

## The Role of E-Learning in Tertiary Education during the Violent Conflicts in Libya

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### Abstract

The civil war in Libya has had negative effects on the educational needs of college and university students. Violent conflicts have inflicted serious damage on the infrastructure of post-secondary education and have imposed numerous challenges to the Libyan Ministry of Higher Education. This qualitative study is based on 45 semi-structured interviews with professors, assistant professors and lecturers. The findings shed light on numerous issues such as the positive role of e-learning in securing the educational needs of Libyan students, protecting them from danger, and keeping them away from the temptation of being recruited by armed groups. In addition to being cost-effective, e-learning has been reported to enhance the students' computer skills, English language skills, feelings of security, and motivational level. Based on these findings, the researchers propose a theoretical model for the implementation of e-learning in Libyan colleges and universities. The research findings have significant implications for policy makers, higher education experts, students, parents and future researchers.

**Keywords:** Sustainable Learning, e-learning, tertiary education, civil war, violent conflicts.

## دور التعلم الإلكتروني في التعليم العالي خلال الصراعات العنيفة في ليبيا

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### الملخص

لقد خلفت الحرب الأهلية في ليبيا آثارًا سلبية على الاحتياجات التعليمية لطلاب الكليات والجامعات. فقد ألحقت الصراعات العنيفة أضرارًا جسيمة بالبنية التحتية للتعليم ما بعد الثانوي وفرضت العديد من التحديات على وزارة التعليم العالي الليبية. وتستند هذه الدراسة النوعية إلى 45 مقابلة شبه منظمة مع أساتذة وأساتذة مساعدين ومحاضرين. وتلقي النتائج الضوء على العديد من القضايا مثل الدور الإيجابي للتعليم الإلكتروني في تأمين الاحتياجات التعليمية للطلاب الليبيين وحمايتهم من الخطر وإبعادهم عن إجراء التجنيد من قبل الجماعات المسلحة. بالإضافة إلى كونه فعالاً من حيث التكلفة، فقد تم الإبلاغ عن أن التعلم الإلكتروني يعزز مهارات الكمبيوتر لدى الطلاب ومهارات اللغة الإنجليزية ومشاعر الأمان ومستوى التحفيز. بناءً على هذه النتائج، يقترح الباحثون نموذجًا نظريًا لتطبيق التعلم الإلكتروني في الكليات والجامعات الليبية. نتائج البحث لها آثار مهمة على صناعات السياسات وخبراء التعليم العالي والطلاب وأولياء الأمور والباحثين في المستقبل.

**الكلمات المفتاحية:** التعلم المستدام، التعلم الإلكتروني، التعليم العالي، الحرب الأهلية، الصراعات العنيفة.

### 1. Introduction

Libya has been facing many challenges including lack of security, a long history of conflict with the USA and damaged infrastructure (Bellamy, & Williams, 2011; Elabbar, 2016). However, the intensity of these challenges has increased since 2011 due to the increasing violent conflict between Libyan government and armed groups on one hand and amongst armed groups throughout the nation on the other (Vandewalle, 2018).

The Libyan government has recently developed few plans towards the integration of Information and Computer Technology (ICT) into its educational system (Vandewalle, 2018; Elabbar, 2016). The Libyan society has a hierarchical structure with a number of cultural features such as high government control, uncertainty avoidance, centralization, power distance and inequalities (Obeidi, & Obeidi, 2013; Vandewalle, 2018). There are many factors related to the success of the education system such as collective efforts, training of students and teachers, and government support. The current status of

education in colleges and universities in Eastern and Southern Libya is worse than the conditions in the Western cities. Moreover, due to life threatening risks, teachers and families are moving from one location to another or living in refugee camps in order to protect themselves from the attacks of armed groups (Vandewalle, 2018).

