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STUDENTS' PERCEPTION ONONLINE ENGAGEMENT- THE SRI LANKAN CONTEXT

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Abstract: **The traditional face-to-face classroom teaching method is gradually changing. The present younger generation is more towards technology and prefer the online learning setup to the traditional method. The recent Covid-19 pandemic and the more recent financial crisis have pushed the Sri Lankan education system towards e-learning arrangements. However, there are a number of factors which affect its success. Even though many studies have been carried out in the developed nations on the online engagement of students, studies carried out in the developing countries including Sri Lanka are very much less. Some of the factors which affect online learning are unique to the respective countries. This study aims to find out the factors which affect online engagement of students in Sri Lanka. The data for the study was collected through a questionnaire electronically administered to 500 nos. of randomly selected students of higher education institutes in the Western Province of Sri Lanka and analyzed using a computer-based software package. It is hoped that the results of this study would help the higher educational institutes in Sri Lanka to develop their e-learning programmes/courses more effectively which in turn would benefit the nation as a whole in transforming the education system to suit the modern era and to cater to the present-day needs.**

Keywords **–Online Learning, E-Learning, Online engagement, Perceived satisfaction, Perception of e-learning**

I. INTRODUCTION:

Education in Sri Lanka has a long history which dates back two millennia, and the Constitution of Sri Lanka provides for education as a fundamental right. Sri Lanka's population has a literacy rate of 92%, higher than that expected for a third world country; it has the highest literacy rate in South Asia and overall, one of the highest literacy rates in Asia (MOE, 2021). In Sri Lanka there are 17 National Universities, 20 Postgraduate Institutes, 5 Universities established under different parliament acts, 6 other government owned higher educational institutes and approximately 42 non-state higher educational institutes (UGC, 2021).

The history of university education in Sri Lanka goes back to the establishment of The University of Ceylon in Colombo in 1942 by the amalgamation of two institutes, namely the Ceylon Medical College and the Ceylon University College. An education system plays a very crucial role in any country towards achieving a sustainable development and strengthening social, cultural, historical and integral development. The delivery mode of education in higher educational institutes play a significant role in their success. In the past the face-to-face learning method was used in most of the higher educational institutes around the world including Sri Lanka. However, it is currently changing, and the distance educational (including e-learning) method and blended educational methods are being currently used in a number of higher educational institutes in the world including Sri Lanka especially after the spread of the COVID 19 pandemic. During the COVID outbreak the temporary closure of schools, universities, and other educational institutions has forced over 91% of students worldwide, about 1.6 billion, to remain indoors, unable to attend their studies as usual (UNICEF, 2020).According to UNESCO, by the end of April 2020,186 countries have implemented nationwide closures, affecting about 73.8% of the total enrolled learners (UNESCO, 2020).To provide education without disruption, many educational institutions around the world including Sri Lanka adopted e-learning methods during the period.

E-learning, also referred to as online learning or electronic learning, is the acquisition of knowledge which takes place through electronic technologies and media. E-learning is defined as "learning that is enabled electronically" (Abbad et. al. 2009). Typically, e-learning is conducted on the Internet, where students can access their learning materials online at any place and time. The term e-learning has been widely used in education since the mid-90s and different definitions have been given by researchers. Some researchers view e-learning as the delivery of teaching materials viaelectronic media, such as internet, intranet, extranet, satellite broadcast, audio/video tape, interactive TV, and CD-ROM (Engelbrecht, 2005). Others see e-learning as internet-based learning which utilizes web-based communication, collaboration, knowledge transfer, and training to add value to individuals and to organizations they work within (Kelly &Bauer, 2004).

Currently in the global context, several types of e-learning tools are used which include Moodle, online conferencing tools, online chat tools, messaging tools, wiki, forum posts, community platforms, etc. The tool to be used in Sri Lankan

higher educational institutes depend on the requirements and financial capabilities of both the institute and the respective students of that institute.

Up to recent times the usage of e-learning in higher educational institutes in Sri Lanka was very low compared to the usage in other developed countries. The temporary closure of educational institutions during the COVID-19 pandemic has created the inability to deliver education through the face-to-face method and has transformed the global education landscape including Sri Lanka's in favor of e-learning. In Sri Lanka out of the total student population in both state and non-state institutions 88% of students were participating in online education by 2020 (ADB, 2020).

