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**| RESEARCH ARTICLE**

## **A Critical Study on Pandemic Online Teaching Challenges and Its Impact on Teaching Learning Methods**

**Dr. Ambreen Khanam**

*Assistant Professor Faculty of Arts and Humanities, Jazan University Jazan, Saudi Arabia*

**Corresponding Author:** Dr. Ambreen Khanam, **E-mail:** [akabdulhameed@jazanu.edu.sa](mailto:akabdulhameed@jazanu.edu.sa)

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**| ABSTRACT**

The covid-19 pandemic has adversely affected the economy, business and human lifestyle, which proved to be very destructive in the decade years. Worldwide, many countries have implemented control measures like temporary suspension of schools, offices, and stores and social segregation between the countries. In this pandemic condition, most universities, schools and colleges started to implement digitalized learning processes globally. This study investigated the online teaching challenges and their impact on teaching-learning methods during the covid-19 pandemic. This research explored the various aspects and dimensions of online education teaching and learning practices which are prevalent in education sectors. The study is conclusive, and it provided specific suggestions, recommendations and conclusions for improving online TLP (teaching-learning practices) in higher education sectors. The primary data was collected from 100 teachers and 100 students in some selected colleges through a structured questionnaire. The secondary data was collected from various published sources like journals, magazines and articles from 2019 to till date. Further, the collected data has been processed in IBM SPSS software for statistical analysis and testing of the hypothesis; based on the analysis, the ANOVA, chi-square, standard deviation, mean, frequency distribution and graphs were plotted in the analysis part. Based on the analysis, the result of the study indicated that the majority of the respondents are adapted to online learning practices, and they motivate themselves to attend online classes during the pandemic period. The survey of the study indicated that there is a positive impact on students' perception towards online learning systems and the adaption practices in the higher education sector. The quality of online learning depends upon the teaching pedagogy, innovative teaching methodology, collaborative learning and motivating students during the online learning process. The teaching faculties should motivate the students through their effective teaching method to engage the students in entire online classes. The teachers should appreciate and encourage the students during online learning to motivate and engage themselves in attending the classes. The teachers need to improve their teaching pedagogy during their online classes to engage and motivate the students during this pandemic period.

**| KEYWORDS**

E-learning, covid-19, online teaching challenges, teaching learning methods, teacher's attitude

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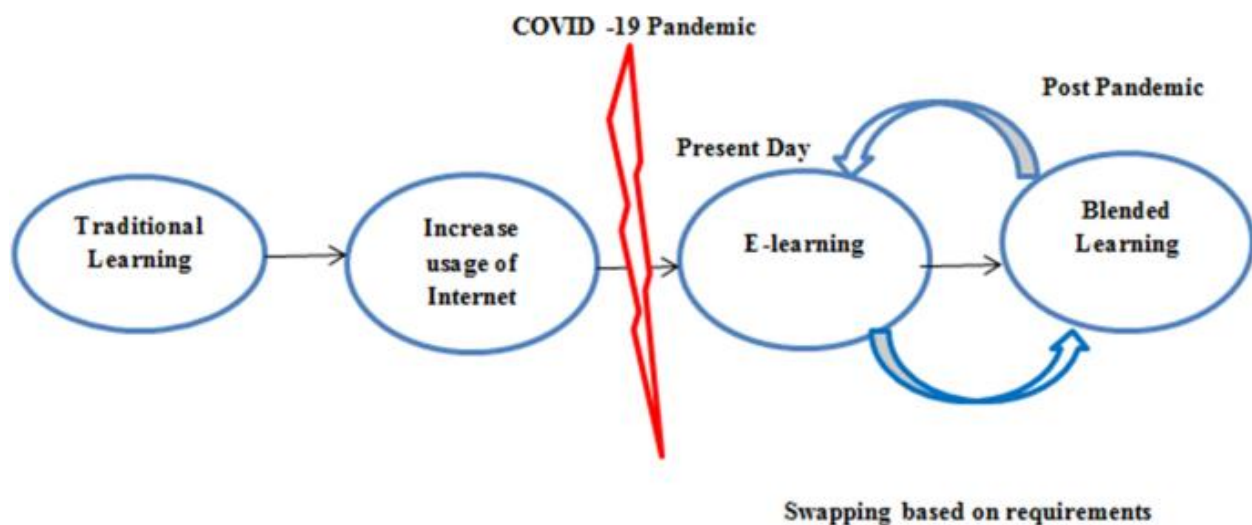
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### **1. Introduction**

