

Investigating Sudan University of Science and Technology Students' Attitude towards Using E-Learning in the Midst of COVID -19 Pandemic

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Abstract:

This study aimed at investigating students' attitude towards using e-learning in the midst of COVID -19 pandemic. The study adopted the descriptive method. Questionnaire was used as tool for data collection. The sample of the study comprises (42) students at Sudan university of sciences and technology. The statistical Packages for social sciences (SPSS) was used to analysis the acquired data. The study revealed that: Students' have positive attitude towards using e- learning during COVID 19, students' feel comfortable during online session and students' have awareness towards using e- learning in education. Based on the findings the researcher recommended that: Teachers' should encourage students to interact positively during online session.

Keywords: pandemic, remote education and COVID19.

المستخلص: هدفت هذه الدراسة الي التحقق من موقف الطلاب تجاه التعليم الإلكتروني في خضم جائحة كورونا. اعتمدت الدراسة المنهج الوصفي. تم استخدام الاستبيان كأداة لجمع البيانات. تكونت عينة الدراسة من (42) طالباً وطالبة من جامعة السودان للعلوم والتكنولوجيا. تم استخدام الحزم الإحصائية للعلوم الإجتماعية (SPSS) لتحليل البيانات التي تم جمعها. كشفت الدراسة ان: الطلاب لديهم موقف إيجابي تجاه استخدام التعليم الإلكتروني خلال جائحة كورونا، ويشعر الطلاب بالراحة أثناء جلسة المحاضرة عبر الإنترنت و أن الطلاب لديهم وعي تجاه استخدام التعليم الإلكتروني في التعليم. بناءً علي النتائج، أوصي الباحث بما يلي: يجب علي المعلمين تشجيع الطلاب علي التفاعل بشكل إيجابي أثناء جلسة الدروس عبر الإنترنت.

الكلمات المفتاحية: جائحة، التعليم عن بعد، وفايروس كورونا.

Introduction

COVID-19 pandemic has affected the whole world and influences the various sector for long period of time. It will be difficult for businesses to operate in such an environment where the demand will be low due to the change in the social environment.

The medical authorities in different nations have not found the appropriate way to overcome the impact of this issue. The cases of COVID-19 are breaking the record every day and increasing the problems for the world and raising many questions for

businesses, education, agriculture, import-export and supply chain at the local and global level (Casero-Ripollés, 2020). The virus is attacking people most with a weak immune system or having some critical disease already. The lack of treatment options and the shortage of medical and protective kits are harming the process of maintaining stability in business and other sectors. The coronavirus disease 2019 (COVID-19) pandemic caused significant disruption to teaching and learning activities at all levels.

Faculty, students, institutions, and parents have had to rapidly adapt and adopt measures to make the best use of available resources, tools and teaching strategies.

Statement of the Problem: The educational system in Sudan and other part of world faced many difficulties and challenging due to (COVID-19) pandemic. The spread of COVID-19 have effects on the educational system. Therefore, this research will investigate the students' attitude towards using e- learning during COVID-19 pandemic.

Objective of the Study

This study set out to achieve the following objective:

1- To identify the students' attitude towards using e-learning in the midst of COVID -19 pandemic.

Question of the Study: Considering the study objective, the following research question is put forward:

1- What are the students' attitude towards using e-learning in the midst of COVID -19 pandemic?

Hypothesis of the Study: This study has the following hypothesis:

1- Students' have positive attitude towards using e-learning in the midst of COVID -19 pandemic.

The Significance of the Study: The coronavirus disease (COVID-19) pandemic caused significant disruption to teaching and learning activities at all levels. This study will help teachers to understand students' attitude towards using e- learning during pandemic and offer them plans and interesting ideas that could be used to overcome the difficulties that affect learning and teaching during pandemic.

Literature Review : According to [Harapan and et al \(2020\)](#). In a public health

emergency of international significance the World Health Organization announced the outbreak on 30 January 2020. 49,053 laboratory-confirmed deaths and 1,381 global deaths were recorded as of February 14, 2020. Many countries have been led to adopt various prevention measures because of the perceived risk of disease. In every sector around the world, the influence of the COVID-19 pandemic is shown. It has a severe impact on many things especially on the education industries both in Sudan and around the world. It has put the global lock, which has a very negative effect on the lives of the students. The COVID-19 epidemic has told us that transition is imminent. It has acted as a catalyst to build and choose channels and strategies not seen before the education institutions. The education sector has struggled for a new solution due to the continuation of the crisis and has digitized to eradicate the pandemic threat. [Jena, Pravat \(2020\)](#), state that closing of schools as the result of prevention steps against COVID-19 has had a detrimental effect on schooling, wellbeing and the workings of all interested parties and the educational structures of the country. While the transition to a distance or an online education has now become a component of many educational institutions around the world, a series of variables are expected to contribute to the consistency of the educational institutions, teachers, parents and students in accordance with the changes in their emotional condition. [HyseniDuraku, Linda, Zamira & Hoxha, \(2020\)](#) analyzed and illustrate the issues of pupils, parents and teachers about social exclusion conditions and teachers' and parents' views of remote or online education.