Recent research has found that during the COVID-19 pandemic, more than 90% of higher educational institutions (state and nonstate) in Sri Lanka have carried out e-learning and out of the total student population in both state and nonstate institutions, the majority of students have actively participated in online education (ADB, 2020). Different higher educational institutes have used different e-learning platforms in delivering their programmes/courses. The successful implementation of e-learning tools depends on the perception of the users and also their knowledge and skills in using computers. Such major factors have been shown to affect users' initial acceptance of computer technology and their future behaviour regarding the usage of web-based learning systems

This study aims to find out the perception of students ononline engagement in achieving objectives of the offered programmes/courses.

The effect of the COVID-19 pandemic is presently seen on all the sectors of the world including the educational sector. Due to this many educational institutes around the world have faced the difficulty in offering their programmes through traditional methods (face-to-face). To provide education to its students without any interruption many higher educational institutes around the world including Sri Lanka have shifted its education delivery method to e-learning which was the only feasible method during the pandemic (ADB, 2020)

However, in doing so many higher educational institutes mainly in the developing countries including Sri Lanka have faced obstacles. Infrastructure facilities needed for e-learning in many higher educational institutes and its students were lacking and not up to the required level. There has been research conducted by researchers of many countries around the world to find out the perception of students on e-learning. Compared to those studies a lesser number of studies have been done in countries with emerging economies like Sri Lanka and the findings of the previous studies done in the developing countries are rather difficult to generalize into a context like Sri Lanka (Muthugamage and. Galhena, 2021). The researcher tries to find out the perception of students on online engagement in higher education in Sri Lanka. The researcher feel that the findings of this study would be useful for higher educational institutes in delivering their programmes to students more effectively.

II. LITERATURE REVIEW

Kaplan-Leiserson (2000) define e-learning as the use of electronic devices for learning, including the delivery of content via electronic media such as Internet, audio or video, satellite broadcast, interactive TV, CD-ROM, etc. E-learning has moved from learning from the conventional method to a contemporary driven, synergistic, customised and an adaptable learning method involving learners', facilitators, and instructors (Falana, 2015). As stated by Almaiah (2018) "the success of any information system depends on the usage of the system by users". Thus, students' successful accessibility is a key factor for the success of e-learning.

There have been many studies carried out to find the perceptions of e-learning in general, but the overwhelming majority of studies have focused on users in developed countries. Whilst developing countries have much to gain from exploiting the Internet and IT in general, they have received relatively little research attention (Hasan &Ditsa, 1998)

The educational institutions which have shifted to e-learning from face-to-face learning are seeking stop-gap solutions to continue teaching, but it is important to note that the learning quality depends on the level of digital access and efficiency. The online learning environment varies profoundly from the traditional classroom situation when it comes to learner's motivation, satisfaction and interaction (Bignoux & Sund, 2018). But some researchers argue that there will be no significant difference between online learning and the face to face class with regard to satisfaction and that the online class will be as effective as the traditional class if it is designed appropriately (Adam et.al. 2012). Any efforts to strengthen the effectiveness of online learning needs to understand the perception of the users (Muthuprasad et.al. 2021).

Some researchers argue that perceptions on e-learning of men and women differ significantly. They say that men's technology-usage decisions are more strongly influenced by perceptions of usefulness and in contrast, women are more influenced by perceptions of ease of use. Men and women focus on different aspects of using computers. (Venkatesh and Morris, 2000).

The pedagogy and course design of the e-learning environment in higher education is in the form of a learner-centered approach rather than a teacher-centered approach (Debattista, 2018). The effective course content in e-learning would include an emphasis on dynamic learning and student engagement (Ashwin &McVitty, 2015). Creating an appropriate course content has a significant

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impact on the execution of effective e-learning (Little & Knihova, 2014).

Ozkan and Koseler (2009) found that there are six factors that affect the effectiveness of e-Learning namely system quality, service quality, content quality, learner's perspective, instructor attitudes, and supportive issues. However, this framework only proposed specifically for students' perceptions without empirically investigating other factors such as computer literacy and the teaching method, which also have proved to have a significant influence on e-learning (Mayerova and Rosicka, 2015).

E-Learning effectiveness' is complex and depend on the stakeholders' view. It has many dimensions. Some argue that the effectiveness of e-Learning should be judged by the same criteria and standards as face-to-face education. Others hold that conventional quality concepts are not appropriate because e-Learning is structurally different (Stella & Gnanam, 2004). Yet others argue that while certain general principles of quality should apply to both conventional and e-Learning, there are certain features unique to e-Learning that should also be addressed, such as synchronous/asynchronous interactions, open access to vast resources and distributed learning (Jung, 2005). And e-Learning typically relies to a greater extent than conventional education on learners' motivation and commitment to interactivity and collaboration, which make it more difficult to scale and assure the quality of e-Learning.