### **Literature Review:**

Existing literature has identified a number of benefits for e-learning such as fast implementation and reduced cost (Alaugab, 2007; Al-Shehri, 2010; Mupinga, 2005), which is the reason why it has attracted the attention of many national governments (Moreno, & Mayer, 2007; Mouri, et al., 2018; Huang, et al., 2012). According to Mouri et al. (2018), e-learning is convenient for people living in far locations, for females in places with significant gender restrictions, for people with a long history of injury or illness and for single parents (Kong, et al., 2014; Mesfin, et al., 2018; Macfadyen, & Dawson, 2012; Bell, & Federman, 2013; Maxwell, & Mucklow, 2012). Moreover, e-learning enables people (particularly residents of war-torn and unsafe countries) to easily develop their professional and technical skills (Anderson, 2008; Garrison, 2017; Deepwell, 2007; Khribi, et al., 2009; Rohleder, 2008). That is why a number of researchers (Al-Azawei, et al., 2016; Milton 2013; Rajab, 2018) have pointed out that e-learning is the most suitable solution for post-war recovery in Libya in spite of any future developments in physical education. Despite the potential benefits of e-learning, challenges regarding its implementation vary across different countries, regions, languages, and even among individuals.

Garcia et al. (2018) believe that e-learning has created more higher education opportunities especially for busy professional or individuals living under specific restrictions or having education gap. With e-learning, they are able to access educational content at any time and place; therefore, learning and career development opportunities have increased over time (Mesfin, et al., 2018; Garcia et al. (2018). In addition, e-learning is considered environment friendly as it creates 85-percent lower level of CO2 and consumes 90-percent less energy, compared to traditional education. In other words, it has reduced the use of many resources (i.e. paper, transport and fuel consumption, and other resources related to equipment and accommodation). Some studies (Ananga, & Biney, 2018; Mupinga, 2005; Rajab, 2018) have pointed out that it is not easy to introduce e-learning as it requires heavy investment in terms of technology infrastructure, teacher training on computer literacy and technical skills, faster internet services, uninterrupted electricity supplies, and online material databases. Other studies (Ananga, & Biney, 2018; Mupinga, 2005; Rajab, 2018) have indicated additional hurdles for the

implementation of e-learning, especially in developing countries, such as a lower level of readiness among students and teachers, lack of government interest and support, lower level of organisational readiness, and language barriers.

### Research Gap

A considerable number of previous studies have explained the benefits and challenges of e-learning for colleges and universities (Ananga, & Biney, 2018; Mesfin, et al., 2018; Garrison, 2017; Rajab, 2018), but they haven't provided evidence for the effectiveness of e-learning and the strategies needed to implement e-learning, especially in conflict situations.

Tamtam et al. (2011) note that almost all educational programs in Libya have been designed in Arabic due to a ban on foreign-language use in education. Consequently, many UNICEF professionals haven't been able to communicate well with students or deliver efficient training to teachers (Hweissa, & Su, 2018; Elaiess, 2017; ElObeidy, 2016; Busnaina, & Woodall, 2015). Besides, the ongoing violent conflict in Libya has minimized the resources required for e-learning. The most important aspect of this research is that it proposes e-learning as an alternative to traditional education. In the post-conflict era, implementation of e-learning in Libya requires various resources such as uninterrupted electricity, well-established computer labs, intention and motivation to adopt technology, fast internet services, trained teachers, and English language education. This study provides recommendations on restarting education in Libya in spite of the various challenges related to organisational, financial, individual, governmental, and technological resources.

### Research Aims and Objectives:

This study attempts to address the educational needs of college and university students in Libya. E-learning is proposed as the best possible alternative to traditional education in this conflict-stricken country. Specific suggestions are provided for implementation.

### Research objectives

To achieve these goals, this research will:

- To explore the significance of e-learning in violent-conflict contexts.
- To identify the challenges associated with the implementation of traditional education in countries that witness violent-conflicts.

- To offer practical suggestions for implementing e-learning in contexts of violent conflicts.

