Evaluate the knowledge, attitude, and practice among undergraduate students on e-learning platforms

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***Abstract*— One of the foundational parts of the student-teacher-university connection is communication in the university environment. As more institutions migrate to the red scenario, which means that nearly the entire educational process transfers to the online system on educational teaching and learning platforms, the COVID-19 pandemic has proved the usefulness of these platforms. The objective of the present study is to assess knowledge, attitude, and practice (KAP) towards e-learning among undergraduate students. A total of 70 undergraduate students from all over the Sri Lanka participated in the study. Out of 70 only 66 are studying via online. 44 (66.67%) were females, 22 (33.33%) were males belonging to the age group 19-25 years with mean age of 20.28±2 years. Regarding availability of computers and internet facility for purpose of e-learning, 35 (53.03%) owned a personal laptop or computer; majority 65 (98.48%) of them had access to internet facility. Students had neutral KAP towards e-learning and accepted supplementation of e-learning in regular traditional teaching methods. Lack of knowledge in computer skills along with poor technological infra-structure and resources at the institution could be a challenge for implementation of e-learning. Most of the students felt that directly interacting with teachers/ lecturers is better than Online education.**

Keywords— COVID-19, KAP

I. INTRODUCTION

E-learning refers to utilization of internet technologies to enhance knowledge and performance of the learners and to improve the effectiveness of educational interventions. E-learning is also called web-based learning, online learning, or internet-based learning. It constitutes electronic devices to disseminate the content from a teacher to a student or to the learner from other electronic sources like internet. The media in e learning includes text, images, animation, live streaming of videos and audios which are made for an easy understanding. The advantage with e-learning is the increased accessibility to information, ease in updating content, personalized instruction, ease of distribution, standardization of content, and accountability. Learners have control over the content, learning sequence, pace of learning, time and this allows them to meet personal learning objectives. The development of computers and evolution of internet, Information Technology has had a positive impact on education system worldwide. E-learning can be used by teachers to improve the efficiency and effectiveness of educational interventions in the face of the social, scientific, and pedagogical challenges. The future of e-learning seems brighter with the concept of blended learning where e-learning will be mixed with the practical or classroom-based education.[1]

Hence the following study was conducted to assess the knowledge, attitudes, and practice towards e-learning among undergraduate students. This will help to identify the needs of the students in relation to application of technology for education.

II. METHODS

A cross-sectional study was done among 70 undergraduate students from 12 districts in Sri Lanka in the Month of October 2021. A pre-tested semi-structured

questionnaire was administered to assess the practice, knowledge and practices and analyzed. Data is collected through google forms. A total of 70 undergraduate students from all over the Sri Lanka participated in the study. Out of 70 only 66 are studying via online. 44 (66.67%) were females, 22 (33.33%) were males belonging to the age group 19-25 years with mean age of 20.28±2 years. T-test is used to assess practice towards e-learning before and after Covid. The P value of <0.05 was considered statistically significant.

III. Questionare structure

The questionnaire had 2 sections. One was about demographic details and other one was regarding knowledge, attitude and practice towards e-learning. The structure of the questionnaire is below.

1. Basic Information
2. Availability of e-learning resources
3. Attitude towards e-learning
4. Practice e-learning
5. Knowledge towards e-learning
6. User feedback

IV. Descriptive analysis

A. *Demographic details analysis*

- *University sector*

  As shown in Figure 1, 70% are from Government universities, 28.6% are from private university and 1.4% from other institution.

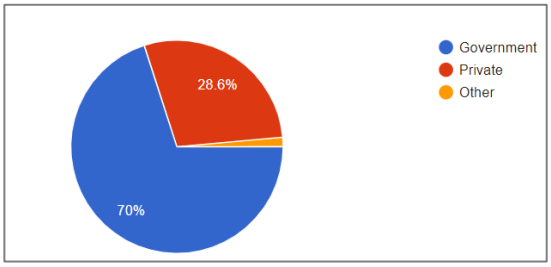

Figure 1: University sector

- *University Located District*

  As shown in Figure 2, there are 12 districts and majority are from universities in Colombo. But on over all the top, bottom, east and west parts of the Sri Lanka are covered as shown in Figure 3.