III. METHODOLOGY & DATA ANALYSIS

The researcher tries to find out the perception of students' on online engagement in higher education in the Western province of Sri Lanka.

A questionnaire was developed (mainly likert scale questions) based on the information gathered through the literature review. The questionnaire was sent online to 500 numbers of randomly selected students of higher educational institutes in the Western province. Factor Analysis was conducted, and a conceptual model developed as per major factors identified. The data was analysed using the SPSS software package.

After studying relevant literature and based on the experience of the researcher a conceptual framework for the research was developed.

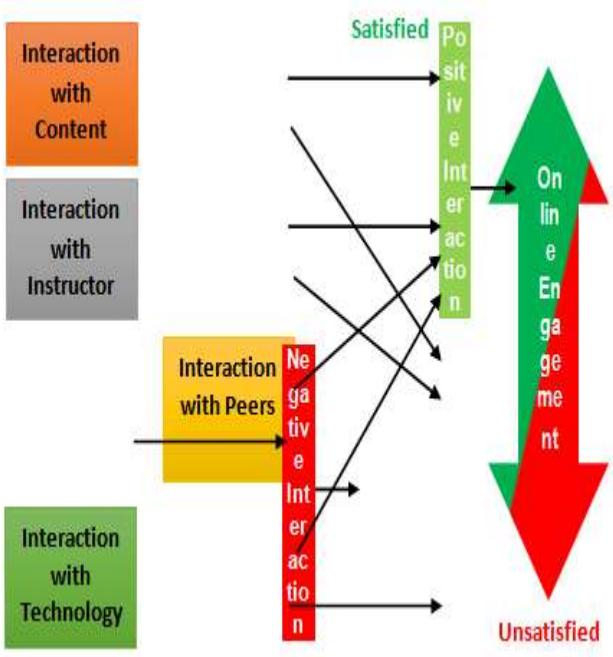

Figure 1. – Conceptual Model

The above factor categories have been divided into factors as follows.

Interaction with Content include;
- Class Notes/Lessons
- Assignments/Projects
- Quizzers/Tests
- Opportunity to apply Critical Thinking Skills
- Opportunity to apply Problem Solving Skills.

Interaction with the Instructor include;
- Active participation of the teacher
- Individual attention given by the teacher
- Prompt feedback offered by the teacher
- Facilitated communication by the teacher
- Knowing students by their name

Interaction with Peers include:
- Opportunity to solve problems together with peers
- Opportunity to share viewpoints with colleagues
- Sense of community created
- Encouraging to discuss ideas and concepts
- Prompt feedback given by peers

Interaction with Technology include;
- Knowledge of general computer usage
- Knowledge of online learning tools
- Believe that computers are useful educational tools

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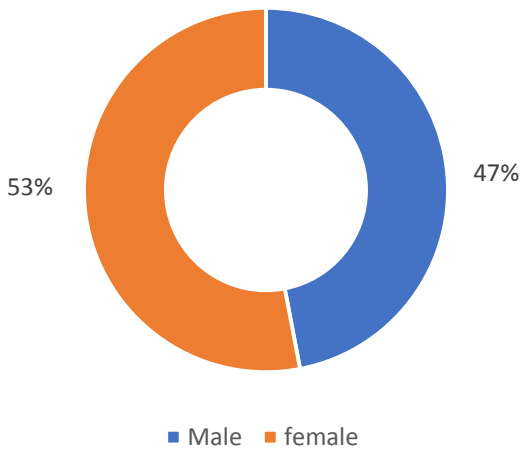
- Believe that Computer software programmes make learning simpler

Through this research the researcher tries to find out;
1. The relative importance of each factor
2. Most significant factors that influence online engagement of students

The questionnaire was developed based on the information gathered through literature review with Likert scale questions with 5-point scale: 1-Not Important, 2-Less Important, 3-Somewhat Important, 4-Important, 5-Highly Important. Several questions were included to collect demographic data of the students. The questionnaire was developed in English medium and was electronically sent to randomly selected 500nos of students studying in higher education institutes in the Western Province, Sri Lanka. Out of the sample 47% were male students and 53% were female students.

Figure 2. – Gender of Participants



IV. ANALYSIS OF DATA

The data was analysed using SPSS. In order to find out the relative importance of each factor in the factor categories a chi square test was applied. Table 1 shows the results of the chi square analysis.