In the decade year, the coronavirus (covid-19) disease was spread all over the world, and it was declared a pandemic by WHO (world health organization). Education is crucial in the civilization of human life. All the discoveries, inventories and innovations by humans are begun with the education process. Education is the events and things a person experienced and learned by being taught well. Many countries are following the traditional learning system only. Worldwide, many countries are implemented control measures like temporary suspension of schools, offices, and stores and social segregation between the countries. During this pandemic, most universities, schools and colleges started implementing digitalized learning processes globally. A pandemonium happened across the globe, and its affected human life and social, economic and political activities (Barzani, 2021). World Education

has been disrupted, and it affected socioeconomic performances, contributions, development and outcome. There is a need for the global education system to change and adapt to new standards and forms of education. The teaching-learning systems were transformed into online education with a technology interface system and lesser human interactions in the education process. These sweeping changes led to several problems, issues and challenges in the education system. There is a discontinuity in the prevailing education system and practices in the online learning process. Saudi Arabia, with its population and demography, encounters special issues and problems in educational practices. The traditional classroom mode of education has been replaced with new methods and systems (Kundu & Bej, 2021a). As this is a transitory period, it has unknown dimensions and problems to be sorted out with teachers and students. As there are more issues which are prevalent with teaching-learning practices in online educational systems, there is a need to study, evaluate and critically examine these dimensions and issues. As there are lesser empirical studies which have focused on online educational systems, practices and their related dimensions in Saudi Arabian educational system in the post-covid-19 scenario, this research is an empirical investigation in this direction (Kundu & Bej, 2021b). This research is empirical and quantitative in its approach. The study aims to evaluate the online teaching-learning practices and systems which are prevalent in selected colleges in Saudi Arabia in the post-Covid scenario. Primary data for the study would be collected from 100 teachers and 100 students from selected colleges in Saudi Arabia by administering a Questionnaire. The collected data was analyzed using SPSS software to test the significance of study with frequency distribution table and chart, correlation, ANOVA and chi-square. The study was provided suggestions, recommendations and conclusions along with discussion of existing studies to improve online teaching learning practices. The student's perception and teachers attitudes were evaluated in this study.



**Figure 1: the emergence of the online learning system**

## 2. Literature Review

### 2.1 E-learning during covid-19 pandemic

Educational institutes across the world were closed due to covid-19 pandemic, which threatens the world's economic system and educational systems majorly. Most of the educational system had moved to an e-learning system to continue with academic activities. Moreover, the questions on preparedness for online learning, the effectiveness of online learning and the perception of online learning from the student's point of view are still not clear, particularly in developing countries like Saudi Arabia, which are facing many challenges regarding the online education system. Similarly, (Muthuprasad, Aiswarya, Aditya, & Jha, 2021) investigated students' perceptions and preferences towards e-learning systems with an online survey of 307 students in colleges in Saudi Arabia. The study's result indicated that most respondents (70%) are willing to attend online classes due to managing the pandemic situation. The majority of students are using a smartphone as an online learning tool in Saudi Arabia. Based on the content analysis, it is proved that asking quizzes and questions regards to their subject will increase the effectiveness of learning through the e-learning system; Even though it is helpful in the pandemic, many of the rural area students facing technical issues in attending the online learning due to poor network connections. However, the study concluded that there is a need to change the online education system in an effective way of the education system which is followed by developed countries like the USA. Moreover, (Radha, Mahalakshmi, Kumar, & Saravanakumar, 2020) stated that the e-learning system had become a mandatory system for all educational institutions like colleges, schools and universities due to covid-19 pandemic worldwide. These deadly conditions were flipped out of the offline education process. Hence the study investigates the student's attitudes towards online learning systems in the higher education sector. Primary data has been collected from the school student community in online platforms through online-based questionnaires. Based on that primary data, the study analyzed the effectiveness of the e-learning

system among higher education students worldwide. A stratified random sampling method was adopted in this study, and the selected sample size is 175 students across the world. Finally, the study concluded that the e-learning system has become the modern education system and flipped out of the traditional education system due to covid-19 pandemic worldwide (Pal & Vanijja, 2020) & (Ananga, 2020). Likely, (Rajhans, Memon, Patil, & Goyal, 2020) aimed to explore the impeding and enabling factors of optometry education in Saudi Arabia. It is discussed how the optometry education system has responded to covid-19 disruptions by conducting a survey in 2020. A cross-sectional survey has been conducted to find changes and adaptation practices of the optometry education system in Saudi Arabia during the pandemic period. Finally, the findings of the study revealed that the majority of optometry institutions were moved to an online education system, and they have done all activities through online learning platforms.

### ***2.2 Student's perception and teacher's attitude towards online learning***

During covid-19 pandemic, the economic system and educational institutions were affected rapidly all over the world. The temporary shutdown of educational sectors impacted students' learning skills and caused massive disruption in the educational sector. Moreover, (Aliyyah et al., 2020) explored the perception of primary school teachers on the e-learning system during the covid-19 pandemic in Indonesia. Data has been collected from 67 class teachers in primary schools through online surveys and semi-structured interviews. Qualitative thematic analysis has been done, and the results were found in four major areas like e-learning challenges, motivation of teachers, instructional strategies and support. Finally, the study explored that online collaborative learning between teachers and parents will positively impact students' success in the online education system. Consequently, (Daniel, 2020) has observed that during these pandemic times, online educational teaching and learning methods could be the most viable option. Schools and colleges are scrambling towards effective teaching-learning methods during this covid-19 pandemic. There is a need to test whether online educational systems and practices could be more effective in the transfer of knowledge. In addition, (Mseleku, 2020) has stated the factors which can enable success in online teaching and learning methods. There is a need for well-structured course content and materials which could effectively motivate students towards learning and career development. There is also a need to create online educational communities which can effectively interact, communicate and pursue knowledge. Technology and its applications must be effectively used for online interactions and the transfer of knowledge with effective teaching-learning practices.

