

# Students' Perception of Online Learning during COVID-19 Pandemic: A Survey Study of IT Students

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**Abstract:** With the sudden change in an environment with the new coronavirus, online learning has become a promising solution for the education sector all over the globe. Despite gaining popularity of online learning with the emergence of the internet, and new technology students are more inclined towards the traditional face to face learning rather than online learning before COVID-19. The present survey aimed to examine the students' perception of online learning during the COVID-19 pandemic period at the ATI in Dehiwala, Sri Lanka. Out of 130 participants, 62.5% had little or no experience with online learning prior to the coronavirus outbreak, 54.7% preferred blended learning of traditional learning and online learning. The most popular device used to connect online is the smartphone (43.8%). Regardless of the challenges to online learning during the COVID-19 included issues related to reduce interaction between the lecturer and friends (64.1%), social isolation (55.5%), and technical problems (57%). Irrespective of these challenges, students perceive online learning as effective as face to face learning, enjoyable, able to learn at own pace, easy access to online material, and active participation. 82.9% of students agreed to integrate online learning into their course in the future and overall perception regarding online learning during COVID-19 is 79.7%. In conclusion, the current survey displays a favorable perception of online learning among IT students.

**Keywords:** Online learning, IT students, Perception, COVID-19 pandemic

## I. INTRODUCTION

With the growing popularity of information technology (IT), we cannot deny the influence of it over our lives in multiple aspects, especially usefulness in the education sector. There is growing popularity of online learning or e-learning among higher educational institutes and universities across the world (Abbasi et al., 2020; Zabadi & Al-Alawi, 2016). One of the reasons is the easy accessibility to direct internet from any place in the world (Smart & Cappel, 2006). Online learning can be experienced in synchronous (where learners meet in real-time) or asynchronous (where participants interact at different times) environment using different devices such as mobile phone, laptops, etc, with internet access (Dhawan, 2020; Singh & Thurman, 2019; Smart & Cappel, 2006).

The role of IT has gain momentum in the academic arena with the outbreak of novel coronavirus worldwide. The World Health Organization declared the COVID-19 outbreak as a pandemic on May 11, 2020, and governments had issued a stay at home directives (Rajab, Gazal, & Alkattan, 2020)

including the Sri Lankan government. 130 Therefore, there has been a shift from the traditional face-to-face classroom method to online learning. Most universities and institutes, including Advanced Technological Institutes (ATIs) operates under the Sri Lanka Institute of Advanced Technological Education (SLIATE), have shifted to online learning in the most convenient ways including e-mail, LMS, Google meet, and later with Zoom. Prior to COVID-19 online learning was not so popular among Sri Lankan institutes and universities. However, with the lockdown situation educators had to move to online learning to continue students learning without getting interrupted.

Since this teaching method is relatively new in ATIs, both lecturers and students were in the process of getting familiar with the new system. However, we should not forget that our students are highly digital natives and use technology as an integral part of their everyday lives where, they use technology widely for internet searching, socializing, and communication (Popovici & Mironov, 2015). At this specific point in time, it is important to find out students' perception regarding this virtual teaching and learning. It will be an interesting point to view that whether the students comfortable with the new teaching methodology, blended learning, or rather would want to go back to conventional learning. Therefore, the purpose of this study is to determine the perception of online learning during lockdown period due to COVID-19.

## II. LITERATURE REVIEW

With the rapid development in technology, online learning has become a major component of education globally (Bhagat, Wu & Chang, 2016; Singh & Thurman, 2019). Numerous education institutes have been implementing a transition from traditional classroom teaching to online teaching or a blend of traditional teaching and online learning before COVID-19 (Dhawan, 2020; Rajab et al., 2020). Online learning is also termed as open learning, web-based learning, computer-mediated learning, blended learning, E-learning (Dhawan, 2020; Smart & Cappel, 2006). According to previous studies, a common feature of online is students get the possibility to learn anywhere, at any time, at any pace by connecting to the internet using a computer or mobile phone. Singh & Thurman (2019) defined online learning as "learning experienced through the internet / online computers in a synchronous classroom where students interact with the teacher and other

students and are not dependent on their physical location for participating in this online learning experience” (p. 302).