The Impact of COVID -19 Pandemic in Learning Process : A substantial body of evidence identified is dedicated to analysing how the pandemic has impacted or could impact on students' learning outcomes in the short-term, and how this impact can increase educational inequalities or the attainment gap between social groups. The evidence available on the impact on learning of school closures in the context of the Covid-19 pandemic shows that the aggregate effect is not particularly significant, but it is distributed very unequally among social groups. In the case of the Netherlands, [Engzell, Frey and Verhagen \(2020\)](#) found that students from homes with low levels of education suffered learning losses 40% higher than the average student. Nevertheless, the same study also demonstrates that other students' characteristics such as sex, grade or prior performance did not affect the impact on learning during school closures. In the case of the Flemish Community of Belgium, [Maldonado and De Witte \(2020\)](#) show that not only has the level of academic performance decreased as a consequence of the school closures, but also the learning inequalities have increased significantly within and across schools. Using different indicators of inequality (i.e., Gini, ratio 90/10 and entropy), the study shows that learning inequalities grew in the context of the pandemic, and this is mainly explained by a significant performance decrease by those students at the bottom of the performance distribution. Finally, the authors also examined how different socioeconomic factors impacted on learning losses. In this regard, they found that students whose mothers had low levels

of education, and recipients of social benefits, are the most affected by learning losses as a consequence of the pandemic. Another set of studies is oriented towards estimates of the potential impact on learning and inequalities of the 2020 school closures based on the available literature that analyses similar situations (e.g., teachers' strikes, natural disasters, summer holidays, etc.). This includes, for example, the study carried out by the Education Endowment Foundation (2020), whose median estimate forecast predicts that the attainment gap of pupils eligible for Free School Meals (FSM) will increase by 36% in the UK, with a range between 11% and 75%. The study highlights that this increase in the attainment gap will reverse the progress made since 2011 in narrowing performance differences. Another estimation of the learning loss in the UK points out that primary education children from advantaged socioeconomic backgrounds could have lost 24% of a standard deviation in their performance across subjects as a result of the school closures, whilst socially disadvantaged children could have lost 31% of a standard deviation. In the case of secondary education, the learning loss is estimated to be 14% of a standard deviation for socially advantaged students and 28% for the socially disadvantaged ones [Pensiero, Kelly and Bokhove, \(2020\)](#). [Kuhfeld et al. \(2020\)](#) and [Wyse et al. \(2020\)](#), also used the previous literature to estimate the potential effects of school closures in the US. According to [Kuhfeld et al. \(2020\)](#), the expected learning loss will vary between 37% and 63% depending on the scenario and domain of learning considered.

As in the analysis by [Maldonado and De Witte \(2020\)](#), the estimate for the US also predicts higher learning losses among those placed at the bottom of the distribution of performance, as well as an increase in performance inequalities by the socioeconomic status of the students. Likewise, [Wyse et al. \(2020\)](#) estimate that the percentage of students achieving the expected learning benchmarks will be reduced significantly as a result of school closures, particularly in lower grades of primary education. Finally, regarding the long-term impact of Covid-19 on learning, based on schooling economic returns, [Psacharopoulos et al. \(2020\)](#) estimate that in the case of high-income countries the impact of the pandemic on learning will lead to a reduction of 21,158 US dollars in an individual's lifetime earnings, which represents between 6% and 9% of the current GDP of high-income countries.

E- Learning in Education Process during Covid-19 :

One of the main consequences of school and university closures during the Covid-19 pandemic has been the expansion of online learning. Studies in this area have analysed the benefits and challenges of the rapid transition from face-to-face to remote education as a consequence of the unexpected circumstances. Although the number of empirical studies in this area is relatively scarce, this dimension has been included in the review since the available literature demonstrates that it has significantly affected the impact on learning and students' and teachers' experiences during the global health crisis. Studies in this area put a particular emphasis on how teachers have adapted to

the new situation. For instance, [Bergdahl and Nouri \(2020\)](#) examine the experiences of Swedish teachers making the transition to online teaching. One of the topics highlighted by teachers is the lack of school strategy to transition from face-to-face to online teaching or that the strategies were out of date.

Although in general teachers assess the experience as positive regarding students' engagement, they also identified several challenges. For instance, teachers consider that a significant number of students need technical support with online learning technologies, have difficulty understanding written instructions or have parents who cannot support them. Related to this, teachers also considered that online teaching made it difficult to monitor students' learning and to identify those who need additional support. Finally, teachers also consider that online teaching has increased the number of students who display distress from isolation and show a decrease in their motivation and a decline in discipline. In Germany, [König, Jäger-Biela and Glutsch \(2020\)](#) analyse the particular case of early career teachers in the transition towards online teaching during the school closures. The study identified six main challenges faced by early-career educators: maintaining social contact with their students, providing quality online lessons, introducing new learning content, providing task differentiation, providing feedback, and conducting online assessments. The study also explores the factors affecting the mastery of early-career teachers in all these challenges.

The results show that teacher competence, school computer technology, and teacher education are predictors of the capacity of these teachers to maintain social contact with their students, whilst self-efficacy appears to be a determinant factor in providing task differentiation or feedback. Finally, the use of online tutorials was identified as a significant factor to improve their perceived success in providing online lessons. [Bojović et al. \(2020\)](#) assess the implementation of a model enabling schools to rapidly transition from traditional to online learning designed by the University of Belgrade (Serbia). The evaluation showed that teachers were more amenable to the rapid transition to online learning and teaching than students, however, they experienced more difficulties managing new technologies (e.g., Zoom or Moodle). The study also found that, on average, teachers were more satisfied with online courses than students. Nevertheless, the quality of the assessment was more valued by students than teachers. Finally, [Obrad \(2020\)](#) analyses how the professional activity of teachers in Romania was affected by the rapid adoption of online teaching during the pandemic. In this regard, job constraints and stress significantly affected the capacity of teachers to engage with online teaching. Interestingly, the study also demonstrates that teachers' stress caused by the technological challenges of online learning can be significantly reduced by providing them with proper organisational and professional support. Those educators that perceived they had received a high level of support from their organisations were more resilient to the challenges posed by the rapid transition to online teaching.