Table 1 – Chi Square analysis results and Cramers V Effect Size results

Factor Categories	**N**	**X^2**	**DF**	**α**	**CRIT**	**Cramers V Effect Size**	**Rank**
Interaction with Content	500	205.477	4	0.05	9.45	0.3205	1
Interaction with Technology	500	103.452	3	0.05	7.82	0.2626	2
Interaction with Peers	500	62.607	4	0.05	9.45	0.1769	3
Interaction with Instructor	500	36.350	4	0.05	9.45	0.1348	4

The results of the chi square analysis shows that for all four categories the chi square values are more than the critical values. It shows that the factors within the factor categories have different importance levels in online engagement of the students.

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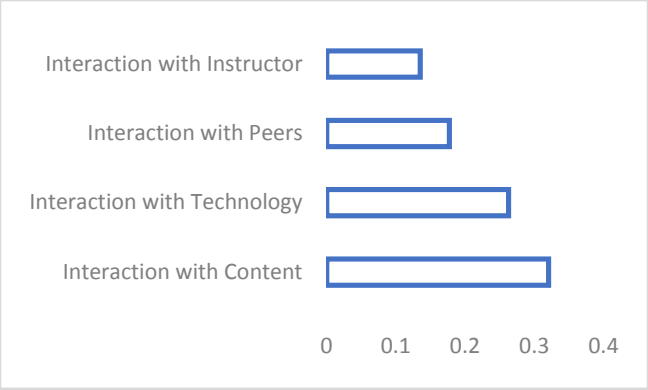
Figure 3 – Cramers V Effect Size of Categories

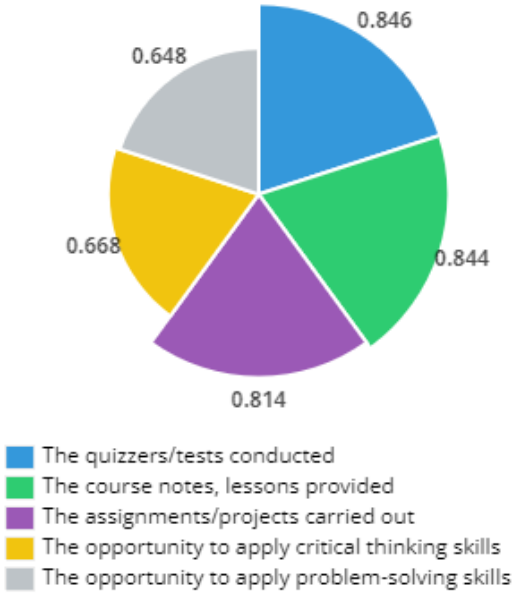


In order to find out whether the factor categories have the same importance in the online engagement process, Cramers V Effect Size was calculated and factors were ranked (Table 1, Figure 3). It was revealed that the most important factor category was" Interaction with the Content" while "Interaction with Technology", "Interaction with Peers" and "Interaction with instructor"2nd, 3rd and 4th places respectively. The relative importance index was calculated to find out which factor was most significant. (Table 2a,2b,2c,2d)

Table 2a – Ranking of factors– Interaction with Content

Factor	Relative Importance Index	Ranking
Interaction with Content		
The quizzes/tests conducted	0.846	1
The course notes, lessons provided	0.844	2
The assignments/projects carried out	0.814	3
The opportunity to apply critical thinking skills	0.668	4
The opportunity to apply problem-solving skills	0.648	5

Figure 4a – Relative importance index – Interaction with Content



From the results it was revealed (Table 2a, Figure 4a) that the most important three factors of the factor category "Interaction with the Content" were; "The quizzes/tests conducted", "The course notes/lessons provided" and "The assignments/projects conducted".

Table 2b – Ranking of factors– Interaction with Instructor

Factor	Relative Importance Index	Ranking
Interaction with Instructor		
The active participation of the teacher	0.7508	1
The facilitated communication by the teacher	0.6820	2
An individual attention given by the teacher	0.6744	3
The prompt feedback offered by the teacher	0.6720	4
The teacher knowing individual names of the class members	0.6288	5

The most important factor of the factor category "Interaction with the Instructor" was "The active participation of the teacher" and factors "The facilitated communication by the teacher", "An individual attention given by the teacher", "The prompt feedback offered by the teacher", "The teacher knowing individual names of the

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class members" have obtained 2nd, 3rd, 4th and 5th places in the category (Table 2b, Figure 4b).

