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**RESEARCH PAPER**

# Perceptions Regarding E-Learning: A Study of University Students

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**ABSTRACT**

Education is a core element for development of a nation and it helps the people to build tolerance and development of intellect. E-learning is one of the modern toll where instruction can be transferred through modern technology from any institute to the students. The intent of the research was to investigate the perceptions of students about e-learning. Public sector universities of district Lahore included the population of the study. Sample was drawn from the population through random sampling. The sample was comprised of 503 students enrolled in public sector universities of the district Lahore. Cross-sectional survey designed was used to collect the data. Researcher developed the instrument after reviewing the in-depth literature which initially comprised of 44 items. The instrument was validated through expert opinion and it was modified in the light of the expert opinion and the final version of instrument included 39 items. The reliability of the instrument was also ensured and its value was .89. The findings of the research shows that students perceive positively to e-learning. Furthermore, it is also explored that the gender has no effect on the perceptions of the students regarding e-learning. Use of different kind of devices has a significant effect on accessibility utilization, functionality, communication and learning scales of e-learning.

| **KEYWORDS** | E-Learning, Communication, University Students |

## Introduction

Education is a core element for development of a nation (Kang, 2019). Education helps the people to build tolerance and helps to development of intellect. Education mainly aims to produce skilled and intellectual human beings which are truly helpful in the development of the nation   (Al-Araibi et al., 2019). E-learning is introduced as a learning toll with the development of technology.  E-learning is one of the modern toll where instruction can be transferred through modern technology from any institute to the students. Currently e-learning developed as a new paradigm of education by shifting the traditional concept of education (Sun et al., 2008; Wang et al., 2007).  Now instruction is not restricted in traditional classroom (Marold & Haga, 2004; Zhang & Nunamaker, 2003).

## Literature Review

E-learning is the exercise of learning of concepts in synchronous or asynchronous settings through the use of the internet, where learners can interconnect with their instructors and fellow from any location (Singh & Thurman, 2019).  E-learning enables the students to attend their classes from anywhere. It is convenient for the students to afford

and arrange their online classes (Dhawan, 2020). E-learning approach to teaching can be helpful in instruction and guided learning by creating online repositories (Judrups, 2015). Students have access to a variety of online courses, databases, and tools through e-learning systems by providing information and assist them to learn new lessons. E-learning platforms are valued as a means of transferring knowledge by both academics and professionals. Instructors used different devices i.e. cell phones, laptops etc. for instructing the students through e-learning (Giles & Shaw, 2011). The main concern of the modern era is the usage of technological devices on quality indicators for increasing students' capacities (Blau, 2011).

E-learning is very useful in emergency situations as it was used ever where in the world during the period of COVID-19. UNESCO has recommended the educational institutes to equip them with online learning tools to facilitate the students (Crawford et al., 2020). E-learning promotes a proper learning environment and reduces student harassment over the course of the emergency circumstances. Although administration used online learning effectively to manage time, learning processes, and educational activities, it is rarely successful at the primary level. The administration department has developed guidelines for the use of electronic resources in the learning process in accordance with the work of instructors and students (Endale et al., 2020). Digital media always plays important role in adverse conditions and different kind of applications are used for this purpose (Yustika & Iswati, 2020).

E learning plays an important role in COVID and it was quite beneficial for the students for learning purpose. When students are confined at home but e-learning provides access to education through online class. E-learning forced teachers to change their pedagogical approaches. E-learning brought a big change in teaching and learning process. For delivering lesson to students many applications are used for the sake of e-learning like zoom, goggle class room, LMs, and many other audio visual aids, and in this way all learning system shift from traditional learning to These applications are helpful in manage attendance, curriculum, assignments and many more. E-learning offers an extensive range for the communication facilities that fulfil the needs of students (Uhomoibhi et al., 2011). The instructors using e-learning has the ability to motivate students to learn in adverse conditions and they impart instruction effectively (Zakaria et al., 2012). E-learning, which uses internet technology to develop, implement, choose, manage, support, and expand learning, will not replace traditional educational approaches but will considerably increase educational effectiveness (Johnson et al., 2019). To improve the effectiveness of e-learning teachers and students have to struggle because now it is necessary in the modern day to manage online learning (Moore-Hart, 2008). Yet, it is difficult for those who lack resources and have inadequate technical skills (Owusu-Fordjour et al., 2020). Online meetings might encounter a number of technological obstacles, including login difficulties, poor audio and video quality, and downloading failures (Dhawan, 2020). When they have such technological issues, students become despondent (Kim et al., 2005).