Teachers' Working Conditions during Covid-19

UNESCO identified confusion and stress for teachers as one of the main adverse consequences of school closures during the pandemic. A number of studies have analysed the impact on teachers' experiences during school closures during the first phases of the pandemic. The first approach to studying teachers' working conditions during the pandemic are studies that analyse educators' personal experiences. Based on teacher interviews, [Reich et al. \(2020\)](#) found that maintaining students' motivation in an online learning environment has been one of the main challenges for US teachers during school closures. This concern was combined with a significant loss of self-perceived efficacy and professional identity, as well as the perception of burnout. The analysis also shows that increasing inequalities among students have been particularly worrying and a cause of distress for teachers. [Kraft and Simon \(2020\)](#) found that female teachers are more likely to report that they have struggled to balance their professional duties with other responsibilities, around 40% of teachers consider caretaking responsibilities for children or dependent adults have made it difficult to develop their professional tasks and more experienced teachers were more likely to feel uncomfortable teaching online. Teachers also reported that the socioeconomic characteristics of their students and schools impacted on their capacity to guarantee student engagement with online learning and their access to technological tools. This was particularly challenging for teachers working in schools in which most of the students are black and from low-income backgrounds.

Hamilton, Kaufman and Diliberti (2020) also provide relevant insight into teachers' experiences during the pandemic and school closures based on a survey of a representative sample of preschool, primary and secondary teachers in the US. The study found that most of the teachers monitored the completion of learning activities, but also, most of them did not provide feedback to students. Furthermore, only 12% of teachers report covering all the curricular content that they would have covered in a regular academic year.

This study adopted descriptive method. The sample of this study includes (42) respondents from Sudan University of Sciences and Technology students'. The researcher used a questionnaire as the main instrument for data collection. The questionnaire was designed to the best techniques, it assisted in building a base on a complete understanding of the study problem. The data was collected and analysed using Statistical Package for the Social Sciences (SPSS) and the results displayed for the discussion process.

Research Method

Data Analysis

Table (1) Gender.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Male	17	40.5%	40.5%	40.5
Female	25	59.5%	59.5%	%59.5
Total	42	100%	100%	%100

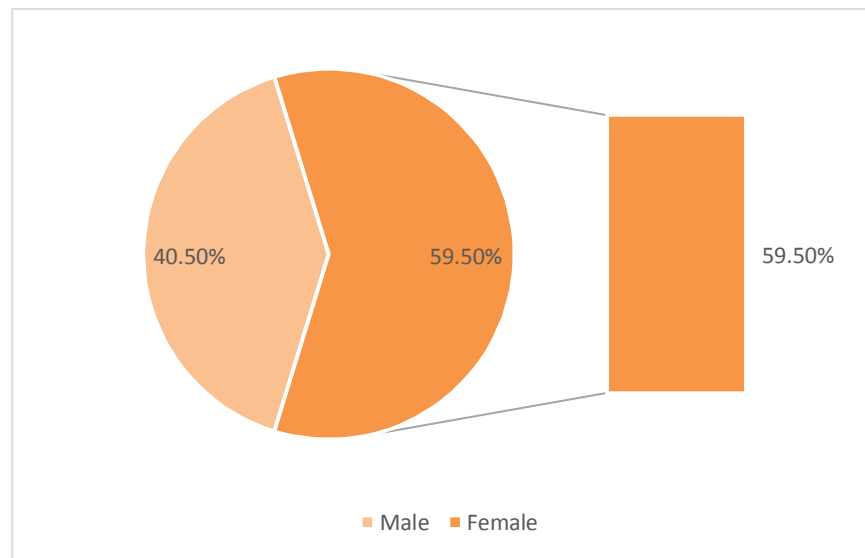


Figure (1) Gender.

From table (1) above and figure (1), it is clear that (40.5%) of the participants were male while (59.5%) were female, this show that most of participants were female.

Table (2) I have a positive attitude towards e- learning during COVID 19.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	31	73.8%	73.8%	73.8%
Neutral	1	2.4%	2.4%	76.2%
No	10	23.8%	23.8%	%23.8
Total	42	100%	100%	%100

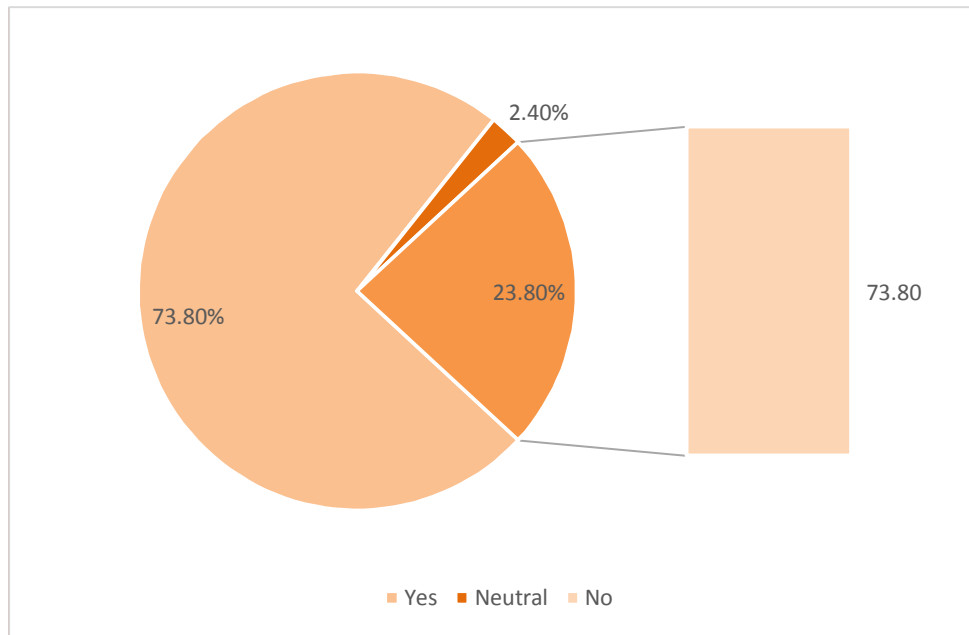


Figure (2) I have a positive attitude towards e- learning during COVID 19. From the table (2) and figure(2) above it is observed that the participants' response to the "statement **"I have a positive attitude towards e- learning during COVID 19"** was **"yes"**, the response "yes" was chosen by (73.8%%), while the response **"no"** was chosen by (23.8%), and the response **"neutral"** was chosen by (2.4%) of the total responses. It is clear that most of students were agree with the statement.