## 2. Methodology

### Research Design:

The current research is exploratory in nature; its primary aim is to uncover the challenges related to the implementation of traditional education in war-afflicted Libya and come up with practical recommendations for using e-learning at the tertiary level. The Subjectivist Theory proposes that knowledge is socially constructed and that data for the research can be collected by employing qualitative research tools. The researchers utilise interpretivist analysis, which is heavily based on the Subjectivist Theory, also referred to as the Social Constructivist Approach (Kroll & Harper, 2013; Creswell & Creswell, 2017). Furthermore, the researchers use inductive reasoning to propose a practical model for tertiary education in Libya. The study is cross-sectional in nature due to time limitations. Creswell & Creswell (2017) recommends using cross-sectional research when there are limitations on implementing longitudinal research.

### Population and Sampling

The civil war in Libya has caused serious damage to the infrastructure of the country including that of education (Fetouri, 2016; Education under attack in Libya's war, 2018). The two largest Sothern cities in Libya, Benghazi and Tripoli, have suffered most from the ravages of war. Consequently, the infrastructure of colleges and universities in both cities is seriously damaged. People are, in fact, struggling to meet the very essential needs of life such as food, shelter, and clothing (UNHCR, 2018; UNICEF, 2018; Fetouri, 2016; Libya's War, 2018). The current study selects participants from both cities by utilising social as well as personal connections. Since the current research is exploratory in nature, purposive sampling is utilised for selecting the respondents. The main advantage of purposive sampling is to select respondents who possess sound knowledge on the topic and are willing to share what they know with the researcher. A total of 45 respondents have agreed to participate in the research.

### Data collection and analysis

Data for this research is collected from professors, assistant professors, and lecturers who have at least 5 years of teaching experience in Libyan universities or colleges. Such respondents are more qualified to provide data being the sufferers of the war and the main stakeholders of the Libyan education system. The responses of the research sample were recorded on audio devices after obtaining their consent. The responses were then saved

in a repository for later development of transcripts of the interviews. After the interviews were transcribed, a coding scheme was developed for capturing relevant data. Based on the codes, prominent themes were identified, and a thematic framework was developed. The relevant responses of the participants on each theme were then analysed. The program utilised in this regard was NVivo-11 Plus.

### 3. Results

**Sub-theme 1:** government investment for introducing e-learning in colleges and universities in Libya

A 48 years old lecturer commented on the role of government by saying, “E-learning will be helpful for families who have seen their loved ones departing due to conflicts in the country resulting in killing, bomb blasts, rape, and kidnapping of students from their classrooms. However, the Libyan government also cannot establish computer labs and provide fast internet services in colleges and universities. So, I think the government must attract private investors by offering high profit rates, as well as safety and security. The legitimate power and political support of the Libyan government is helpful in adopting e-learning system.”

A 37 years old assistant professor said, “I think the government should involve not just international funding agencies but also private investors to create a hybrid system of education (mixture of classroom and e-learning). A hybrid system of education will be helpful to teachers and students who have left their educational institutions due to the ravages of war. This system will also serve parents who have lost one or more of their children in war and are not ready yet to send the rest of their children to college or university. The cultural inertia and resistance level can decrease through social and cultural support.”

A 45 years old assistant professor stated, “One of the chief challenges is reconstructing computer labs and other education infrastructures and improving electricity system so that public universities and colleges can provide maximum opportunities to students. However, in the meantime, e-learning is the best solution until education infrastructure is built in the country. This will reduce the cost of education for students whose parents are already facing financial challenges due to the civil war.”

Many of the respondents have suggested that the Libyan government should attract international as well as private investors and Non-government Organisations (NGOs) so that financial support for education can be raised. However, they have indicated that establishing e-learning should be the top priority of the government so that students who have left their education due to civil war in the country can resume study immediately. Furthermore, the respondents have also indicated that building the education

infrastructure requires political stability in the country since lack of political stability often results in economic instability. Consequently, private and international investors will not invest in a destabilized country. Furthermore, the government must also provide reasonable salaries to the teachers who have left the profession. Some respondents have also argued that the government should involve technical experts in developing the infrastructure needed for e-learning. They have all agreed that there is no guarantee that violent conflicts won't take place again. Therefore, the government should create an e-learning system which continues functioning even during conflicts (See Table 1).