The unprecedented education system was brought about by the covid-19 pandemic, which led to the evaluation of digital learning as an ineluctable tool for the learning and training process. Techno interface has ensured the continuation of global education systems with lesser interactions, emotions and engagement. There is a discontinuity in the prevailing education systems and practices, with a shift to online education and practices. Likely, (Dhingra, Pasricha, Sthapak, & Bhatnagar, 2021) deliberated on the student's perception of e-learning and motivation towards online classes with respect to network connections and accessibility due to covid-19 pandemic. Since online teaching is essential for students centered learning approach, the teaching methodology of teachers in online education will motivate the students to engage in their studies. In this study, undergraduate students were selected from different colleges in Saudi Arabia for qualitative and quantitative assessment of valid data. The data was collected through an online survey method from the respondents. The result of the study revealed that the majority of the students were motivated to learn through digital learning, but external factors like internet accessibility and family circumstances affected their e-learning system and demotivated to learn through online digital learning. Furthermore, (Adnan & Anwar, 2020) observed that Covid has affected the educational systems of the world, and it has provided major risk in its continuity and reach. There is a need for empirical research studies which has to be conducted on the impact of Covid on educational systems and practices in selected colleges in Saudi Arabia. There is also an inherent need to study and evaluate online teaching challenges and their impact on Teaching learning methods during the covid-19 pandemic in Saudi Arabian colleges. As research studies have not been attempted on these dimensions and issues, this research is an attempt in this direction (Verma, Panigrahi, & Alok, 2021).

### ***2.3 Benefits and challenges of online education practices***

World Education has been disrupted, and it has affected socioeconomic development and contributions, productivity, performance & output. There is a need for global education systems to adapt and modify to the new standards and forms of education. The mode of teaching-learning has transformed into online education, with technology interface ensuring lesser direct human interactions. These sweeping changes have really put education systems into various challenges, problems, issues and dimensions. In a similar way (Igbokwe, Okeke-James, Anyanwu, & Eli-Chukwu, 2020). Similarly, (Alqahtani & Rajkhan, 2020) has identified the critical success factors for online learning during the covid-19 pandemic using TOPSIS (a technique for order preference by similarity to ideal solution) and multi-criteria analytic hierarchy process (AHP) techniques to enhance the effectiveness of online education system. Data has been collected from 69 managers of different educational institutions through the online interview method. Based on the collected data and analysis process, the study revealed some major influential factors of online learning, such as technology management, increased student awareness of digital learning, support from management, demanding high-level information technology from the instructors and the teaching methodology of faculties. These results demonstrated that readiness for online learning execution played a significant role in boosting the learning skill of students during the covid-19

disruptions. Further, (Almaiah, Al-Khasawneh, & Althunibat, 2020) have explored the critical challenges of the current e-learning system and investigated the major factors which support the usage of online learning systems during the pandemic period. This study collected data from respondents through the interview method and used thematic analysis with NVivo software. The interview was conducted with 30 students and experts in the online learning systems at Jazan University KSA. Finally, the study suggested that developing new strategies by policymakers, developers and designers will increase the effectiveness of online education during the pandemic period (Coman, Țiru, Meseșan-Schmitz, Stanciu, & Bularca, 2020).

### **2.4 Research gap**

This section described the several limitations of existing research done in online learning practices during the covid-19 pandemic. Consequently, (Ferri, Grifoni, & Guzzo, 2020) conducted research on emergency remote teaching using online teaching. The major issues which were identified were technological, social and pedagogical challenges that prevail in online teaching and learning systems. There is an inherent need to study social, pedagogical and social challenges which prevail in online teaching and learning methods in Saudi Arabian educational systems and practices during the post-covid-19 pandemic. Accordingly, (Radha et al., 2020) failed to analyse the challenges and issues of E-learning. The data has been gathered from the student's view only; it is necessary to analyse the effectiveness of E-learning between faculties and students also. In addition, (Jena, 2020) observed that Covid has affected the educational systems of the world, and it has provided major risk in its continuity and reach. There is a need for empirical research studies which has to be conducted on the impact of Covid on educational systems and practices in colleges. There is also an inherent need to study and evaluate online teaching challenges and their impact on teaching-learning methods during the covid-19 pandemic in higher education sectors. As research studies have not been attempted on these dimensions and issues, this research is an attempt in this direction. Some limitations should be improved to implement effective E-learning during the pandemic period and post covid-19 pandemic. Our study is proposed to overcome the limitations of the existing studies and find out the issues and challenges of online learning during the pandemic period and provide suggestions for future implications.

## **3. Research Methodology**

The research methodology is a part of the study that deals with how the research works and is done scientifically. The study's methodology starts with the origin of the research idea until the data analysis is done in the research work. The following methodologies are adapted in this study.

### **3.1 Research questions**

What are the challenges of online education during the pandemic?

Has the student's perception changed towards learning due to online teaching and learning methods?

Has the teachers' approach to teaching changed due to online teaching and learning methods?

Has online technology increased efficiency in teaching-learning methods?

Does students' knowledge get enhanced better with online teaching and learning methods?

Has the learning engagement improved with online teaching and learning methods?