Table (3) I find perfect environment to study from home.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	23	54.8%	54.8%	54.8%
Neutral	6	14.2%	14.2%	14.2%
No	13	31%	31%	31%
Total	42	100%	100%	100%

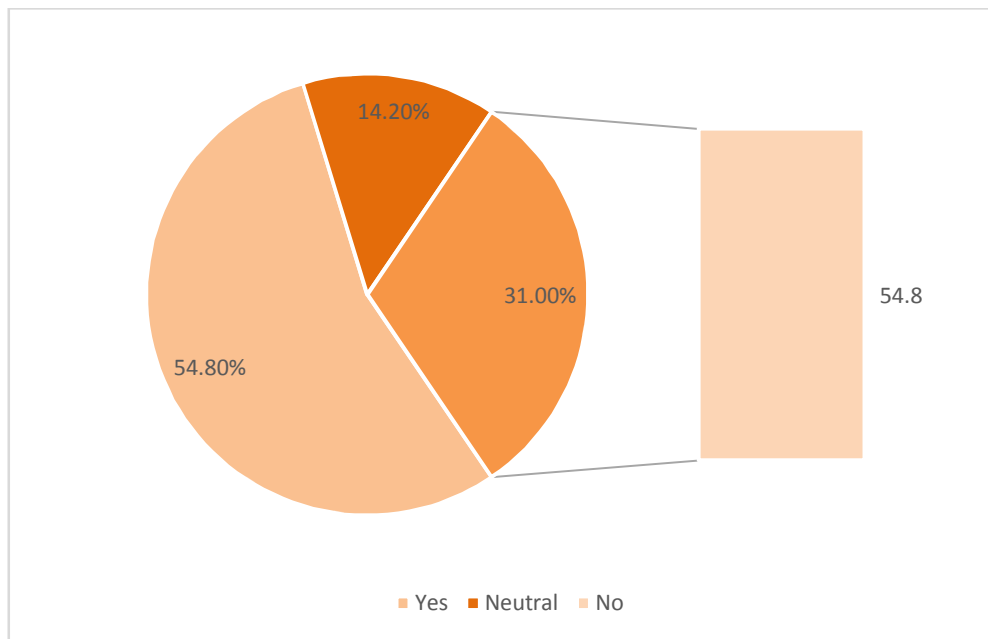


Figure (3) I find perfect environment to study from home.

From the table (3) and figure (3) it is observed that the participants' response to the statement **"I find perfect environment to study from home"**. Was "yes", the response "yes" was chosen by (54.8%), while the response "no" was chosen by (31%), and the response "neutral" was chosen by (14.2%) of the total responses. Most of participant were agree with the statement.

Table (4) I feel comfortable during online session.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	24	57.1%	57.1%	57.1%
Neutral	4	9.5%	9.5%	9.5%
No	14	33.4%	33.4%	33.4%
Total	42	100%	100%	100%

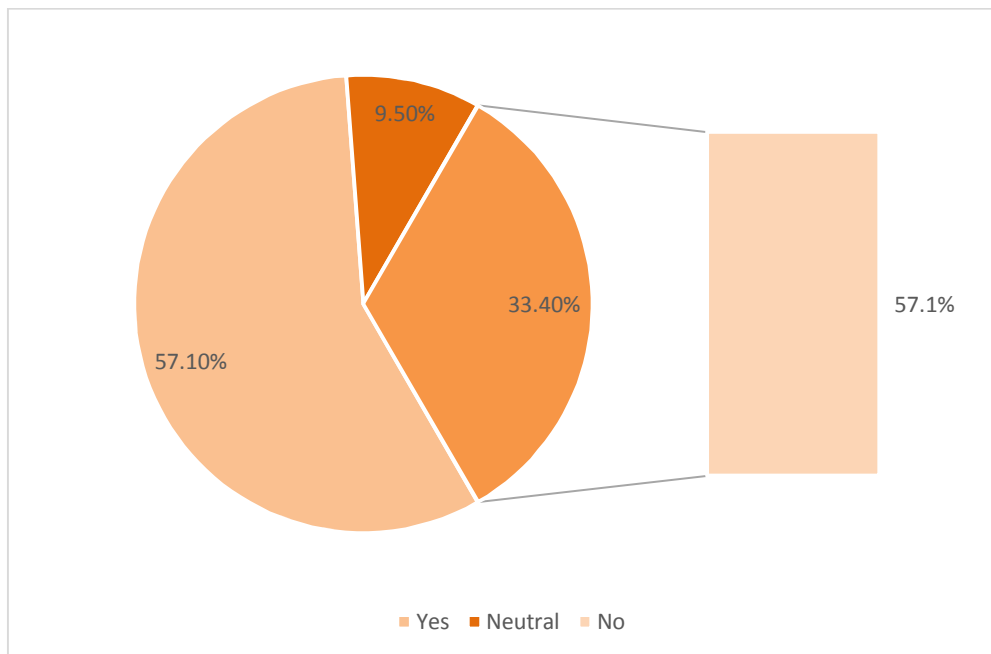


Figure (4) I feel comfortable during online session.