University located district	% Count
Badulla	1.52%
Gampaha	1.52%
Kurunegala	1.52%
Matara	1.52%
Nuwera-Eliya	1.52%
Kandy	3.03%
Kilinochchi	4.55%
Vauniya	4.55%
Anuradhapura	6.06%
Trincomalee	12.12%
Jaffna	18.18%
Colombo	43.94%
Total	**100.00%**

Figure 2

Figure 3

- Location of e-learning study

  As shown in Figure 4, majority are from city, 24.2% are from urban, 21.2% from rural and 3% are from Estate.

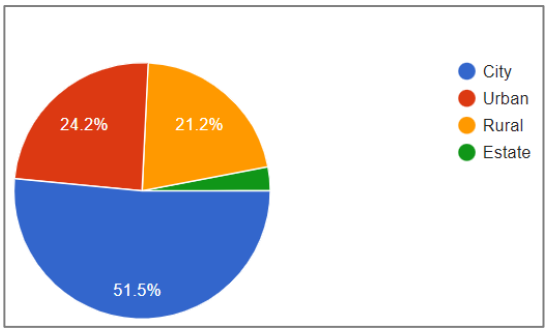

Figure 4

- *Gender*

  As shown in Figure 5, 67.1% are female and 32.9% are male.

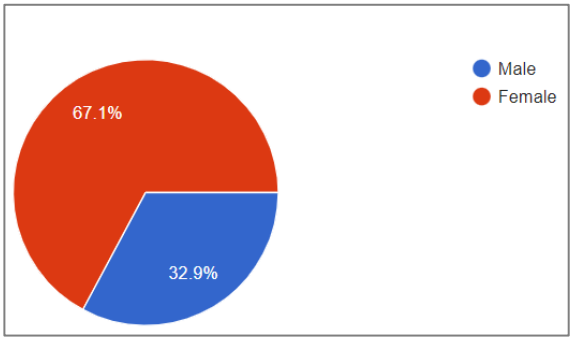

Figure 5

- *Age*

  As shown in Figure 6 the majority belongs to age group between 20 to 30. Only 1 person is less than 20 and no one above 30.

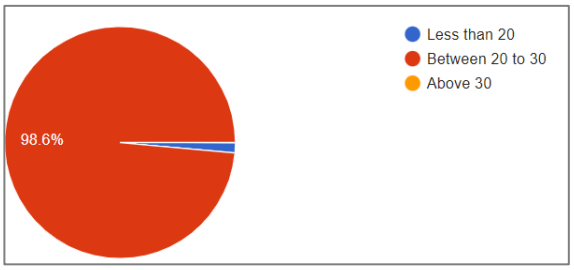

Figure 6

- *University year*

  As shown in Figure 7, majority are 2nd year students and then 4th year, 3rd year students respectively.

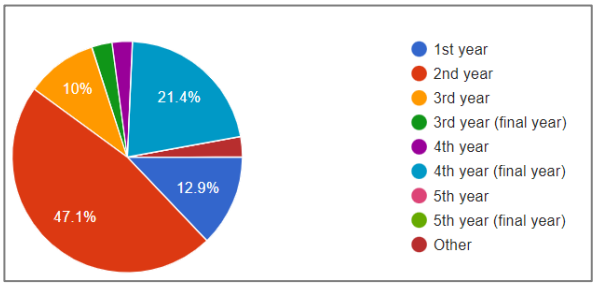

Figure 7

B. *Analysing availability of resources*

Students are using Zoom, Ms Teams, Google meet, Google classroom and Eduscope as e-learning platforms. Regarding availability of computers and internet facility for purpose of e-learning, all the students have at least one medium to study via internet. 35 (53.03%) own a personal laptop or computer, 15 (22.73%) have computer or laptop and smart phone and 16 (24.24%) have only a smart phone to study. Continuous usage of smart phone for studies can lead to eye problems and health issues in future. Therefore, proper medium must be provided for the students to study if the e-learning situation continues.