Nursing students showed satisfaction with e-learning in a study comparing the effectiveness of e-learning against classroom learning. Learners were not able to communicate with their instructor or take part in the online discussion due to a lack of technological knowledge. Nursing students preferred live online meetings with their teachers rather than recorded lectures in the form of videos (Dhawan, 2020). According to Abdelaziz et al. (2011), e-learning required different tools i.e. internet, computer, laptops or smartphones by the students. Kim et al. (2005) revealed that university students were quite satisfied with online learning. The advantages of online learning were recognized, and the pupils enjoyed and it was extremely flexible. It is found that e-learning is not

effective because students did not pay proper attention and they do not interact properly due to some technical issues (Dhawan, 2020).

**Material and Methods**

The research was conducted with the intent to explore the perceptions of students regarding e-learning at university level. Public sector universities of district Lahore included the population of the study. Sample was drawn from the population through random sampling. The sample was comprised of 503 students enrolled in public sector universities of the district Lahore. Cross-sectional survey design was used to collect the data. Researcher developed the instrument after reviewing the in-depth literature. Initially the questionnaire was comprised of 44 items which covers the nine aspects of e-learning which includes accessibility, utilization, effectiveness, functionality, learning, communication, assessment, distracting factors and internet skills. The validity of the instrument was ensured through expert opinions of four experts in the field of education. Instrument was modified in the light of the expert opinion and the final version of instrument included 39 items. The reliability of the instrument was also ensured and its value was .89.

**Results and Discussion**

**Table 1**
**Frequency of Devices used for E-Learning**

| Device | Frequency |
|--------|-----------|
| Desktop | 17 |
| Laptop | 247 |
| Smartphone | 239 |

Table 1 shows that 247 students use laptop for e-learning, 239 students use smartphone for e-learning and only 17 students' use laptops for e-learning.

**Table 2**
**Frequency of Software used by Students**

| Software | Frequency |
|----------|-----------|
| Zoom | 304 |
| Google meet | 199 |

Table 2 depicts the frequency of software's used by students for e-learning. It shows that 304 students use zoom for online education and 199 students use google meet for e-learning.

**Table 3**
**Frequency of Level ICT Skills of Students**

| Level of ICT Skills | Frequency of ICT Skills |
|---------------------|-------------------------|
| Poor | 44 |
| Acceptable | 200 |
| Good | 210 |
| Excellent | 49 |

Table 3 shows the frequency of student on the basis of the level of skills of ICT. It shows that 44 students are poor in ICT skills, 200 students are at acceptable level of ICT skills, 210 students are good in ICT skills and 49 students are excellent in ICT skills.