**Table 1: Role of e-learning in situations of educational crises**

Theme	Definition	Codes	Keywords
Role of e-learning in crisis situations	Identifying the existing challenges related to infrastructure and the role of e-learning in restarting the education process at the college and university level.	1. Government support and investment	<ul style="list-style-type: none"> <li>- Security and safety</li> <li>- Investment plan</li> <li>- Engaging international donors.</li> <li>- Attracting private investors - Engaging higher education experts.</li> <li>- Social and political support</li> <li>- Social structure</li> <li>- Legitimate power.</li> <li>- Focusing on rural areas.</li> <li>- Minimizing the culture of inertia labour.</li> <li>- Offering an effective wage plan.</li> <li>- Offering scholarships</li> <li>- Hybrid education system</li> <li>- Optimal usage of resources</li> </ul>
		2. Focus on ICT and training	<ul style="list-style-type: none"> <li>- Investing in computer labs.</li> <li>- Developing ICT infrastructure.</li> <li>- Hiring technical experts.</li> <li>- Developing educational database.</li> <li>- Providing electricity supply.</li> <li>- Developing computer literacy.</li> <li>- Providing additional ICT training.</li> <li>- Providing fast internet services.</li> <li>- Developing and expanding language options.</li> <li>- Develop technical skills.</li> <li>- Focusing on English language.</li> </ul>
		3. Motivation and Awareness	<ul style="list-style-type: none"> <li>- Creating social support.</li> <li>- Enhancing public motivation.</li> </ul>

			<ul style="list-style-type: none"><li>- Raising awareness among parents.</li><li>- Teacher skills improvement.</li><li>- Teacher abilities.</li><li>- Positive consensus and perception.</li><li>- Advertisements for raising public awareness.</li><li>- Holding seminars on e-learning.</li><li>- Involving migrant teachers.</li><li>- Involving volunteers.</li><li>- Involving students</li></ul>
		4. Benefits of e-learning	<ul style="list-style-type: none"><li>- Useful in cases of limited resources.</li><li>- High safety and security.</li><li>- Enhanced use of technology.</li><li>- Useful in areas of violent conflicts.</li><li>- Transparency and accountability.</li><li>Low cost and affordability.</li><li>- Involving teachers.</li><li>- Developing computer literacy.</li><li>Systematic performance evaluation.</li><li>Saving time and money.</li></ul>

**Sub-theme 2:** enhance focus on ICT and training to introduce e-learning in colleges and universities in Libya

A 45 years professor stated that, “There is an urgent need for redeveloping the ICT infrastructure in the country by increasing the speed of the internet, improving the electricity system, and reconstructing the computer labs so that students can be provided with opportunities to resume their university and college education, especially in the southern cities. The government must continue to make investment so that the best IT experts are hired for establishing the e-learning system. However, it is important that such system is established in both Arabic and English as most of us know English but have been educated in Arabic.”

A 52 years professor said, “The Ministry of Education has showed greater interest in developing e-learning system in areas full of challenges such as poverty, in war- torn areas, and areas with poor safety and security. A number of meetings have been held in the Education Ministry involving teachers, officers, and staff from educational



institutions. It is important that an online education system is developed in both languages so that it can provide equal opportunities to everyone, even those who can't speak English.”

A 42 years old college dean stated, “We are involved in meetings with various governmental as well as foreign aid agencies to develop ICT infrastructure so that an e-learning system can be established. We are focused on developing such an e-learning system in both Arabic and English.