Table 1: Infrastructure available to undergraduate medical students for e-learning.

Availability of e-learning resources	Count	Count %
Laptop / computer / tab	35	53.03%
Laptop / computer / tab;Smart phone	15	22.73%
Smart phone	16	24.24%
Total	**66**	**100.00%**

As shown in Figure 8 only 31.81% have free internet access, 66.7% don't have free internet and 1 person doesn't even have proper internet access who is from Estate area.

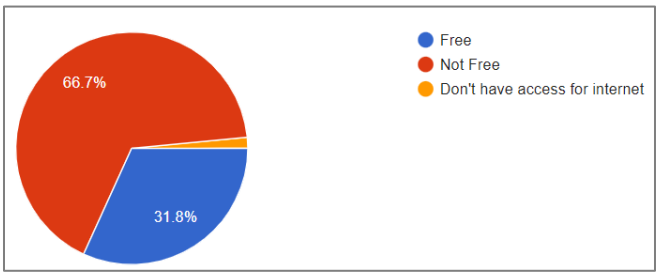

Figure 8

V. KNOWLEDE TOWARDS E-LEARNING

While understanding the students' knowledge in software applications and internet usage, it was observed that 65% are confident in browsing internet, 35% are not really confident in browsing internet as shown in Figure 9. 57% are confident in using e-learning platforms and 43% are not confident in using e-learning platforms as shown in Figure 10. 57% are confident in using e-learning platforms and 43% are not confident in using e-learning platforms as shown in Figure 10. 52% are confident in using Microsoft packages and 48% are not confident in using Microsoft packages as shown in Figure 11. 70% are confident in using Microsoft packages and 30% are not confident in using Microsoft packages as shown in Figure 12.