### **3.2 Objectives of the study**

#### **3.2.1 Primary objectives**

- To evaluate and explore the online teaching challenges and their impact on teaching-learning methods during the covid-19 pandemic

#### **3.2.2 Specific objectives**

- To investigate student's perception towards learning due to online teaching and learning methods
- To determine the teacher's attitude towards online teaching and learning methods
- To investigate the enhancement of students' knowledge due to online teaching and learning methods
- To find out the role of technology in improving online teaching and learning methods for teachers.

### **3.3 Research design**

This research was descriptive and applied research carried out in Saudi Arabia. This study applied empirical and quantitative data analysis. This study investigated the online teaching challenges and their impact on teaching-learning methods during the covid-19 pandemic in selected colleges at Jazan University. This research explored the various aspects and dimensions of online education teaching and learning practices which are prevalent in Saudi Arabian colleges. The study is conclusive, and it provided specific suggestions, recommendations and conclusions for improving online TLP (teaching-learning practices) in the higher education sector. The primary data was collected from 50 teachers and 50 students from the Academic campus through a structured questionnaire. The secondary data was collected from various published sources like journals, magazines and articles

from 2019 to till date. Further, the collected data has been processed in IBM SPSS software for statistical analysis and testing of the hypothesis; based on the analysis, the ANOVA, chi-square, standard deviation, mean, frequency distribution and graphs were plotted in the analysis part.

### ***3.4 Sample size and technique***

The selected sample size for the study is 50 teachers and 50 students from selected colleges in Saudi Arabia. The convenience sampling method was adopted in this study for the researchers' convenience in collecting data. The study doesn't use any sample size calculation method due to inconvenience in the collection of data during this covid-19 pandemic.

### ***3.5 Data collection method***

An online self-reported questionnaire has been developed for 50 students and 50 teachers; it contains 25 questions, including three sections. The first section contains the demographic details of the respondents. The second section consists of online teaching-related questions, and the third section contains the student's perceptions and teachers' attitudes towards online learning with five-point Likert scale questions. The primary data has been collected from the respondents through the online survey method, and the secondary data has been collected from various published sources like articles, magazines, journals and newspapers.

### ***3.6 Data analysis method***

The collected data has been analyzed through the IBM SPSS package with a frequency distribution table and graph, a measure of central tendency, standard deviation, chi-square, ANOVA, regression and correlation analysis. The hypothesis was tested in this section to get the significant value of variables that either have a positive or negative impact on this study. It consists of three stages of analysis to find the results of the study.

#### ***3.6.1 Stage -1***

The frequency distribution table and graph for the demographic details of respondents have been analyzed in stage 1.

#### ***3.6.2 Stage -2***

The descriptive statistical analysis like mean, standard deviation and cross tabulation was analyzed in this stage.

#### ***3.6.3 Stage -3***

The testing hypothesis using ANOVA, Correlation and Chi-square analysis was made in stage 3.

### ***3.7 Hypothesis of the study***

H1: Students' perception has changed positively towards learning due to online teaching and learning methods.

H2: There are challenges and problems involved in students' perception towards learning due to online teaching and learning methods.

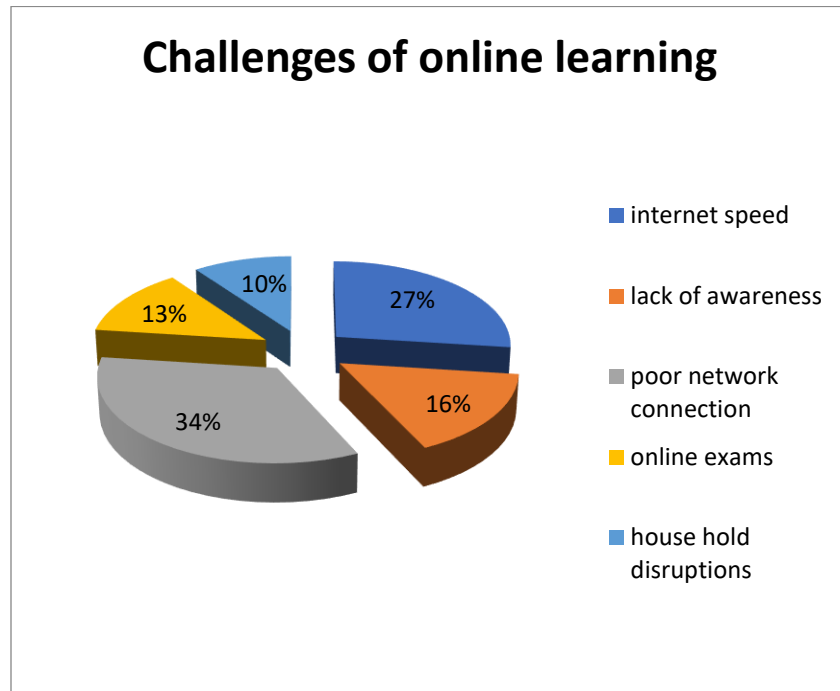
H3: The teacher's attitude towards online teaching and learning methods positively impacted students' motivation during online classes.

H4: Students feel more engaged and committed due to the effectiveness of online teaching and learning method.

## ***4. Result and Discussion***

The result of the study was distributed with a frequency distribution table and graph, and statistical analysis was done to test the significant relationship between the variables. The impact of online learning, challenges and benefits, student's perception and teacher's attitudes toward e-learning are the important factor for the analysis. The collected data through questionnaires from the students and teachers were analyzed in this section, and finally, the study discussed the result with existing studies conducted in this area.