The second theme, i.e. increased focus on ICT and training to introduce e-learning in Libyan institutions have demonstrated how stakeholders could be helpful for developing IT infrastructure. Many respondents have suggested that the government must invest in the development of educational database, computer labs, fast internet services, hiring technical experts, ICT training, and teaching English, in addition to Arabic. If the government does not invest in such programs, it will only add to the destruction of the education infrastructure. Many participants have suggested that the Libyan government should raise awareness among teachers, parents, and students by organizing informal meetings about the key skills necessary for an e-learning system. Establishing a cost-efficient learning system is necessary because people are already struggling to fulfil their essential needs. Therefore, an e-learning system is likely to be successful when it is affordable for the average income family and when it provides learning at flexible times. Many interviewees have asked for an e-learning system in both English and Arabic, probably because this will provide graduates with better opportunities to pursue their education in developed countries.

### **Sub-theme 3: enhance motivation and raise awareness about e-learning education**

A 38 years old lecturer stated that, “We must encourage knowledge sharing through e-learning system with the help of the government in Libya. Libyan institutions are unable to provide training sessions due to insufficient funding. Therefore, the government must involve international donors and funding agencies to establish an e-learning system.”

A 40 years old Head of Department stated that, “Initially the support and budget for building an e-learning system appears to be really constrained. Therefore, the focus must be on hiring expert volunteers, foreign teachers, and other experts who provide support to the educational system. Furthermore, we must also involve IT experts so that a safe and secure online database system can be developed for e-learning. Holding motivational meetings in this regard will be highly helpful as they will inform people about the implementation and benefits of e-learning.”

A 52 years old professor stated that, “After witnessing the massive crisis in the infrastructure of education involving destruction of schools and colleges, burning of school and university buses, high rise in the cost of education, constant delays in teachers’ salaries, and shortages of uniforms and books, the education system of the country seems to be in shambles. In such a situation, an e-learning system seems to be the only viable solution for the problem. The system will help in spreading education in far flung areas and areas where the infrastructure has been damaged. It will also be convenient for students and teachers who cannot dedicate full time to the educational institution for one reason or the other.”

A 43 years old lecturer stated that, “Many business organisations and industries have suffered from destruction due to the ongoing violent conflicts. Consequently, many families have not only been displaced but also have lost their source of income. Migration has also increased the lack of attendance in educational institutions even in areas where such institutions have survived destruction. In such instances, the provision of education is only possible through e-learning.”

The third theme highlights the views of the participants about making e-learning effective, particularly when the colleges and universities face challenges concerning safety and security, rise in crime rate, teachers’ migration, and damage to the infrastructure of the educational institutions. Besides, the participants have all argued that it is the responsibility of the government to secure the needed financial and human resources for e-learning. They have also suggested hiring foreign teachers, volunteers, and other interested individuals to make sure the system is effective. The participants have also suggested organizing awareness-raising meetings on the advantages of e-learning, particularly in areas where the educational infrastructure has been damaged completely. Some participants have argued that e-learning should be launched after establishing the needed social consensus, support, and awareness about the effectiveness of such a system in reviving post-secondary education in Libya.

#### **Sub-theme 4: raise awareness about the benefits of e-learning in insecure areas**

A 44 years old lecturer stated that, “It is about time we discussed the advantages of e-learning system with teachers, students, parents, and other stakeholders, especially in the southern cities of Libya. I believe that e-learning is safer than classroom teaching, particularly in the situation which Libya is facing at present. E-learning will serve a high number of students as they can study from the comfort of their own homes.”

A 43 years old professor shared his views as follows, “E-learning will provide education to students in a secure environment as they can get education from home through this system. It is important that the Ministry of Education should hold information sharing meetings whereby they raise awareness that e-learning is safe, flexible, affordable, and offers learning opportunities to a maximum number of students. It will also save travelling time for teachers and students.”

A 38 years old assistant professor noted that, “The main benefit of e-learning is that it is cost- efficient and affordable compared to face-to- face education. It also helps in engaging a maximum number of students who perform their tasks regularly. It offers technical skills, flexible hours, and computer literacy. We are highly optimistic that soon we will be able to create an e-learning system which is transparent, reliable, and has maximum reach.”