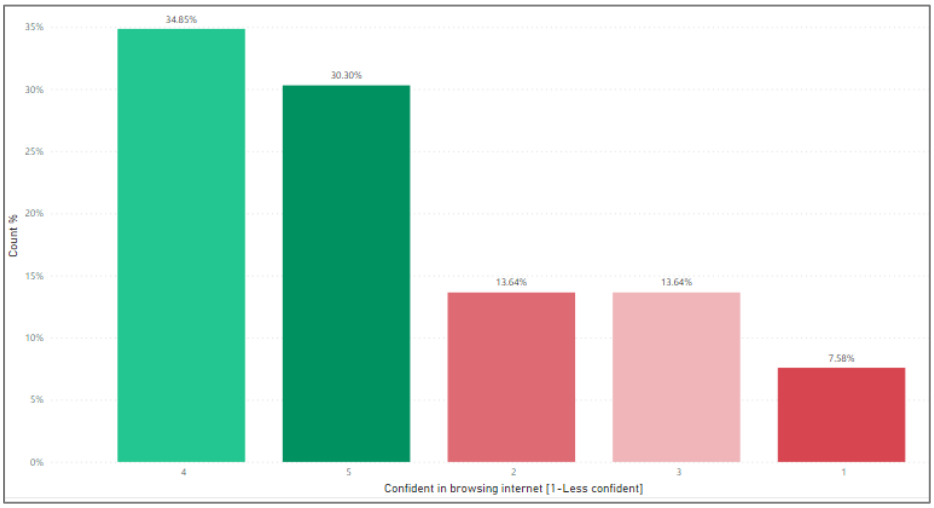

Figure 9

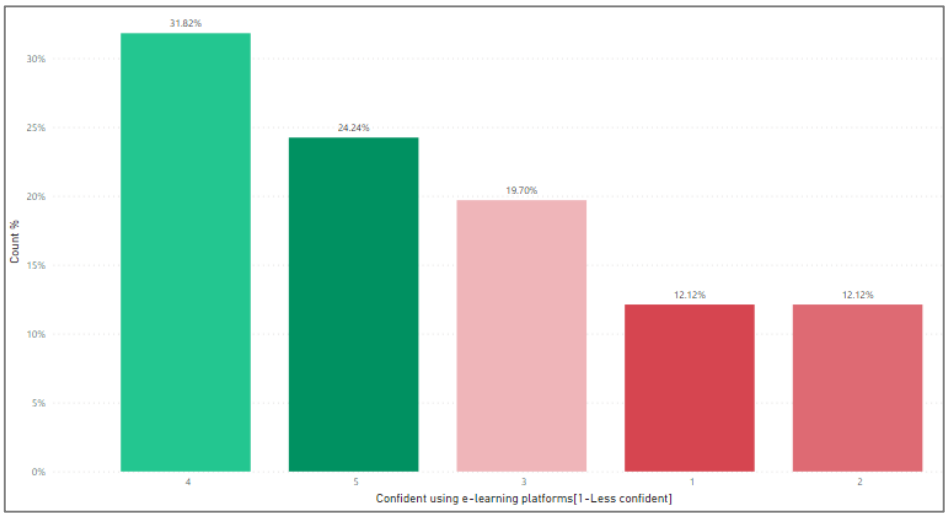

Figure 10

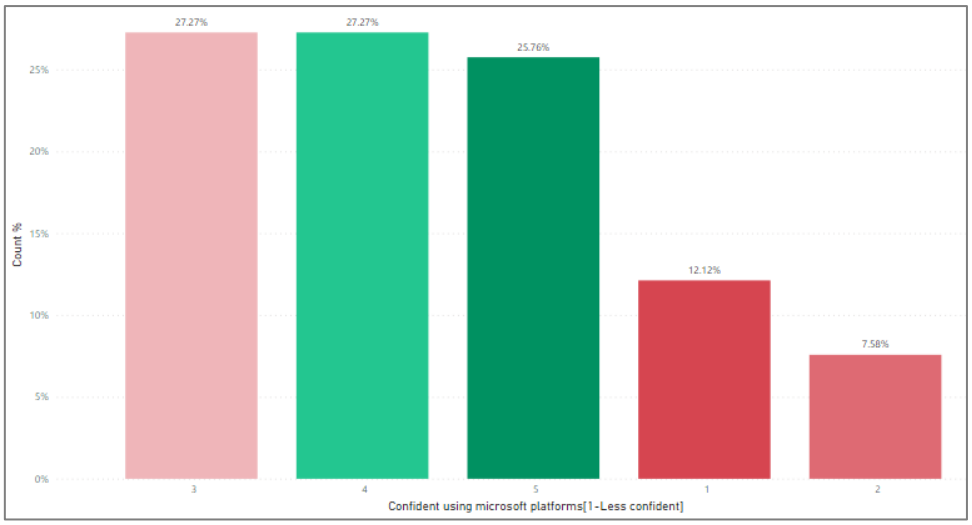

Figure 11

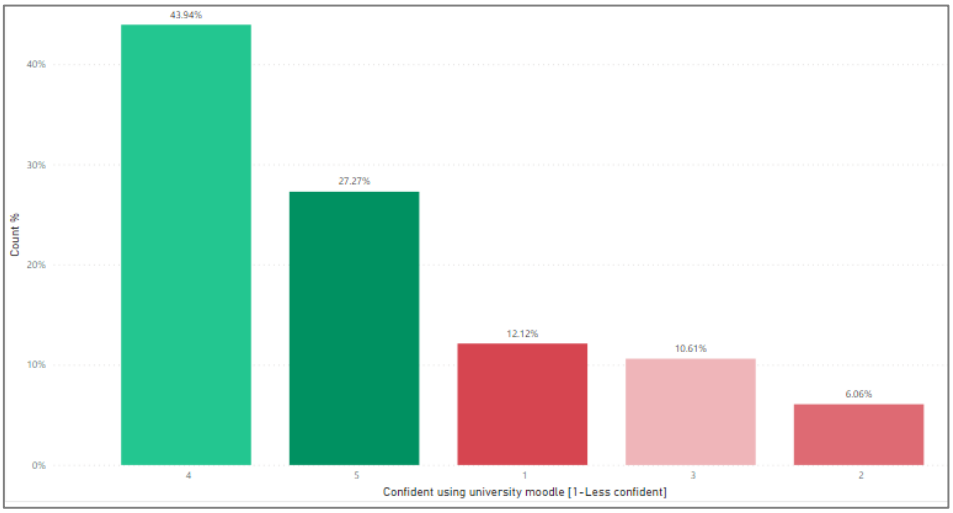

Figure 12

VI. Attitude towards e-learning

The attitude towards e-learning is assessed based on seven statements which are below using 5-point Likert scale from 1=strongly disagree to 5=strongly agree.

- E-learning is method of learning and teaching using electronic media
- E-learning is useful in my academic performance
- I review e-learning material prior to my learning sessions
- I find e-learning useful in my self-assessment
- I find e-learning useful in exam preparation
- E-learning improves standardization of teaching
- Computer or web based training should be made available to supplement lectures

The overall rating shows neutral attitude. But for statements 'I review e-learning material prior to my learning sessions', 'I find e-learning useful in exam preparation', 'Computer or web-based training should be made available to supplement lectures' and most importantly 'E-learning improves standardization of teaching' the disagreement rates are high as shown in Figure 13.