**Table 4**
**Perceptions of students about E-Learning**

| Subscale | N | SD | D | UN | A | SA | Mean | SD |
|---|---|---|---|---|---|---|---|---|
| Accessibility | | | | | | | | |
| Accessibility 1 | 503 | 35 | 65 | 82 | 219 | 102 | 3.57 | 1.153 |
| Accessibility 2 | 503 | 37 | 41 | 72 | 191 | 162 | 3.80 | 1.189 |
| Accessibility 3 | 503 | 53 | 50 | 78 | 201 | 121 | 3.57 | 1.249 |
| Accessibility 4 | 503 | 49 | 39 | 52 | 209 | 154 | 3.76 | 1.241 |
| Accessibility 5 | 503 | 56 | 46 | 40 | 206 | 155 | 3.71 | 1.294 |
| Accessibility 6 | 503 | 35 | 42 | 40 | 205 | 181 | 3.90 | 1.180 |
| Accessibility 7 | 503 | 60 | 45 | 48 | 205 | 141 | 3.66 | 1.304 |
| Accessibility 8 | 503 | 51 | 30 | 49 | 222 | 151 | 3.78 | 1.226 |
| Accessibility 9 | 503 | 53 | 40 | 45 | 207 | 158 | 3.75 | 1.269 |
| Utilization | | | | | | | | |
| Utilization 1 | 503 | 50 | 30 | 56 | 213 | 154 | 3.78 | 1.226 |
| Utilization 2 | 503 | 39 | 32 | 38 | 224 | 170 | 3.90 | 1.166 |
| Utilization 3 | 503 | 59 | 37 | 51 | 197 | 159 | 3.72 | 1.300 |
| Utilization 4 | 503 | 45 | 38 | 50 | 220 | 150 | 3.78 | 1.208 |
| Utilization 5 | 503 | 57 | 36 | 56 | 204 | 150 | 3.70 | 1.277 |
| Utilization 6 | 503 | 38 | 40 | 44 | 217 | 164 | 3.85 | 1.180 |
| Utilization 7 | 503 | 48 | 52 | 38 | 201 | 164 | 3.76 | 1.272 |
| Utilization 8 | 503 | 41 | 42 | 58 | 211 | 151 | 3.77 | 1.198 |
| Utilization 9 | 503 | 52 | 42 | 55 | 194 | 160 | 3.73 | 1.274 |
| Effectiveness | | | | | | | | |
| Effectiveness 1 | 503 | 56 | 50 | 46 | 201 | 150 | 3.67 | 1.299 |
| Effectiveness 2 | 503 | 46 | 46 | 59 | 181 | 171 | 3.77 | 1.263 |
| Effectiveness 3 | 503 | 58 | 51 | 51 | 189 | 154 | 3.66 | 1.318 |
| Effectiveness 4 | 503 | 50 | 37 | 54 | 189 | 173 | 3.79 | 1.265 |
| Functionality | | | | | | | | |
| Functionality 1 | 503 | 42 | 42 | 56 | 211 | 152 | 3.77 | 1.204 |
| Functionality 2 | 503 | 31 | 42 | 54 | 195 | 181 | 3.90 | 1.161 |
| Functionality 3 | 503 | 50 | 37 | 61 | 195 | 160 | 3.75 | 1.253 |
| Learning | | | | | | | | |
| Learning 1 | 503 | 35 | 46 | 40 | 207 | 175 | 3.88 | 1.186 |
| Learning 2 | 503 | 48 | 32 | 66 | 189 | 168 | 3.79 | 1.240 |
| Learning 3 | 503 | 52 | 30 | 48 | 214 | 159 | 3.79 | 1.241 |
| Communication | | | | | | | | |
| Communication 1 | 503 | 46 | 51 | 36 | 221 | 149 | 3.75 | 1.239 |
| Communication 2 | 503 | 34 | 36 | 54 | 192 | 187 | 3.92 | 1.170 |
| Communication 3 | 503 | 63 | 43 | 56 | 191 | 150 | 3.64 | 1.324 |
| Assessment | | | | | | | | |
| Assessment 1 | 503 | 32 | 30 | 52 | 209 | 180 | 3.94 | 1.128 |
| Assessment 2 | 503 | 29 | 32 | 45 | 210 | 187 | 3.98 | 1.112 |
| Assessment 3 | 503 | 50 | 38 | 35 | 201 | 179 | 3.84 | 1.264 |
| Distracting Factors | | | | | | | | |
| Distracting Factors 1 | 503 | 42 | 37 | 40 | 214 | 179 | 3.86 | 1.203 |
| Distracting Factors 2 | 503 | 30 | 36 | 54 | 196 | 187 | 3.94 | 1.141 |
| Distracting Factors 3 | 503 | 55 | 29 | 45 | 215 | 159 | 3.78 | 1.256 |
| Internet Skills | | | | | | | | |
| Internet Skills 1 | 503 | 46 | 33 | 51 | 218 | 155 | 3.80 | 1.208 |
| Internet Skills 2 | 503 | 41 | 44 | 49 | 201 | 168 | 3.82 | 1.218 |

Table shows the descriptive of different scales of e-learning. It provides the clear picture about the perceptions of students regarding different scales of e-learning.