The respondents have pointed out some advantages of e-learning such as engaging teachers, students, and parents who have migrated to safer locations and are worried about education. They have mentioned numerous benefits of e-learning: safety, transparency, cost-effectiveness, affordability, consuming fewer resources, providing uninterrupted reach to learners during times of conflict, increasing computer literacy, offering flexible hours of study, and serving a maximum number of students in spite of the shortages in books, teachers, colleges, and universities. Furthermore, e-learning provides lifelong learning and high-quality education regardless of any time and place limitations.

However, the respondents have expressed some concerns regarding the implementation of e-learning in Libyan colleges and universities such as the low speed of the internet and the frequent power outages. Therefore, education officials should work on establishing a reliable e-learning infrastructure.

#### 4. Discussion

This model is based on a mix of the Institutional, DOI and AMO theories. According to the Institutional Theory, it is important to take into consideration some institutional forces when you intend to make reforms, change rules and routines, and establish authoritative guidelines and norms which ultimately develop the social and organisational behaviour (Jan, et al., 2012). The operation of each public institute is influenced by political orientation, cultural values, and the local circumstances of the country (Jan, et al., 2012; Martin, et al., 2003). Jan et al. (2012) have argued that every public institution is a combination of cultural, social, and political elements. Therefore, it is important to

understand these forces; otherwise, it is difficult to bring any structural, technological, and organisational change.

The public colleges and universities in Libya operate under the direct supervision of the Libyan Ministry of Education. Therefore, rules, regulations, policies, and system changes are implemented through downward communication. It has been found that many Libyan colleges and universities have been damaged due to violent conflicts (Fetouri, 2016). Besides, according to Al-Krenawi, Graham, Dean, and Eltaiba (2004), “Arab societies are highly diverse and consist of heterogeneous systems of social differentiation based on ethnic, linguistic, sectarian, familial, tribal, regional, socioeconomic, and national identities” (p. 103). There are different factors (i.e. symbolic and relational systems, routines and artifacts) which can either facilitate or create resistance against any technology change. The findings of this study show that the Libyan Ministry of Education has taken the decision to implement e-learning in Libyan colleges and universities using its legal power, influence, and authority Figure 1. However, such decisions may face some resistance due to lack of employee involvement in decision making, limited level of information sharing, and low level of skills in some prominent forces. These issues are likely to increase the complexities of implementing e-learning in public universities and colleges.