#### 4.1 Frequency distribution analysis



**Figure 2: Challenge of online learning**

The challenges of online learning were analyzed by 200 students and teachers who are pursuing their studies and work at Jazan university. The majority of the respondents (34%) faced poor network connection during online classes, especially in rural areas. 27% of the respondents struggled with the slow working of the internet. 16% of the respondents lack awareness of online learning and smartphone usage for attending online education. 13% of the respondents stated that online exams are the challenges in the online learning system. The lowest percentage of respondents (10%) stated that household disruptions are the challenges for the online education system.

**Table 4.1: Students are comfortable with online learning**

Variables		Frequency	Percent
Valid	strongly agree	52	26.0
	agree	76	38.0
	neutral	28	14.0
	disagree	20	10.0
	strongly disagree	24	12.0
	Total	200	100.0

It is inferred from the above table out of 200 respondents, 76 of them agreed with the statement "students are comfortable with online learning" during the covid-19 pandemic (38%). 26% of the respondents strongly agreed, and 14% of the respondents neutrally agreed that students are comfortable with the online learning system. The lowest percentage of the respondents disagreed that students are comfortable with online learning. The below graph interpreted that a high rate of respondents agreed that the online education system is comfortable for the students' community during the covid-19 pandemic.

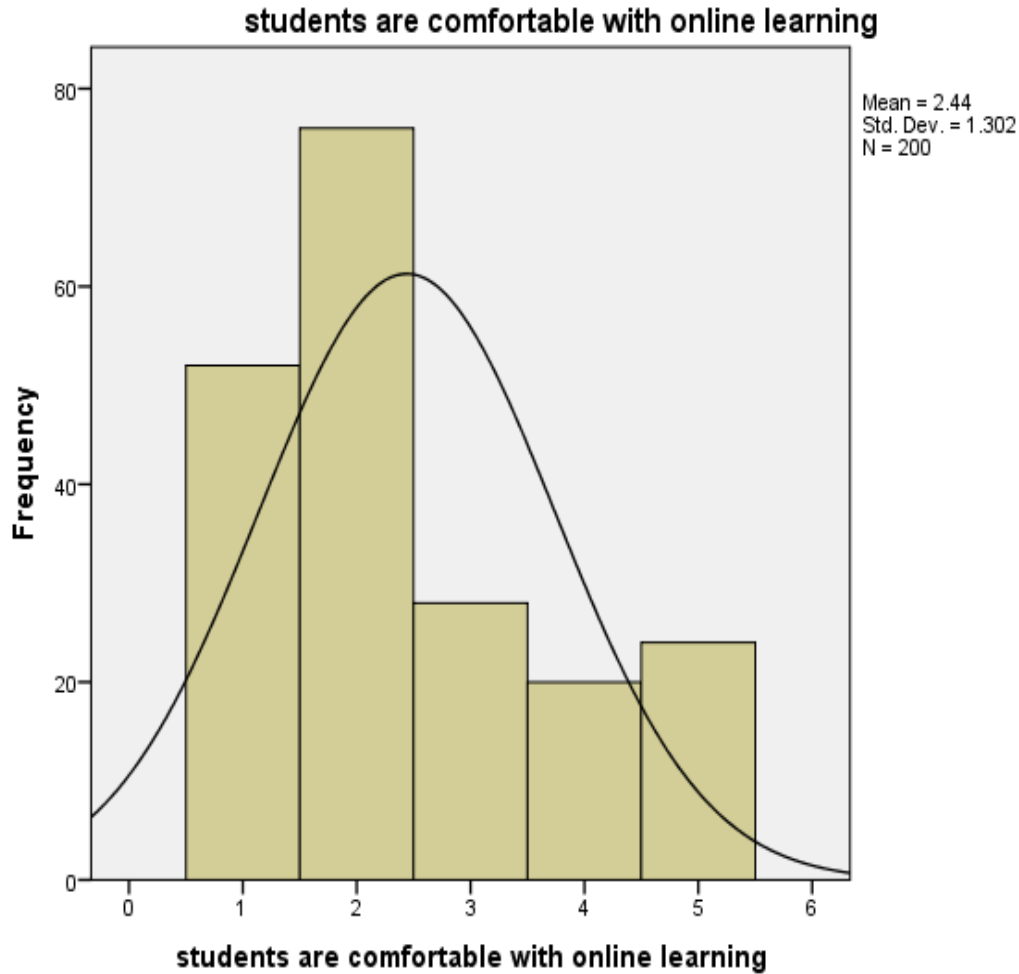


Figure 3: histogram graph on online learning

Table 4.2: Student's interest in education has come down due to online education

Variables		Frequency	Valid Percent
Valid	strongly agree	76	38.0
	agree	114	57.0
	neutral	7	3.5
	disagree	1	.5
	strongly disagree	2	1.0
	Total	200	100.0

The above table and below graph interpreted that 57% of the respondents agreed that students' interest in education has come down due to the online learning process. 38% of the respondents strongly agreed with this statement, and 3.5% of the respondents neither agreed nor disagreed whether students' interest in education has come down due to the online learning system during the covid-19 pandemic.