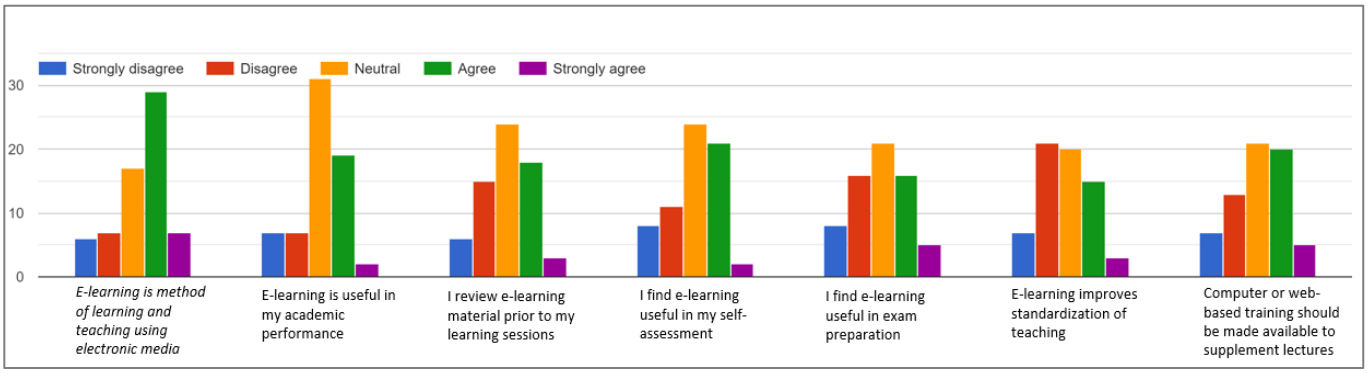

Figure 13

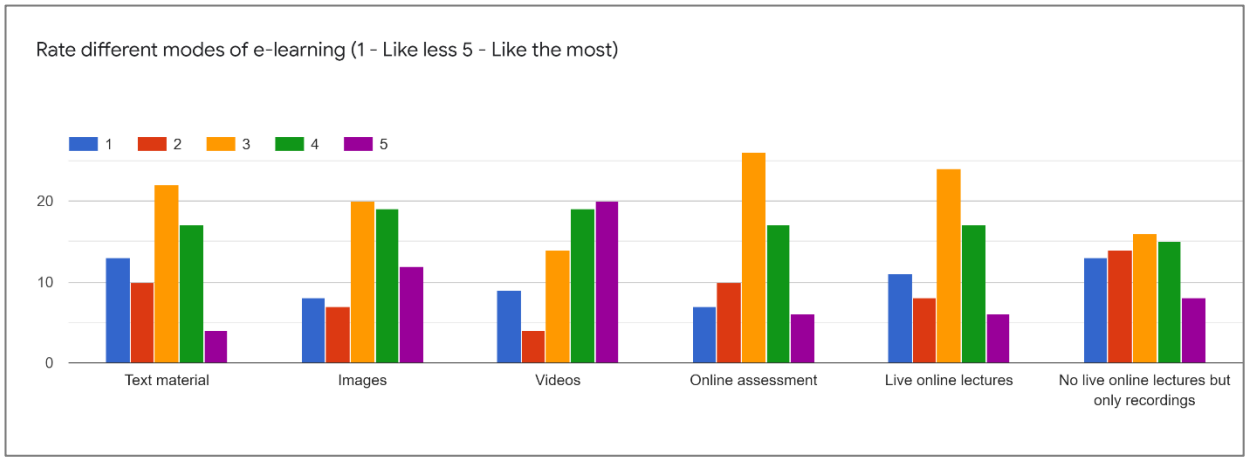

Figure 14

VII. Practice Towards E-Learning

Students' practice of using different modes of e-learning is shown in Figure 14. Online videos, Online assessment and images appeared to be the most popular aspects of e-learning to acquire skills among students compared to descriptive texts, online lectures and live lectures as shown in Figure 14.

The time spent by the participants for purpose of learning online in hours per week ranged from <5, 5-15, >15 hours with mean duration of 11 hours. year students are equally spending time on e-learning. In the present study there is a significant gender difference regarding e-learning with males spending less time when compared to female.

A statistical test has been done to analyze whether the data provide sufficient evidence to support the statement that the mean time spent after covid on e-learning per week is increased where Alpha = 0.05.

The two dependent population has been compared that are 'μ_B: mean time spent before covid on e-learning per week' and 'μ_A: Mean time spent after covid on e-learning per week'. Since these are dependent population paired t-test has been done where H0: $\mu_B = \mu_A$ (μ_B - μ_A = 0) and H1: $\mu_B < \mu_A$ (μ_B - μ_A < 0). Since n >30 we assumed the sample is large. According to the t-test the p-value was 1 which is greater than the significance level alpha = 0.05. We don't reject null hypothesis at 5% significant level. We don't have enough evidence to conclude that mean time spent after covid on e-learning per week is greater than mean time spent before covid on e-learning per week at 5% significant level.

VIII. Conclusion

A total of 70 undergraduate students from all over the Sri Lanka participated in the study. Out of 70 only 66 are studying via online. 44 (66.67%) were females, 22 (33.33%) were males belonging to the age group 19-25 years with mean age of 20.28±2 years. The dis-satisfied and very dis-satisfied percentage in availability of resources for e-learning is 9.09%. Therefore, there is need to provide necessary resources.

Students had neutral KAP towards e-learning and accepted supplementation of e-learning in regular traditional teaching methods. Lack of knowledge in computer skills along with poor technological infra-structure and resources at the institution could be a challenge for implementation of e-learning. According to the user feedback majority of the students are felt that directly interact with teachers/ lecturers is better than Online education.

IX. Reference

[1] *S. Vadlamani, L. P. Kandipudi, and D. M. Bhimarisetty, "Assessment of knowledge, attitude and practice towards e-learning among undergraduate medical students, Andhra Medical College, Visakhapatnam," Int. J. Community Med. Public Heal., vol. 6, no. 12, p. 5235, 2019, doi: 10.18203/2394-6040.ijcmph20195477.*