**Table 5**
**Descriptive of Perceptions of students about E-Learning**

| Scale | Range | | | | | | |
|---|---|---|---|---|---|---|---|
| | N | M | SD | Potential | Actual | Skewness | Kurtosis |
| **Accessibility** | 503 | 33.50 | 7.43 | 9-36 | 9-45 | -0.58 | -0.50 |
| **Utilization** | 503 | 34.00 | 7.58 | 9-36 | 9-45 | -0.61 | 0.12 |
| **Effectiveness** | 503 | 14.89 | 4.13 | 4-16 | 4-20 | -0.76 | 0.01 |
| **Functionality** | 503 | 11.43 | 2.87 | 3-12 | 3-15 | -0.68 | -0.12 |
| **Learning** | 503 | 11.46 | 2.81 | 3-12 | 3-15 | -0.70 | 0.08 |
| **Communication** | 503 | 11.31 | 3.21 | 3-12 | 3-15 | -0.88 | 0.11 |
| **Assessment** | 503 | 11.76 | 2.85 | 3-12 | 3-15 | -0.95 | 0.46 |
| **Distracting factors** | 503 | 11.59 | 2.80 | 3-12 | 3-15 | -0.86 | 0.47 |
| **Internet Skills** | 503 | 7.62 | 2.00 | 2-08 | 2-10 | -0.79 | 0.07 |

For better understanding of the data above table provides the quick summary of different scales regarding e-learning. Frequency and range (potential and actual) both are calculated. Skewness and kurtosis were also calculated to know the normality of the data and values fall between the range of +1 to-1 which shows that the data is normally distributed. Table depicts that most of the students perceived that most of the students have accessibility regarding e-learning and most of the students perceive that e-learning is effective.

**Table 6**
**Perceptions of the Students regarding E-Learning on the basis of Gender**

| Scale | Gender | N | M | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Accessibility | Male | 217 | 33.33 | 7.57 | .39 | 501 | .69 |
| | Female | 286 | 33.62 | 7.32 | | 456.83 | |
| Utilization | Male | 217 | 34.29 | 7.50 | .76 | 501 | .04 |
| | Female | 286 | 33.77 | 7.65 | | 456.83 | |
| Effectiveness | Male | 217 | 14.79 | 4.25 | .44 | 501 | .66 |
| | Female | 286 | 14.96 | 4.06 | | 456.83 | |
| Functionality | Male | 217 | 11.41 | 2.88 | .07 | 501 | .94 |
| | Female | 285 | 11.43 | 2.87 | | 456.83 | |
| Learning | Male | 182 | 11.45 | 2.92 | .07 | 501 | .94 |
| | Female | 218 | 11.47 | 2.73 | | 456.83 | |
| Communication | Male | 182 | 11.24 | 3.26 | .25 | 501 | .67 |
| | Female | 218 | 11.36 | 3.17 | | 456.83 | |
| Assessment | Male | 182 | 11.59 | 2.97 | 1.21 | 501 | .22 |
| | Female | 218 | 11.90 | 2.77 | | 456.83 | |
| Distracting factors | Male | 182 | 11.48 | 2.82 | .75 | 501 | .46 |
| | Female | 218 | 11.67 | 2.79 | | 456.83 | |
| Internet skills | Male | 182 | 7.43 | 2.07 | 1.86 | 501 | .06 |
| | Female | 218 | 7.77 | 1.94 | | 456.83 | |

Independent samples t-test was used to find the difference in the perceptions of the students on the basis of gender. Results of the t-test shows the significant mean difference in the perception of scale utilization of male (M=34.29, SD=7.50) and female students

(M=33.77, SD=7.65).Table also depicts that there is no mean difference in the mean scores of other scales of e-learning on the basis of gender.

**Table 7**
**Perceptions of Students on the basis Device regarding E-Learning**

| Scale | Source | df | SS | MS | F | p-value |
|---|---|---|---|---|---|---|
| Accessibility | Between Groups | 2 | 1212.654 | 606.327 | 11.446 | .000 |
| | Within Groups | 500 | 26487.084 | 52.974 | | |
| Utilization | Between Groups | 2 | 1055.429 | 527.714 | 9.492 | .000 |
| | Within Groups | 500 | 27797.554 | 55.595 | | |
| Effectiveness | Between Groups | 2 | 88.352 | 44.176 | 2.600 | .075 |
| | Within Groups | 500 | 8496.188 | 16.992 | | |
| Functionality | Between Groups | 2 | 81.743 | 40.871 | 5.037 | .007 |
| | Within Groups | 500 | 4057.211 | 8.114 | | |
| Learning | Between Groups | 2 | 100.812 | 50.406 | 6.506 | .002 |
| | Within Groups | 500 | 3874.019 | 7.748 | | |
| Communication | Between Groups | 2 | 74.140 | 37.070 | 3.637 | .027 |
| | Within Groups | 500 | 5096.711 | 10.193 | | |
| Assessment | Between Groups | 2 | 51.491 | 25.745 | 3.176 | .043 |
| | Within Groups | 500 | 4053.356 | 8.107 | | |
| Distracting Factors | Between Groups | 2 | 86.138 | 43.069 | 5.579 | .004 |
| | Within Groups | 500 | 3859.850 | 7.720 | | |
| Internet Skills | Between Groups | 2 | 19.938 | 9.969 | 2.504 | .083 |
| | Within Groups | 500 | 1990.774 | 3.982 | | |