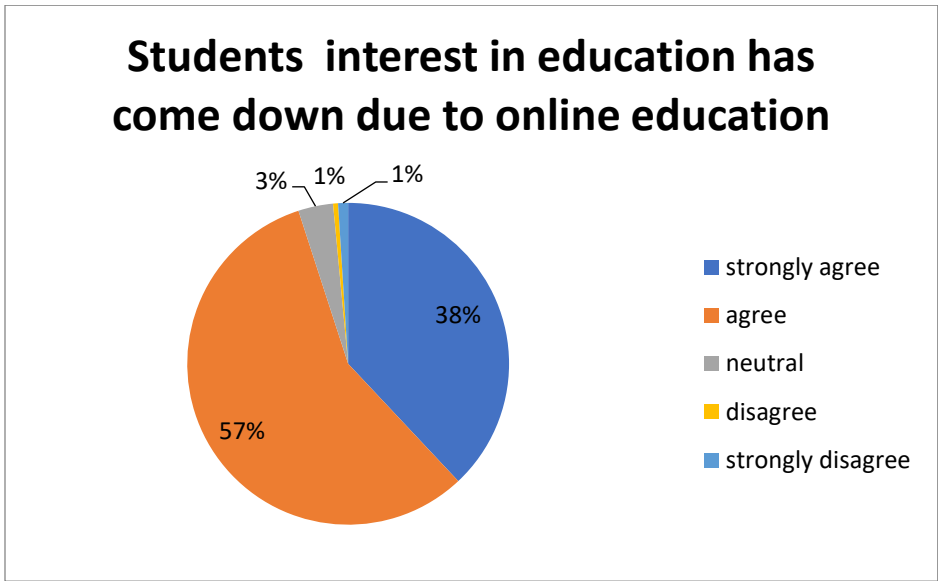


Figure 4: Student's interest rate during online classes

Table 4.3: Online education can provide support, and it can be implemented in higher education practices

Variables		Frequency	Percent
Valid	strongly agree	100	50.0
	agree	96	48.0
	neutral	4	2.0
	Total	200	100.0

It is depicted from the above table that 50% of the respondents strongly agreed that online education could provide support and can be implanted in higher education practices. 48% of the respondents agreed, and 2% of the respondents neutrally agreed that online education could provide support and can be implemented in higher education practices.

Table 4.4: Descriptive statistical analysis

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
students are comfortable with online learning	200	2.44	1.302	.740	.172	.561	.342
students learn from courses from other world universities and update their knowledge	200	3.36	1.056	.064	.172	.839	.342
Online education cannot provide emotional connectivity to teacher	200	1.48	.567	.685	.172	.547	.342
Online education cannot transform my mindset and approach to education	200	1.69	.659	1.379	.172	5.359	.342
There can be no better way of education than classroom education	200	1.49	.618	1.394	.172	4.061	.342
students' interest in education has come down due to online education	200	1.69	.659	1.379	.172	5.359	.342
students' parents do not approve of online education, but they accept it	200	2.43	1.313	.737	.172	.585	.342
Although online education is informative, it has not been effective as transformative education	200	3.37	1.048	.085	.172	.891	.342
Online education has not delighted and impressed me like a teacher in a classroom	200	1.49	.593	.935	.172	.672	.342



Student feedback and response cannot be very effective in online education	200	1.49	.558	.565	.172	.737	.342
Clarification of doubts and problem-solving cannot be effective in online education	200	1.67	.617	.988	.172	3.733	.342
There is a need for classroom interaction and management in the future	200	1.47	.566	.706	.172	.519	.342
Online education can provide support, but it cannot replace a teacher or the input provided	200	1.67	.617	.988	.172	3.733	.342
If the online mode of education continues, I am comfortable with it	200	1.47	.566	.706	.172	.519	.342
Teachers have become more effective in teaching in an online mode	200	1.68	.616	.978	.172	3.757	.342
Overall, I am happy and satisfied with the new mode of online education systems	200	1.48	.567	.685	.172	.547	.342
There are no challenges in online teaching	200	1.48	.567	.685	.172	.547	.342
Online education can transform students' mindsets and approaches to education	200	1.68	.623	.971	.172	3.544	.342
Students' interest in education has increased due to online education	200	1.48	.576	.718	.172	.474	.342
Student feedback and response can be very effective in online education	200	1.68	.623	.971	.172	3.544	.342
Online education can provide support, and it can be implemented in higher education practices	200	1.52	.539	.308	.172	1.114	.342
Monitoring becomes very difficult in online teaching	200	1.59	.611	.650	.172	.192	.342
Valid N (list-wise)	200						

It is inferred from the above descriptive analysis that the number of sample respondents is 200, and the mean value for the variables is positive, which is more than the p-value of 0.05. The standard deviation values for all variables are positive, and it is more than a significant p-value of 0.05. The skewness and kurtosis coefficient analysis was applied in this descriptive analysis. The skewness and kurtosis value is more than the p-value of 0.05, which is inferred from the above study, and all the variables are positively impacted in this study.