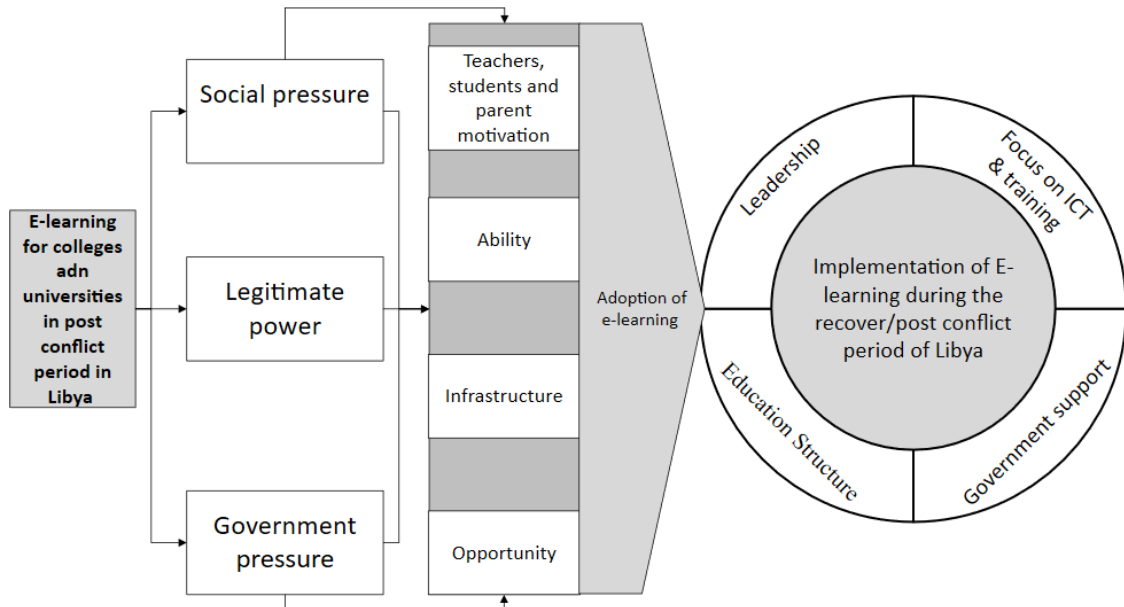


Figure 1: E-learning model in times of crises

According to AMO Theory, teachers' skills, motivation, intention to learn and adopt new systems are very important factors which can enhance the level of openness to implement e-learning in public colleges and universities. Therefore, in addition to investing in the e-learning infrastructure, it is important to improve the teachers' IT skills and increase the involvement of both teachers and students in decision-making. In addition, the fresh recruitment of more skilled workforce and providing a high level of training and skills development are likely to enhance employee's adaptability, self-efficacy, and openness towards E-learning. The DOI Theory focuses on the early and late adopters of e-learning technology as well as the importance of leadership skills in e-learning implementation (Stewart, 2016). Currently, public universities and colleges in Libya may not fully benefit from e-learning because of the limited financial resources, low level of awareness, government control, low number of teachers and students.

## 5. Conclusion

The Libyan government opened modern universities and colleges before the Libyan conflict. However, the country is currently in a state of chaos and the educational infrastructure has suffered serious damage. The conflict has had a devastating impact on colleges and universities. Preliminary estimates indicate that it may take over two decades for the Libyan government to rebuild the damaged infrastructure and install modern educational facilities. The violent conflict has resulted in teachers, students, and families migrating to other cities and living in refugee camps. People have been pushed to give priority to securing their basic needs such as shelter, food, and clothing over the attainment of education. Besides, many parents are afraid of sending their children to traditional schools due to criminal activities being on the rise and recruitment of young men in armed groups. Therefore, it is necessary to figure out a way to restart education at the college and university level. The current study proposes offering e-learning as a safe means of providing tertiary education. This educational system does not require building institutions; it can be dispensed through the internet. However, developing an e-learning system requires creating an online database for universities and colleges in the country. It also requires raising people's awareness about e-learning as an alternative to face-to-face education.

## Limitations

The current study has several limitations that should be considered when interpreting its findings. First, the research employed a qualitative methodology, relying exclusively on structured interviews as the sole data collection technique. This approach introduces

potential subjectivity, both from the researchers and the respondents, which may impact the validity and reliability of the findings.

Additionally, the study used purposive sampling to select participants, which can limit the generalizability of the results. Because the sample was specifically chosen based on the participants' knowledge and experience, it may not represent the broader population. Another limitation is the geographic scope of the study, as data was gathered only from respondents in two southern Libyan cities. This restriction may mean that the findings do not fully capture the diversity of educational needs and perspectives across Libya.

### Future Research Directions

To address these limitations and expand upon the findings, future research could employ random sampling to increase the generalizability of the results. Broader sampling could offer a more comprehensive view of e-learning's potential impact across different regions and communities in Libya. Expanding the study to include additional cities and towns would help to provide a more diverse and enriched understanding of the educational challenges and needs in conflict zones.

Furthermore, future research may explore adjustments to the framework proposed in this study. Such modifications should consider factors like the level and intensity of ongoing conflicts, current educational needs, funding availability, public awareness of e-learning, and government support. Additionally, variations in motivation and resource availability across regions could shape the specific requirements for implementing e-learning in different Libyan contexts.

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