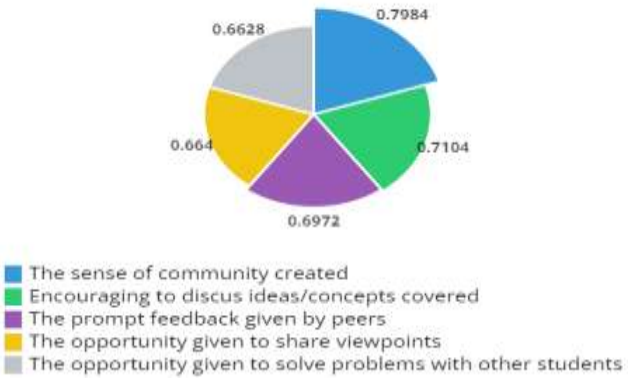
Figure 4b – Relative importance index – Interaction with Instructor

In the factors of the factor category "Interaction with Peers" the two most important were; "The sense of community created among students within the class" and "Encouraging to discuss ideas and concepts covered in the course with peers"(Table 2c, Figure 4c).

Table 2c – Ranking of factors– Interaction with Peers

Factor	**Relative Importance Index**	**Ranking**
Interaction with Peers		
The sense of community created among students within the class	0.7984	1
Encouraging to discuss ideas and concepts covered in the course with peers	0.7104	2
The prompt feedback given by peers	0.6972	3
The opportunity given to share viewpoints with colleagues	0.6640	4
The opportunity given to solve problems with other students	0.6628	5

Figure 4c – Relative importance index – Interaction with Peers



The most important two factors of the factor category "Interaction with Technology" were; "The knowledge of general computer usage" and "The knowledge of online learning tools"(Table 2d, Figure 4d).

Table 2d – Ranking of factors – Interaction with Technology

Factor	**Relative Importance Index**	**Ranking**
Interaction with Technology		
The knowledge of general computer usage	0.8832	1
The knowledge of online learning tools	0.8276	2
Believe that certain computer software programs make learning simpler.	0.7664	3
Believe that computers are useful educational tools.	0.6768	4

International Journal of Engineering Applied Sciences and Technology, 2022
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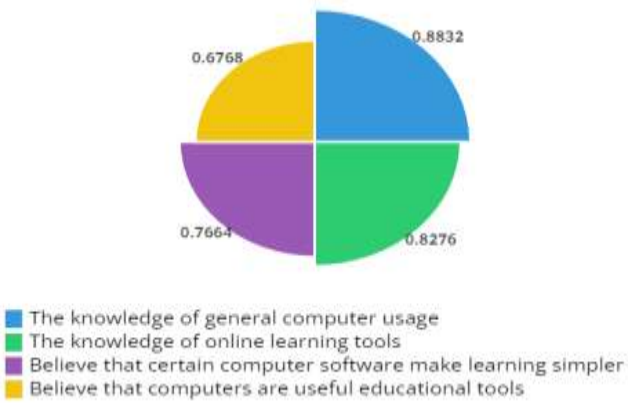
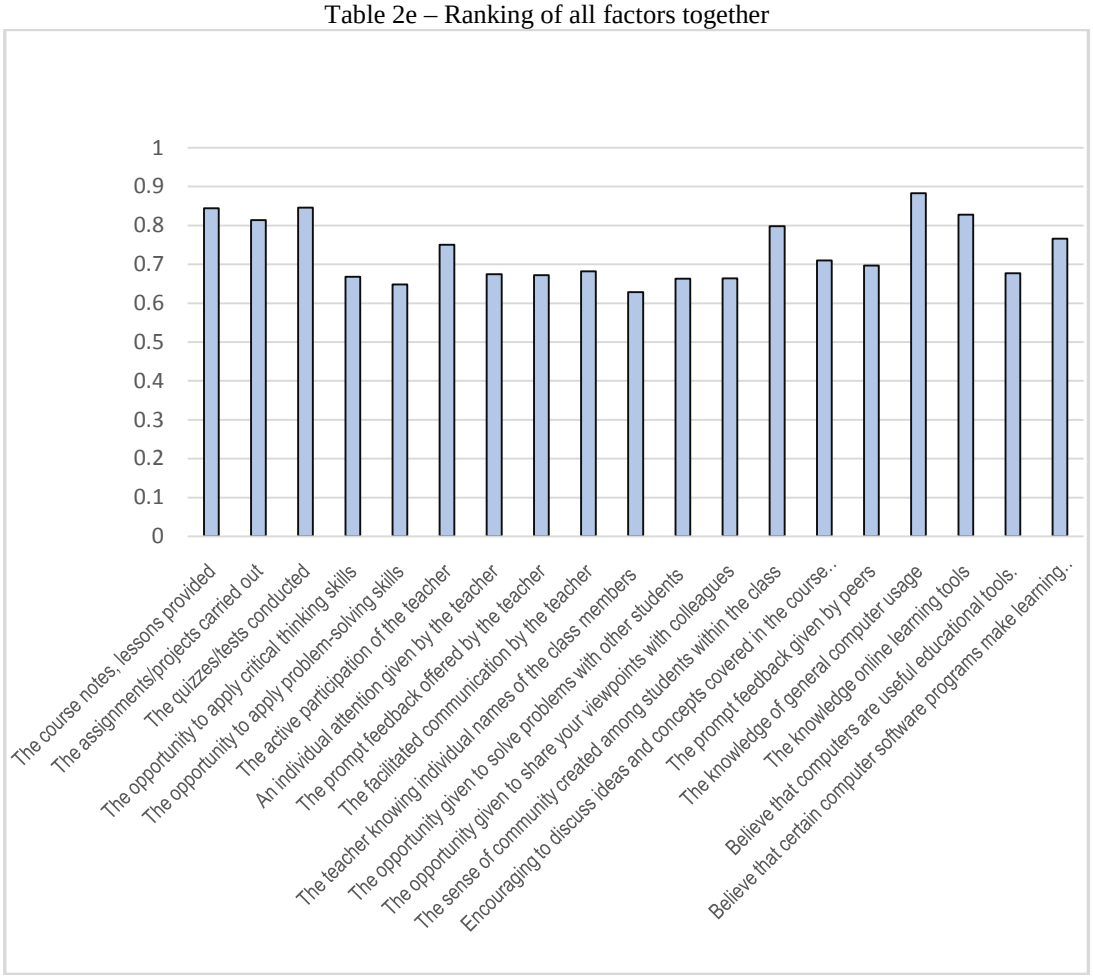
Published Online October 2022 in IJEAST (http://www.ijeast.com)