As per the World Bank report (2020) several countries had adopted different learning styles to continue education without getting interrupted. For example, several countries including China, Bulgaria, Finland, etc. had launched an e-learning system, implemented digital learning environments, and solutions to ensure that uninterrupted learning for students (as cited in Rasmitadila et al., 2020). Like any other teaching method online learning has its advantages and disadvantages for the students and teachers (Bączek et al., 2020). According to previous literature online learning has several benefits such as easy accessibility, flexibility, increased convenience, relatively cheaper mode of education in terms of low cost of transportation, and accommodation. Several arguments are also associated with online learning such as internet accessibility, poor internet connection quality, affordability, insufficient digital knowledge of learners, and time flexibility (Bączek et al., 2020; Dhawan, 2020).

### III. RESEARCH METHODOLOGY

After four months of learning online, a questionnaire was distributed among IT students of ATI Dehiwala (which operates under SLIATE) to recognize their perception regarding new online learning experience. SLIATE is a nonprofit, government, higher education institute in Sri Lanka with 19 affiliated institutes located all over the island. Due to convenience for this study researches had selected ATI Dehiwala. ATI Dehiwala offers seven different Higher National Diplomas (HND) and the present study targets only the HNDIT students. Researchers had developed a self-administrated online questionnaire using Google Forms. A cross-sectional survey was conducted from June to July 2020. The questionnaire included two parts. The first part of the survey asked students demographic details and whether they had any early experiences with online learning. In the second part, students were asked to rate their perception about online learning experience using the Likert Scale from 1 to 5 (1 = Strongly Disagree, 5 = strongly agree).

All the data was entered and analyzed through the Statistical Package of Social Science (SPSS version 20). The descriptive statistics analysis of data was performed to determine the mean, standard deviation, frequency, and percentage. Reliability and validity were calculated by Cronbach’s alpha value, which was 0.82.

### IV. RESULTS AND DISCUSSION

A total of 130 IT students participated in the study: 76 (58.5%) first year students and 54 (41.5%) second year students. The response rates were approximately 94% first-year students and 70% second-year students. The age of the students ranged from 20 -25. The demographic factors along with the choice of the device used, and the internet mode used to connect online for online learning are shown in Table 1.

Out of the participants, 67 (51.5%) were male, and 63 (48.5%) were female.

When searched the literature earlier to the COVID-19 regarding online learning, researchers found mixed views where some are positive and others are negative. The students’ perception of online learning during COVID-19 and overall satisfaction of students regarding online learning presented in Table 2.

Table 1 Demographic factors, choice of device used and internet mode used for online learning

N = 130	Frequency (f)	Percentage (%)
Gender		
Male	67	51.5%
Female	63	48.5%
Year		
First Year	76	58.5%
Second Year	54	41.5%
Device used to log online classes		
Smart phone	57	43.8%
Laptop	48	37.5%
Both Laptop & smart phone	23	17.1%
Tablet	02	01.6%
Internet mode used to connect		
WiFi	40	30.5%
Mobile data	90	69.5%

This study indicated that out of 130, 43.8% of students had used mobile phones as a connecting device for their online lectures. This indicates that the most popular device among students is mobile phones for online learning compared to laptops, and tablets. This finding is more similar to the findings of Abbasi et al. (2020), where 76% of students prefer mobile devices for e-learning. Also, the majority (69.5%) had used mobile data as internet mode to connect the internet during online lectures. According to 53.9% of students, the speed of the connection during online lectures was fast and 46.1% experienced slow and very slow connection speed. 83.6% of students mostly preferred Zoom to conduct online lectures and the balance students preferred Google Meet, Google classroom, and LMS. Among the participants, 62.5% reported having little or no online learning or teaching experience before the pandemic. Existing literature also illustrates similar results (Abbasi et al., 2020; Bączek et al., 2020; Rajab et al., 2020).

Among the students, 70 (54.7%) preferred both online and traditional face-to-face classroom learning while 36 (28.1%) preferred the traditional face-to-face classroom learning, and 22 (17.2%) students preferred online learning. Previous studies revealed the same results where hybrid learning is more preferable among students. According to Rajab et al. (2020), 62.5% of respondents preferred a combination of online with traditional face-to-face learning. Whereas, similar results were reported by Abbasi et al. (2020) and Bączek et al. (2020). In their studies found that e-learning was perceived as less effective compared to traditional classroom learning.