With reference to the table (4) and figure (4) it is noticed that the participants' response to the statement "**I feel comfortable during online session.**" was "**yes**", the response "**yes**" was chosen by (57.1%), while the response "**no**" was chosen by (33.4%), and the response "**neutral**" was chosen by (9.5) of the total response.

Table (5) I found difficulty in accessing network.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	29	69%	69%	69%
Neutral	5	12%	12%	12%
No	8	19%	19%	19%
Total	42	100%	100%	100%

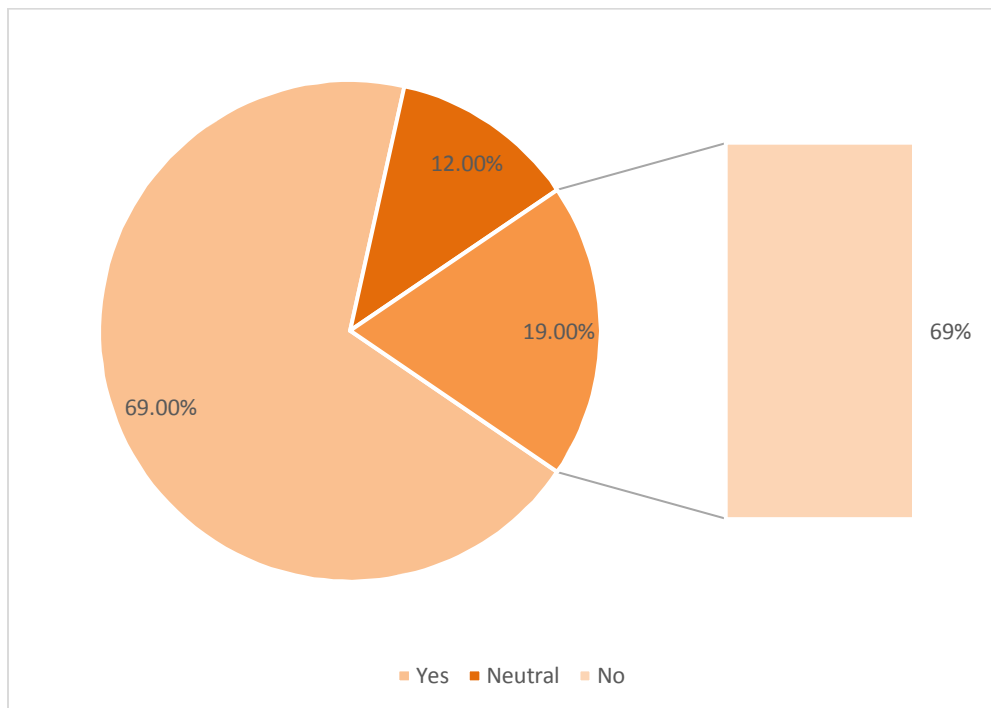


Figure (5) I found difficulty in accessing network.

From the table (5) and figure (5) it is noticed that the participants' response to the statement "I found difficulty in accessing network " was "yes", the response "yes" was chosen by (69%), while the response "no" was chosen by (19%), and the response "neutral" was chosen by (12%) of the total responses.

Table (6) I interact positively with teacher during online session.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	13	31%	31%	31%
Neutral	8	19%	19%	19%
No	21	50%	50%	50%
Total	42	100%	100%	100%

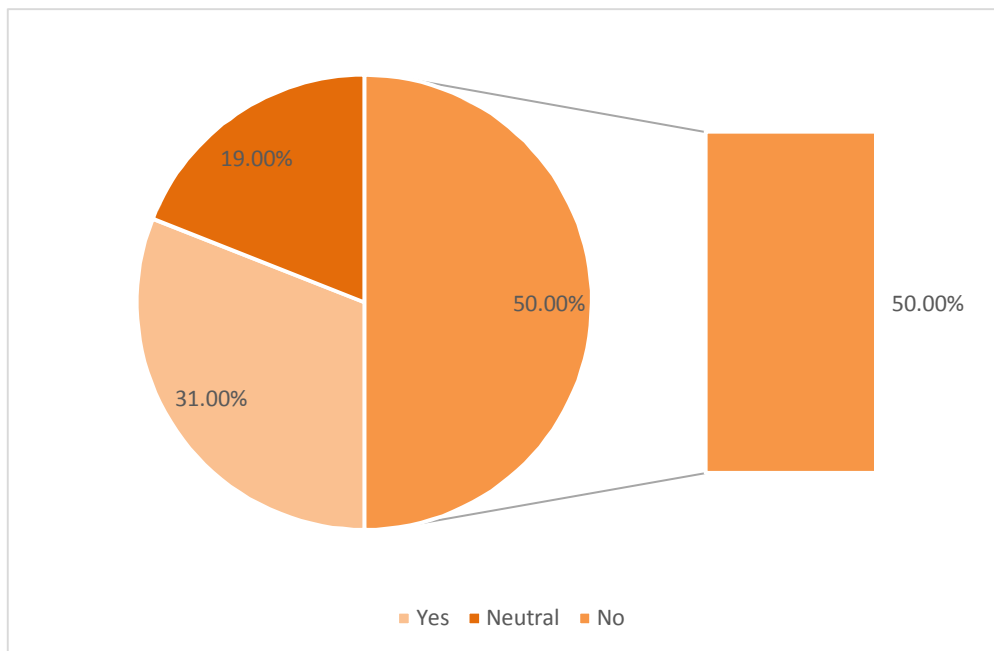


Figure (6) I interact positively with teacher during online session.

