However, they disagree about the extent to which the mentioned challenges affect the shift from traditional learning to e-learning and blended learning.

7.2 Results from Structured Questionnaire

In the present study, a mixed-methods research design was used to address answers to the research questions. Both semi-structured interviews and a structured questionnaire were used to collect information on challenges faced by leaders and EFL teachers at Libyan higher vocational and technical institutes when using E-learning. The questionnaire was designed according to the Likert scale (see table 1) in which respondents can determine their level of agreement to the questionnaire statements in five points: (1) never; (2) rarely; (3) sometimes, (4) often, (5) always.

Table 1: Likert Scale

Answer	Never	Rarely	Sometimes	Often	Always
Degree	1	2	3	4	5

In addition, the level of agreement on the Likert Scale was specified as follows:

Table 2: Weighted Average Values of the Levels of Agreement on Likert Scale

Scale Weight	**Level of Agreement**	**Weighted Average**
1	Never	From 1 to 1.8
2	Rarely	From 1.81 to 2.59
3	Sometimes	From 2.6 to 3.39
4	Often	From 3.4 to 4.19
5	Always	From 4.20 to 5

The weighted average values of the Levels of Agreement on the Likert Scale describe the following:

1) The arithmetic mean from 4.20 - 5 describes constant use of the strategy.
2) The arithmetic mean from 3.40 - 4.19 describes frequent use of the strategy.
3) The arithmetic mean from 2.6 - 3.39 describes the average use of the strategy.
4) The arithmetic mean from 1.8 - 2.59 describes rare use of the strategy.
5) The arithmetic mean from 1 - 1.79 describes no use of strategy.

7.2.1 Challenges Faced by Teachers

7.2.1.1 Pedagogical Challenges

The data collected demonstrated that instructors frequently experience pedagogical challenges when integrating e-learning in their teaching (see Table 3).

Table 3: Pedagogical Challenges Descriptive Analysis

No.	Items	N	Means	Percentage of Approval
1	Lack of skills in e-learning teaching methodology among teachers	35	3.9800	80%
2	Limited interaction between students and instructors.	35	3.5600	71%
3	Limited time for developing E-learning resources, including course content, assessments, and activities.	35	3.8600	77%
4	Insufficient knowledge of designing blended-learning or/and e-learning courses' content.	35	4.1500	83%
5	Limited utilization of online and offline open access sources	35	4.3200	86%
6	Insufficient English language proficiency among instructors.	35	3.8600	77%
7	Change resistance by teaching staff.	35	4.1000	82%
Total		35	3.9800	79%

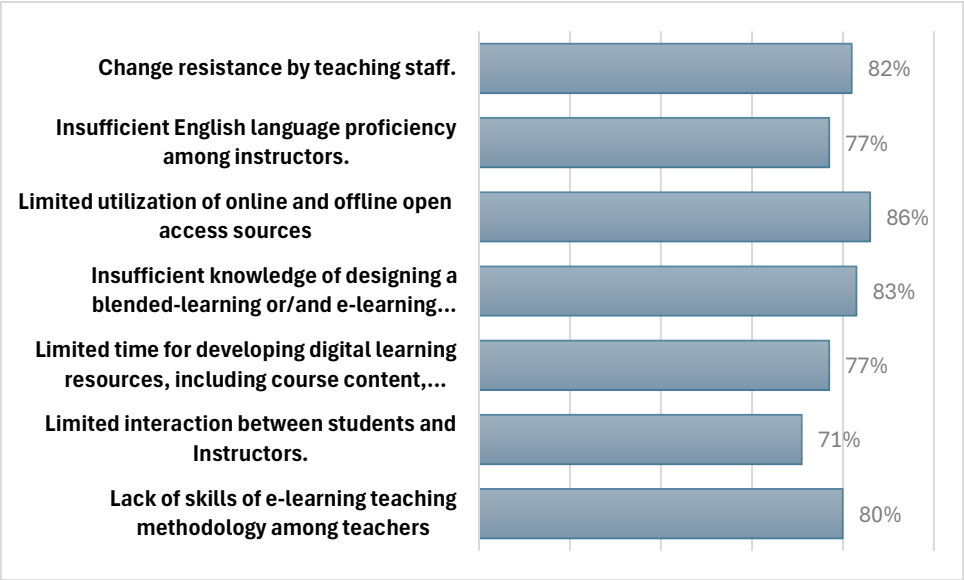

Figure 1: Approval Percentage of Pedagogical Challenges

Across the seven questionnaire items, the **overall mean score** was **3.98** (on a 5-point Likert scale), with a **percentage of agreement** of **79%**. That is, the overall mean score shows that instructors frequently face challenges when applying e-learning methods in their teaching. This reflects that instructors encounter various challenges that hinder the effective application of e-learning as a teaching and learning tool.

For instance, the item *" Limited utilization of online and offline open access sources "* achieved the **highest mean score** (**M = 4.32**) and a **percentage of agreement of 86%**, suggesting that instructors face difficulties in leveraging open access sources and the valuable educational materials they provide.

Similarly, high agreement levels were found for statements such as:

- *" Insufficient knowledge of designing a blended-learning or/and e-learning courses' content."* (**M = 4.15, 83% percentage of approval**)
- *" Change resistance by teaching staff."* (**M = 4.10**, **82% percentage of approval**),
- and *" Lack of skills of e-learning teaching methodology among teachers "* (**M = 3,98**, **80% percentage of approval**).

Overall, these results suggest that instructors frequently face challenges arising from practical, pedagogical, and emotional factors.