**4.2 Hypothesis-based analysis**

**H1: Students’ perception has changed positively towards learning due to online teaching and learning methods.**

**Table 4.5: ANOVA Analysis**

Student’s perception has changed positively towards learning due to online teaching and learning methods					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17.851	2	8.926	5.505	.005
Within Groups	319.429	197	1.621		
Total	337.280	199			

It is inferred from the above table that the significant value for the above ANOVA analysis is .005, which is less than the p-value of 0.05. Hence the null hypothesis is rejected, and the alternate hypothesis is accepted in this study. Finally, it concluded that students have positively changed towards learning due to online teaching and learning methods during the covid-19 and post covid-19 pandemic period.

**H2: There are challenges and problems involved in students' perception towards learning due to online teaching and learning methods.**

**Table 4.6: ANOVA Analysis**

		Sum of Squares	df	Mean Square	F	Sig.
Online education cannot provide emotional connectivity to teacher	Between Groups	63.875	2	31.938	3.52	.001
	Within Groups	.000	197	.000		
	Total	63.875	199			
Online education cannot transform my mindset and approach to education	Between Groups	3.162	2	1.581	3.742	.025
	Within Groups	83.233	197	.423		
	Total	86.395	199			
students' interest in education has come down due to online education	Between Groups	3.162	2	1.581	3.742	.025
	Within Groups	83.233	197	.423		
	Total	86.395	199			
Although online education is informative, it has not been effective as transformative education	Between Groups	37.408	2	18.704	20.334	.000
	Within Groups	181.212	197	.920		
	Total	218.620	199			
Online education has not delighted and impressed me like a teacher in a classroom	Between Groups	66.004	2	33.002	1645.675	.000
	Within Groups	3.951	197	.020		
	Total	69.955	199			
Clarification of doubts and problem-solving cannot be effective in online education	Between Groups	4.494	2	2.247	6.202	.002
	Within Groups	71.381	197	.362		
	Total	75.875	199			

The above ANOVA table depicted that the significant value for all variables is more than the p-value of 0.05. Hence the alternate hypothesis is accepted, and the null hypothesis has been rejected in this study. Finally, it interpreted that there are challenges and problems regarding online learning systems based on student's perception is positively impacted in this study.

**H3: The teacher's attitude towards online teaching and learning methods positively impacted student's motivation during online classes**

**Table 4.7: correlation analysis**

Correlations			
		Students' interest in education has increased due to online education	Student feedback and response can be very effective in online education
Students' interest in education has increased due to online education	Pearson Correlation	1	.137
	Sig. (2-tailed)	200	.053
	N		200
Student feedback and response can be very effective in online education	Pearson Correlation	.137	1
	Sig. (2-tailed)	.053	200
	N	200	

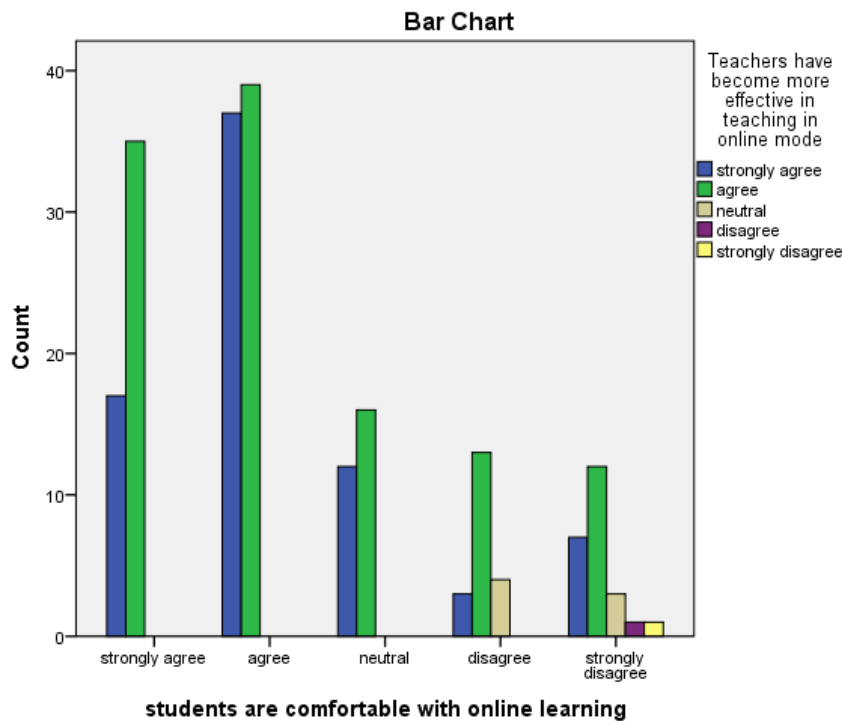
The above correlation analysis deliberated that the Pearson coefficient of the correlation value is .137, which is more than the p-value, and the significant 2-tailed value is .053, which is near the probability value 0.50 to 1. It indicated that it has a high degree of strong correlation level in the study. Finally, it showed the positive impact of this study. Hence the teacher's attitude towards online teaching and learning methods positively impacted students' motivation during online classes.