From the table(6) and figure(6) the participants' response to the statement "**I interact positively with teacher during online session** " was "**no**", the response "**no**" was chosen by (50%), while the response "**yes**" was chosen by (31%), and the response "**neutral**" was chosen by (19%) of the total responses. Most of respondent to the statement were no.

Table (7) I feel isolated during e- learning session.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	25	59.5%	59.5%	59.5%
Neutral	8	19%	19%	19%
No	9	21.5%	21.5%	21.5%
Total	42	100%	100%	100%

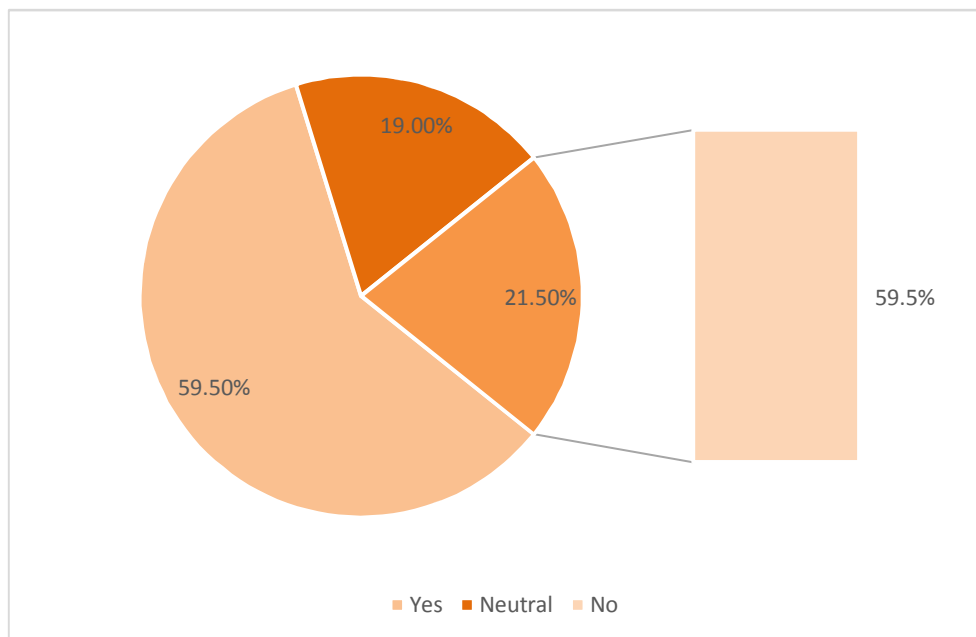


Figure (7) I feel isolated during e- learning session.

reference to the table (7) and figure (7) it is noticed that the participants' response to the statement "**I feel isolated during e- learning session**" was "**yes**", the response "yes" was chosen by (59.5%), while the response "**no**" was chosen by (21.5%), and the response "**neutral**" was chosen by (19%) of the total responses. From students' respondents it is clear that most of student feel isolated

Table (8) E- learning increased my responsibility.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	29	68%	68%	68%
Neutral	9	21.5%	21.5%	21.5%
No	4	9.5%	9.5%	9.5%
Total	42	100%	100%	100%

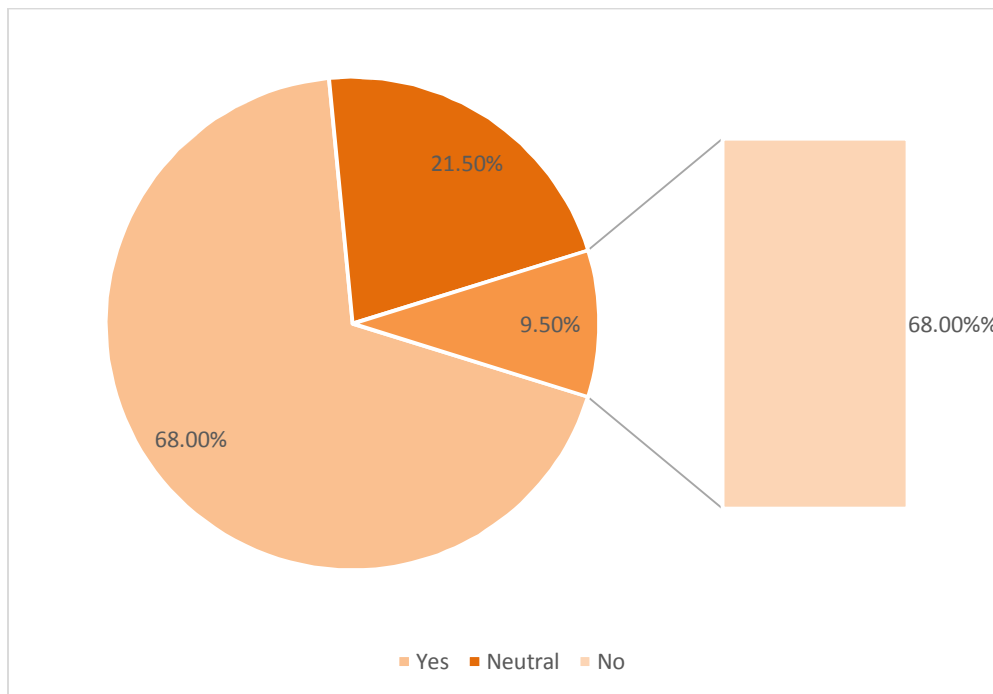


Figure (8) E- learning increased my responsibility.