Figure 4d – Relative importance index – Interaction with Technology



When all factors are taken together the most important five factors were; "The knowledge of general computer usage", "The quizzes/tests conducted", "The course notes, lessons provided", "The knowledge of online learning tools" and "The assignments/projects carried out" (Table 2e).

Table 2e – Ranking of all factors together



Several general questions were given to get the perception of students on online learning compared to traditional face-to-face learning. When asked whether "The course has met all expectations" 68% said "Yes". When asked whether they "would like to enrol in another course with the same instructional environment", 72% said the answer was "Yes".

To the question "I would recommend this course to others", 74% of the respondents gave "Yes" as the answer.

V. CONCLUSION AND RECOMMENDATIONS

The online engagement of students in learning is very complex and involves a number of factors. Through this research the researcher tried to identify the major factors involved and the sequence of their importance. The results of this research would be useful to higher educational institutes to develop e-learning programmes/courses more effectively.

According to this research the two most important factor categories affecting the online engagement of students were" Interaction with Content" and "Interaction with Technology". The factor categories "Interaction with Peers" and "Interaction with Instructor" have obtained 3rd and 4th places respectively. However, when the factors were analysed together the most important factor was "The knowledge of general computer usage". The higher educational institutes should provide training on general computer usage to their students which will make them capable of engaging in online learning. "The quizzes/tests conducted" and "The course notes, lessons provided" have obtained 2nd and 3rd places respectively. It gives the message that when developing online programmes/courses, more importance should be given to conducting online quizzes/exams and providing class notes. The factor "The knowledge of online learning tools" has obtained 4th place when all factors were taken together. Thus, it is very important to give due training on the online platform planned to be used for the respective programme/course prior to the start of the programme/course.

This research was carried out taking a sample of 500 numbers of students only from Higher Educational Institutes in the Western Province, Sri Lanka. The sample taken may not be adequate to validate the results. The knowledge of technology and computer usage may be higher in the population of the Western Province compared to other provinces in Sri Lanka.

Conducting the same research with a bigger sample including students from other provinces in Sri Lanka may provide better results. Due to the prevailing situation in the country the questionnaire was sent electronically to students. It may be helpful to validate the results by re-conducting the research using a paper-based questionnaire.

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