**H4: Students feel more engaged and committed due to the effectiveness of online teaching and learning method**

**Table 4.8: chi-square test**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.617 <sup>a</sup>	16	.000
Likelihood Ratio	38.298	16	.001
Linear-by-Linear Association	7.821	1	.005
N of Valid Cases	200		

The above chi-square test and the below graph were analyzed on effective teaching-learning practices in the e-learning process and their impact on students' engagement. The Pearson chi-square value for the above table is 45.6 at a 5% level of significance. The significant value is .000, which is less than the p-value of 0.001. Hence the null hypothesis is rejected, and the alternate hypothesis for the study is accepted. It concludes that Students feel more engaged and committed due to the effectiveness of online teaching and learning method.



**Figure 5: effectiveness of teaching during online classes**

**5. Discussions**

The primary purpose of the study was to examine and investigate the online teaching challenges and their impact on teaching-learning methods during the covid-19 pandemic in selected colleges from Saudi Arabia. The majority of the respondents preferred e-learning systems to cope with the curriculum during the pandemic. Whereas many students and teachers are adapted to the e-learning system, they engage themselves in effective teaching and learning practices. In order to probe into this condition, the data required to analyse the perception of students and teachers on e-learning systems were required. Based on the data, the study analyzed the successful hindrance to the digital learning environment. Due to the covid-19 pandemic, the education systems were rapidly moved to digitization and implemented e-learning systems in a short period of time. The online learning system has both positive and negative influences on educational practices, majorly in developing countries (Saxena, Baber, & Kumar, 2021). Even though the online learning system is beneficiary for the student community but also it has many challenges, and it does not work in the long term process. The previous studies on online learning stated that e-learning practices give to benefit the learning skills of students during the covid-19 pandemic as a complementary tool for the traditional education system. Moreover, (Gohiya & Gohiya, 2020) has stated that even though students have a positive attitude towards online learning system, they still encounter

many technical issues. This system is useful for the pandemic period to continue their education skills and knowledge at home. Similarly, (Mseleku, 2020) has deliberated on the effectiveness of online learning systems and investigated the challenges and issues of online learning in developed countries like Saudi Arabia (Azlan et al., 2020).

In a similar way, the result of the study indicated that the majority of the respondents are adapted to online learning practices, and they motivated themselves to attend online classes during the pandemic period. The survey of the study indicated that there is a positive impact on students' perception towards the online learning systems and the adaption practices in Saudi Arabia. An effective teaching methodology will motivate the students to engage themselves actively during online classes (Aboagye, Yawson, & Appiah, 2021). The quality of online learning depends upon the teaching pedagogy, innovative teaching methodology, collaborative learning and motivating students during the online learning process. The teaching faculties should motivate the students through their effective teaching method to engage the students in entire online classes. The teachers should appreciate and encourage the students during online learning to motivate and engage themselves in attending the classes (Igbokwe et al., 2020). The teachers need to improve their teaching pedagogy during their online classes to engage and motivate the students during this pandemic period (Pustika, 2020).

## 6. Conclusion

The study aimed to evaluate and explore the online teaching challenges and their impact on teaching-learning methods during the covid-19 pandemic. However, it is difficult to evaluate the motivation and activation of students during E-learning due to the lack of direct contact between the teaching faculties and students. The study collected primary data from the students and teachers in colleges through an online survey method with a structured questionnaire. The collected data were analyzed with IBM SPSS software, and the hypothesis was tested based on the assumptions and objectives of the study. The ANOVA, correlation, chi-square and descriptive statistical analysis were applied in this study to test the significant relationship between the variables. Based on the analysis, the entire hypothesis is accepted, and it shows a positive relationship between the variables. Finally, the study concluded that effective teaching pedagogy would increase the motivation level of students and it will engage students to attend online learning classes effectively during the pandemic period.

The notorious coronavirus has made the entire world experience the swirl as a whole. All the sectors have faced at least minimal after-effects. While the sectors like education, health, manufacturing industries, and manufacturing industries have suffered a lot. Since these industries must come in direct contact with others regularly, the presented thesis has worked on analyzing the various challenges experienced in teaching online. Also, the research has scrutinized the impacts and influences of several online teaching methods existing in the regions of Saudi Arabia. The research proceeded by proposing objectives, and hypotheses, creating the questionnaire, collecting primary data and executing statistical analysis. The objectives of the study are to investigate the mindset of the student towards online teaching and learning methods, also to determine the mindset of teachers towards online classes, also to see if students' knowledge has enhanced after adopting online classes and learning methods. The research also analyses the role of technology in improving online teaching and learning methods for teachers. The research was executed using primary data collected by distributing questionnaires to students and teachers from colleges in Saudi Arabia. After the analysis of data via a statistical tool called SPSS, the outcomes showed that most of the students preferred online learning compared to manual learning during the pandemic period, with significant results. Many students and teachers were adapted to online learning systems. Another objective of the effectiveness of the learning method was also significantly proven that effective learning will motivate a few uninterested students to cope with online classes. The teachers need to improve their teaching pedagogy during their online classes to engage and motivate the students. There are a few limitations in this study also because online classes cannot work out effectively and efficiently in the long run process. Also, chances of technical issues can also occur. Such cases are unavoidable. During those times, the entire syllabus of the curriculum could not be covered fruitfully by both teachers for teaching and students as well. As future recommendations, the research suggests working on overcoming the limitations, like enabling online studying in the long run though there is no existence of the pandemic situation. Also, there are a few malpractices happening during online classes, and some firewalls or restrictions can be developed to avoid those sorts of unwanted possibilities in future.

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