From the table (8) and figure (8) it is observed that the participants' response to the statement "E- learning increased my responsibility." was "yes", the response "yes" was chosen by (68%), while the response "no" was chosen by (21%), and the response "neutral" was chosen by (21.5%) of the total responses. Highest number of participants' chose yes.

Table (9) E- learning reduce my stress.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	22	52.4%	52.4%	%52.4
Neutral	10	23.8%	%23.8	%23.8
No	10	23.8%	%23.8	%23.8
Total	42	100%	100%	100%

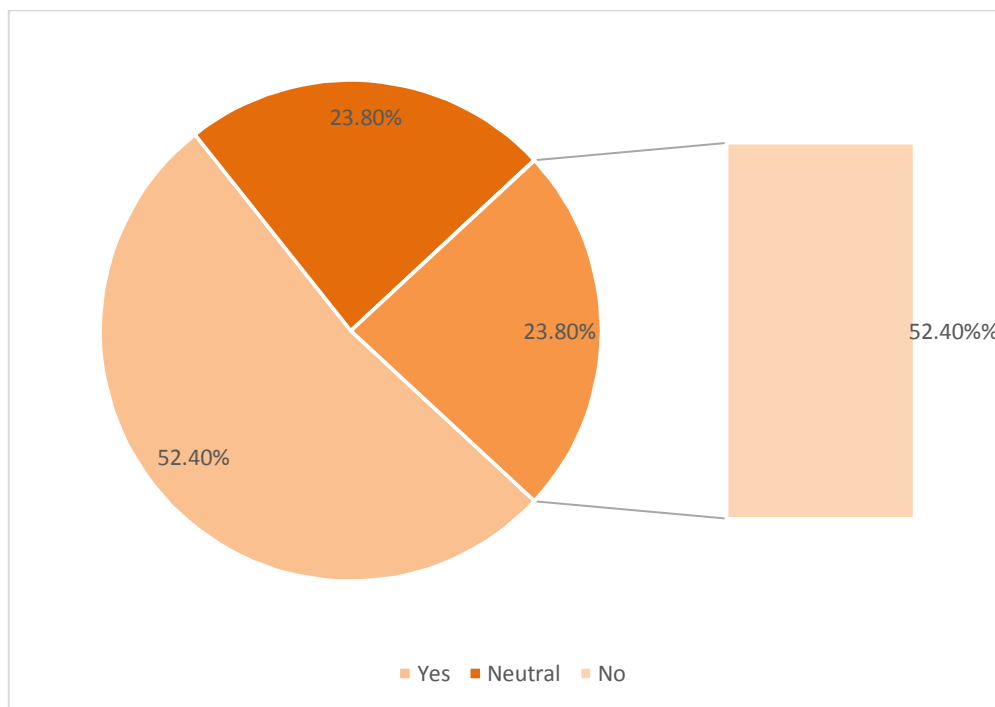


Figure (9) E- learning reduce my stress.

From the table (9) and figure (9) it is noticed that the participants' response to the statement "E- learning reduce my stress". Was "yes", the response "yes" was chosen by (52%), while the response was "no" was chosen by (23.8%), and the response "neutral" was chosen by (23.8%) of the total responses. The highest respondent is yes.

Table (10) Using e- learning rise my confidence.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	23	54.8%	54.8%	54.8%
Neutral	10	23.8%	23.8%	23.8%
No	9	21.4%	21.4%	21.4%
Total	42	100%	100%	100%

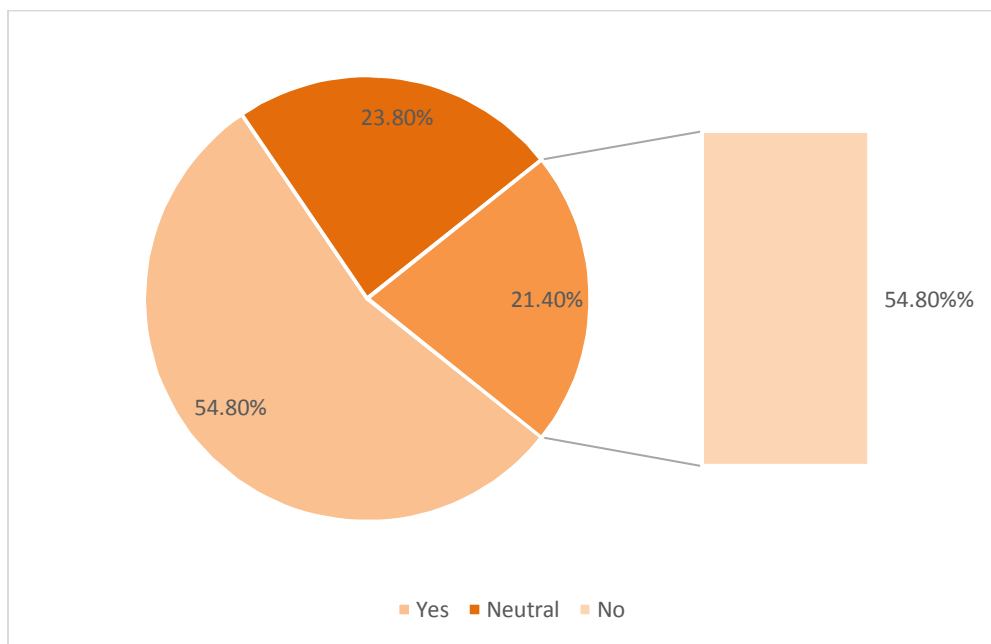


Figure (10) Using e- learning rise my confidence.

With reference to the table(10) and figure (10) it is observed that the participants' response to the statement “**Using e- learning rise my confidence**” was "yes", the response "yes" was chosen by (54.8%), while the response "no" was chosen by (21.4%), and the response "neutral" was chosen by (23.8%) of the total responses. Most of participant were yes.