Easy access to online materials, active participation, ability learn at own pace, and getting online lecture records were the most solid advantages students got during online sessions. Therefore, the majority of participants confirm online learning as an effective way of learning method compared to face to face learning. It was interesting that 80% of participants agreed that they have actively participated during online learning. This is against the findings of Bączek et al. (2020), where respondents assessed they were less active during e-learning. Also, they have positively rated online learning as enjoyable and comfortable. These findings are in line with the results found by Bączek et al. (2020) where the majority of Polish medical students confirmed these factors as major advantages. As per Verma et al. (2020) 57% of students felt online classes are safe, comfortable, and enjoyable. Also, a survey conducted by Agarwal & Kaushik (2020) during COVID-19 revealed 95% of post-graduate students found online sessions enjoyable and interesting. According to the results of the survey, the majority is satisfied with the quality of online teaching while minor percentage is neither satisfied nor dissatisfied, and the least number of students are dissatisfied with online teaching.

The reported challenges faced to online lectures by students during COVID-19 pandemic were reduced interaction with the lecturer and friends (64%), social isolation (55.5%), and technological problems (57%) such as internet access, poor internet speed, difficulties in downloading, and installing the online class application. Similar findings were presented by other researchers who carried out surveys during the COVID-19 (Abbasi et al., 2020; Bączek et al., 2020; Rajab et al., 2020; Verma et al., 2020). These challenges were similar to the findings prior to the COVID-19. While in this study technophobia was not seen as a challenge. Because the sample comprises IT students where they are more familiar with technological tools like computers, the internet, etc. online learning requires a reliable internet connection and the necessary equipment (Bączek et al., 2020). Self-discipline is required during online learning due to a lack of supervision from lecturers. Stacy and Gerbic (2008) supported that students' maturity might increase their degree of self-discipline (as cited in Bączek et al., 2020), which was not a huge challenge in this study.

Overall perception of the students regarding online learning during COVID-19 is remarkably high (80%) while 20% of students had a negative perception. This indicates that ATI Dehiwala students' perception of online learning is high. Abbasi et al. (2020) found the majority of Pakistan students had a negative perception about e-learning, and they felt e-learning has little impact on their learning is contradictory to the findings of this study. When asked about the participants' preference regarding online learning as an option for their future learning, 82.9% agreed with the statement. Whereas, Abbasi et al. (2020) highlighted that students were not ready to adopt e-learning, which is different from the finding of this survey.

Table 2 Overall perception and category wise responses of students regarding online learning

Statement (N = 130)	Response	F (%)
Overall perception	Positive	104 (80%)
	Negative	27 (20%)
Effective learning method	Agree	88 (67.7%)
	Neutral	36 (27.7%)
	Disagree	06 (04.6%)
Online learning is fun / enjoyable	Agree	66 (50.7%)
	Neutral	49 (38.6%)
	Disagree	14 (10.7%)
Actively participated	Agree	104 (80.0%)
	Neutral	24 (18.7%)
	Disagree	02 (01.3%)
Access to online material	Agree	104 (80.0%)
	Neutral	19 (14.8%)
	Disagree	07 (05.2%)
Ability to learn on own pace	Agree	83(63.8%)
	Neutral	41 (31.6%)
	Disagree	06 (04.6%)
Comfortable surrounding	Agree	69 (53.2%)
	Neutral	49 (37.6%)
	Disagree	12 (09.2%)
Online lecture records are useful for studies	Agree	101 (77.6%)
	Neutral	21 (16.1%)
	Disagree	08 (06.3%)
Quality of online teaching is satisfactory	Agree	83 (63.8%)
	Neutral	36 (27.7%)
	Disagree	11 (08.5%)
Reduced interaction with the lecturer and friends	Agree	83 (63.8%)
	Neutral	36 (27.7%)
	Disagree	11 (08.5%)
Social isolation	Agree	71 (54.6%)
	Neutral	50 (38.5%)
	Disagree	09 (06.9%)
Technical problems	Agree	74 (57.0%)
	Neutral	46 (35.2%)
	Disagree	10 (07.8%)

## V. CONCLUSION

This study aims to examine IT students' perception of online learning during COVID-19 pandemic period. The findings of this survey provide strong support for online learning. IT students generally have higher overall perception towards online learning. Therefore, the researchers can conclude with high confidence that ATI Dehiwala IT students are willing to accept their course via online mode. We should not underestimate the challenges faced during the COVID-19 pandemic but it had positively impacted on students' education. whereas, whole world turned into alternative teaching-learning methods to continue education under lockdown situation. Under such situation student perceive online learning as safer, and comfortable. In conclusion the current study demonstrates a favorable perception on online learning during COVID-19 pandemic among students.

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