7.2.1.2 Technological Challenges

Table 4: Technological Challenges Descriptive Analysis

No.	Items	N	Means	Percentage of Approval
1	Insufficient technology, software and technical support for effective access at school and home.	35	4.100	82%
2	Insufficient availability of essential adaptive technology.	35	3.620	72%
3	Lack of technological background.	35	4.120	82%
4	Inadequate training opportunities provided by institutions	35	3.710	74%
5	Lack of e-learning teaching aids during lectures.	35	4.300	86%
6	Insufficient teachers' experience in utilizing E-learning tools.	35	3.940	79%
Total		35	3.97	79%

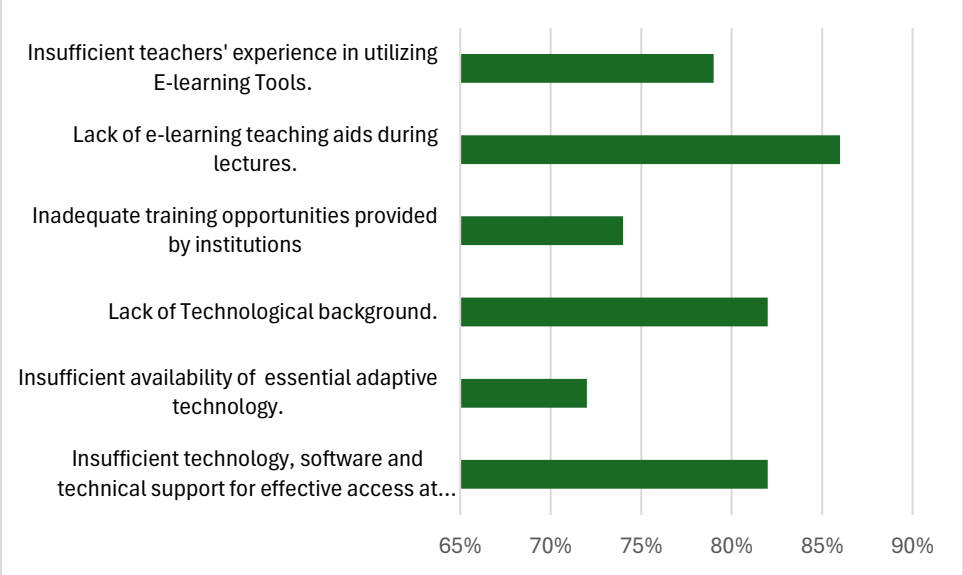

Figure 2: Approval Percentage of Technological Challenges

Across the six questionnaire items, the **overall mean score** was **3.97** (on a 5-point Likert scale), with a **percentage of agreement** of **79%**. That is, the overall mean score demonstrates that instructors frequently encounter challenges associated with technological infrastructure, e-learning knowledge, skills and development. These findings suggest that higher technical and vocational institutes lack the necessary

technological infrastructure and capacity-building programs required to support the shift from traditional education to e-learning.

Items 5, 3 and 1 *" Lack of e-learning teaching aids during lectures" , " Lack of Technological background", "Insufficient technology, software and technical support for effective access at school and home"* obtained **highest means scores of** (**M = 4.30**, **86% approval)**, **(M = 4.12, 82% approval)** and (**M = 4.10**, **82% approval)** respectively**,** suggesting that higher technical and vocational institutes are inadequately equipped with technological infrastructure for ensuring effective shift from traditional education to e-learning.

Similarly, high approval levels were found for items such as:

- *"Insufficient teachers' experience in utilizing E-learning Tools."* (**M = 3.94, 79% percentage of approval**)
- *"Inadequate training opportunities provided by institutions."* (**M = 3.71**, **74% percentage of approval**),

This result indicates that higher technical and vocational institutes lacks the capacity-building programs necessary to support the shift from traditional education to e-learning.

8. Discussion

The study aims to investigate challenges faced by leaders and EFL teachers at Libyan higher vocational and technical institutes when using E-Learning. The findings of this study are in line with previous research conducted in developing-country contexts, which highlights similar challenges in the implementation of e-learning. Regarding administrative challenges, the institutional leaders reported the absence of a clear legal framework, limited financial support, weak institutional planning, and inadequate ICT infrastructure. This result is consistent with Al-Azawei *et al.* (2016), Tarus *et al.* (2015), and Oulamine *et al.* (2025) findings, who emphasized institutional and policy-related barriers as the main administrative challenges faced by institutions in developing countries. Similarly, poor internet connectivity and limited technological infrastructure is compatible with studies by Kenan and Crinela (2012) and Alnemrat *et al.* (2023). From the teachers' perspectives, pedagogical challenges such as limited e-learning methodological skills, change resistance, and insufficient training are consistence with challenges reported in many developing countries by Islam *et al.* (2015), and Ja'ashan (2020). Overall, these findings confirm the challenges of e-learning implementation encountered in developing countries.

9. Conclusion

The study aims to investigate challenges faced by leaders and EFL teachers at Libyan higher vocational and technical institutes when using E-Learning. The findings of this study indicate that higher vocational and technical institutes face several challenges in the implementation of e-learning. Administratively, the main challenges faced by the

institutional leaders in managing the implementation of e-learning include the absence of a clear legal framework, institutional and policy-related barriers, limited financial support, weak institutional planning, and inadequate ICT infrastructure. From a pedagogical and technological perspective, EFL teachers reported limited e-learning methodological skills, change resistance, lack of e-learning teaching aids during lectures and insufficient training are reported as the primary challenges. This study has implications for the Ministry of Technical and Vocational Education, Institutional Leaders, Educators in Libya as it helps them understand the challenges faced by instructors when applying e-learning. Moreover, further actions might be taken by decision-makers at the Ministry of Technical and Vocational Education in Libya and by the institutions to address these challenges.

Conflict of Interest Statement
The author declares no conflicts of interest.

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