Table (11) I have awareness towards using e- learning in education.

Phrase	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	24	57.1%	57.1%	57.1%
Neutral	11	26.2%	26.2%	26.2%
No	7	16.7%	16.7%	16.7%
Total	42	100%	100%	100%

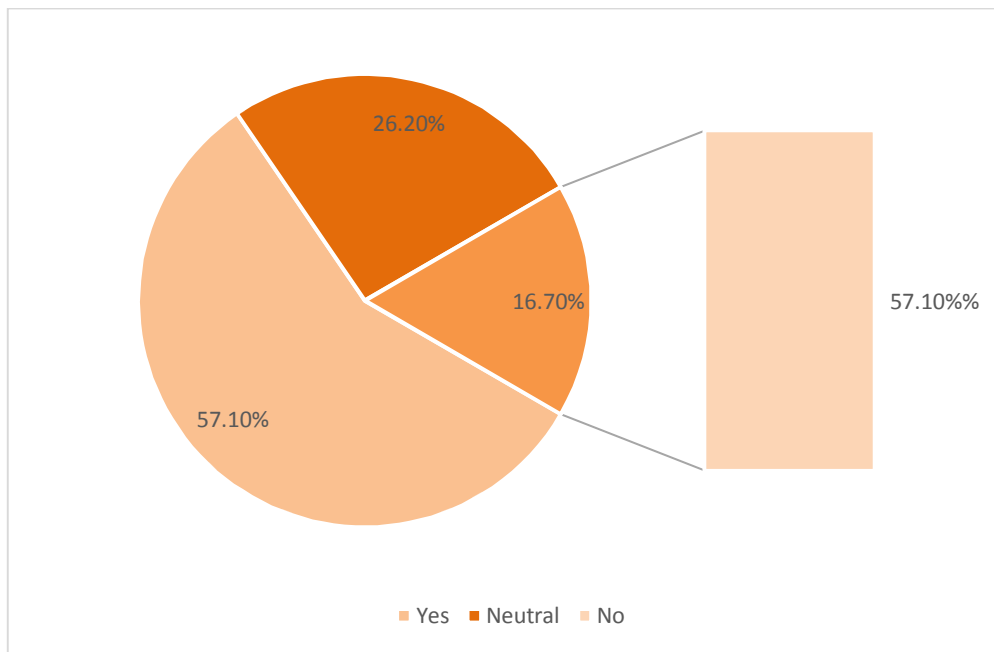


Figure (11) I have awareness towards using e- learning in education.

With reference to the table (11) and figure (11) it is noticed that the participants' response to the statement "**I have awareness towards using e- learning in education**" was "yes", the response "yes" was chosen by (57%), while the response "no" was chosen by (16.2%), and the response "neutral" was chosen by (26.%) of the total responses. The highest respondent is yes.

Table (12) descriptive statistics.

Phrase	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Gender	42	1.00	1.00	2.00	67.00	1.5952	.07666	.49680	.247
I have a positive attitude towards e- learning during COVID 19.	42	2.00	1.00	3.00	63.00	1.5000	.13309	.86250	.744
I find perfect environment to study from home.	42	2.00	1.00	3.00	74.00	1.7619	.13973	.90553	.820
I feel comfortable during online study.	42	2.00	1.00	3.00	74.00	1.7619	.14382	.93207	.869
I found difficulty in accessing network.	42	2.00	1.00	3.00	63.00	1.5000	.12405	.80395	.646
I interact positively with teacher during online session.	42	30.00	1.00	31.00	122.00	2.9048	.69827	4.52532	20.479
I feel isolated during e- learning session.	42	2.00	1.00	3.00	68.00	1.6190	.12730	.82499	.681
E- Learning increased my responsibility.	42	20.00	1.00	21.00	79.00	1.8810	.47736	3.09368	9.571
E- Learning reduce my stress.	42	10.00	1.00	11.00	81.00	1.9286	.25592	1.65858	2.751
Using e- learning rise my confidence.	42	2.00	1.00	3.00	70.00	1.6667	.12599	.81650	.667
I have awareness towards using e- learning in education.	42	2.00	1.00	3.00	67.00	1.5952	.11835	.76699	.588
Valid N (listwise)	42								

The above table represent main, maxim, and stander deviation.

Discussion of Results

The hypothesis of this study states: Students' have positive attitude towards using e-learning in the midst of COVID - 19 pandemic. In the statement of "I have a positive attitude towards e- learning during COVIED 19" the majority of the sample which is about (73.8%) choose the option "yes", and (23.8%) of them response by "no". This proves that the

EFL students are highly interested in learning through online learning. In the statement "I feel comfortable during online session". The highest response is "yes" was chosen by (57.1%) while the response "no" was chosen by (33.4%). This affirms that students feel comfortable in online session. In the statement "I found difficulty in accessing network" the highest response is "yes".

This confirms that students face difficulties in accessing internet. The statement number (2, 4, 6, 7, 8, 9 and 10) most of students have a positive responses towards statement.

Findings

In the light of the results of the questionnaire and discussion, the following findings were revealed:

- Students' have positive attitude towards using e- learning during COVID 19.
- Students' feel comfortable during online session.
- Students' have awareness towards using e- learning in education.
- E- Learning reduce students stress.

Conclusion

The general respondent of the students to the questionnaire, shown that students have high abilities in interacting in e-learning session, but student faced many challenge when attending online session, this is included access network and high cost of devices and teachers ignore students during the session and also electric power is not constant.

Recommendations

In light of the findings, the researcher recommend the followings:

- Teachers' should encourage students to interact positively during online session.
- Access to network should be available for students.

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