One way ANOVA was applied to find the difference in the perceptions of students on the basis of use of different devices for e-learning. Table 4 depicts that there is a significant mean difference in the mean scores of accessibility (p=.000, F=11.446). Table also revealed the significant mean difference in the perceptions of the students for the scale utilization (p=.000, F=9.492). It is also observed that there is no significant mean difference in the perceptions of the students for the scale effectiveness at p=.075.

**Table 8**
**Perceptions of Students Regarding E-Learning on the Basis of Software**

| Scale | Gender | N | M | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Accessibility | Zoom | 304 | 33.7928 | 7.43685 | 1.11 | 501 | .27 |
|  | Google Meet | 199 | 33.0402 | 7.41064 |  | 424.54 |  |
| Utilization | Zoom | 304 | 34.0822 | 7.03104 | .311 | 501 | .76 |
|  | Google Meet | 199 | 33.8593 | 8.36903 |  | 424.54 |  |
| Effectiveness | Zoom | 304 | 14.8454 | 4.01882 | .27 | 501 | .78 |
|  | Google Meet | 199 | 14.9497 | 4.31669 |  | 424.54 |  |
| Functionality | Zoom | 304 | 11.2599 | 2.74582 | 1.57 | 501 | .12 |
|  | Google Meet | 199 | 11.6784 | 3.04297 |  | 424.54 |  |
| Learning | Zoom | 304 | 11.5296 | 2.65741 | .69 | 501 | .49 |
|  | Google Meet | 199 | 11.3467 | 3.04103 |  | 424.54 |  |
| Communication | Zoom | 304 | 11.1678 | 3.17397 | 1.20 | 501 | .23 |
|  | Google Meet | 199 | 11.5176 | 3.25955 |  | 424.54 |  |
| Assessment | Zoom | 304 | 11.7829 | 2.63868 | .18 | 501 | .86 |
|  | Google Meet | 199 | 11.7337 | 3.17414 |  | 424.54 |  |
| Distracting factors | Zoom | 304 | 11.6941 | 2.66040 | 1.04 | 501 | .30 |
|  | Google Meet | 199 | 11.4221 | 3.00886 |  | 424.54 |  |
| Internet skills | Zoom | 304 | 7.6612 | 1.86518 | .57 | 501 | .56 |
|  | Google Meet | 199 | 7.5528 | 2.19641 |  | 424.54 |  |

Independent samples t-test was applied to find the difference among the perceptions of students on the basis of use of software. Table 5 revealed that there is no significant mean difference in the mean scores of different scales of e-learning.

**Conclusion**

E-learning is important in the life of the learners in this era with development of technology. This research aimed in finding the perceptions of students regarding e-learning. This research found that students perceived positively for accessibility of e-learning. Previous researchers also found that the students of urban area have the accessibility of e-learning (Basilaia &Kvavadze, 2020). Findings of this research are align with the previous researches. The study revealed that students perceived positively to the scale utilization of e-learning. It was also found that some students face technical and internet issues which has an adverse effect on the student while interacting with the teacher which leads to the dissatisfaction. Yekefallah et al. (2021) also found that majority of the learners found different kind of technical issues which lead to dissatisfaction of the learner. But at higher education level students are satisfied with the e-learning as they are more able to resolve their issues. The study found that most of the students are at moderate level in the use of ICT skills. The improvement in the ICT skills may help the students to learn in a better way and the effectiveness of e-learning may enhance. Cole et al. (2014) found high level of comfort with the utilization of online tools for e-learning at university level. Strong et al. (2012) revealed that students perceive e-learning effective but it is not a preferred method of learning. The study also found the effect of gender on the perceptions of students regarding e-learning but no significant difference in the mean scores was observed. Use of different devices found to be a predictor for the scale utilization of e-learning (Pragholapati, 2020).

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