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Perception about Student Engagement in Blended Learning Instructional Design: Evidence from Sri Lankan Universities

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ABSTRACT

The main purpose of this study was to evaluate students' perceptions of blended learning instructional design in universities in Sri Lanka. The COVID-19 pandemic has created challenges and disrupted the Higher Education sector; university campuses closed, and face-to-face teaching and assessment shifted to an online format. Currently, most universities are offering their degrees using blended learning instructional mode, and due to that students' feedback will be very important. The study was conducted for state universities in Sri Lanka and a structured questionnaire was distributed among students. The study's findings showed that students have a favorable opinion of blended learning programs. It is stated that students' perception of the preferred mode of learning, the impact of blended learning, the effectiveness of different blended learning tools, satisfaction regarding different components of blended learning, and finally overall satisfaction with the blended learning approach. The blended learning course appeared to have positive effects on student engagement, learner autonomy, linkage of learning to real-world situations, and flexibility.

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1. INTRODUCTION

Blended learning, also known as hybrid learning, is an approach to education that mixes online educational materials and chances for engagement online with traditional place-based classroom methods. The integration of online and internet-enabled teaching methodology into higher education institutions' curriculum has expanded in step with ICT developments to provide a high-quality teaching and learning environment focused on students. Higher education institutions have greatly benefited from the use of technology as a teaching and learning tool (Sife *et al*., 2007). It has grown more competitive in the higher education industry because of the introduction of remote and open education models (Cunha *et al*., 2020). University revenue was expected to decline before the current COVID-19 outbreak as a result of factors such as Brexit, a shifting demographic, and an increase in competitiveness for students due to the growing number of university places.

The pandemic has caused substantial difficulties in the day-to-day operations of education. Schools, colleges, and universities have been forced to go into lockdown for the past year as a direct result of this (Watermeyer *et al*., 2021). Online contingency plans have been established to continue teaching and assessing via a digital interface so that students can continue their studies despite this (Rapanta *et al.,* 2020). Emergency Remote Education (ERE) is a response by educational institutions to relocate instruction and assessment online in times of crisis (e.g. pandemics or conflict) (Shin & Hickey, 2021). Blended learning or distance learning can be used in ERE to adapt content that would normally be taught face-to-face (Shin & Hickey, 2021).

To avoid accidental and unexpected mixing, the phrase "blended learning" is defined as a deliberate and planned combination of online and classroom-based interventions, rather than a random mix of the two. Blended learning, on the other hand, involves more than simply incorporating face-to-face learning activities into an online course. On-the-job training can be done in real-time or asynchronously (Garrison & Kanuka, 2004). With the help of "asynchronous environments, students can access materials such as audio/video lectures, handouts, articles, and PowerPoint presentations," Perveen writes. Anytime, everywhere, you can get this information (Amiti, 2020). In contrast, "remote students participate in F2F classrooms using rich-media synchronous technologies such as video conferencing, web conferencing, or virtual worlds" are used in blended synchronous learning environments (Hrastinski, 2019).

For decades, Sri Lankan teacher educators and trainees have interacted face-to-face, as has been the case in most nations where conventional teaching is practiced. Some types of remote teacher education, as Burns (2011) noted, used print and audio as well as multi-media and web-based programs. The practice of distance education for teachers in Sri Lanka has been in use for decades, mostly through the use of printed modules. Although blended learning teacher education is a novel concept, especially in places where traditional teacher education has been practiced for decades, it is becoming more and more popular. The Contemporary Teaching Skills for South Asia (CONTESSA) initiative is currently developing Sri Lanka's first blended teacher education curriculum (Contessa, n.d d.). University of Graz in Austria and Dresden University of Technology in Germany are leading an EU-funded initiative aimed at enhancing teacher education ability. Sri Lankan collaborators in the project include the University of Colombo and the Open University of Sri Lanka. Technology infrastructure for online teaching and faculty capacity training for online and blended course development, teaching, and assessment are components of this intervention.

Recent surveys of students' opinions on e-learning have led us to conclude that it is the most viable educational option amid the current COVID-19 pandemic. The majority of

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students reported that online courses were helpful during an outbreak (Allo, 2020). We also discovered that e-learning increased students' motivation to learn independently and their enthusiasm for making use of digital materials. Students all over the world are experiencing this during the lockdown time due to the COVID-19 outbreak (Radha *et al.*, 2020). It was also predicted by educational networks that by 2020, 80-90 percent of all courses in higher education will be delivered in a hybrid format (Ibrahim & Nat, 2019)

Subsequently, considering all previous studies, this study intends to evaluate students' perceptions of blended learning instructional design in universities in Sri Lanka. Therefore, the main research questions for this study are as follows: (i) What is the student's perception of the preferred mode of learning?; (ii) What is the impact of students' perception of blended learning?; (iii) What is the student's perception of the effectiveness of different blended learning tools?; (iv) What is the student's perception of satisfaction regarding different components of blended learning?; (v) What is the student's perception of overall satisfaction with the blended learning approach?

2. LITERATURE REVIEW

Because of the expansion of internet-based tools for teaching and learning, teachers now have more resources available than ever before to determine which instructional strategies work best for their students (Akkoyunlu & Yilmaz Soylu, 2008). Numerous positive aspects of blended learning benefit both students and teachers. Students benefit from increased control over their education, greater leeway in their schedules, and easier access to a variety of resources. Facilitators benefit from more engagement and better autonomy as well as a more personalized educational design that is tailored to the requirements of the students.

Researchers have attempted to evaluate the effectiveness of digital technologies in the classroom as their use has expanded. The three most common types of e-learning are the "enhanced classroom," "blended learning," and "completely online" formats (Garrison & Kanuka, 2004). In the enhanced classroom version of e-learning, technologies such as computers, computer networks, projectors, smart boards, or mobile devices are typically used to augment classroom activities (Draper *et al.*, 2002). Full-time online programs, like MOOCs, don't include any face-to-face instruction (Rodriguez, 2012). Blended learning refers to a type of education in which traditional classroom instruction is combined with digital resources (Alshehri, 2017). While this classification of e-learning helps identify distinct applications of technology in the classroom, supporters of completely online learning systems have been striving to combine the best elements of traditional classroom instruction with those of more advanced online courses (Byrne, 2014).

Online teaching emerged as a possible method to promote students' learning remotely, as indicated by Hasan (2020), who did a qualitative survey on 408 students to know their opinions on online teaching–learning during the pandemic-induced lockdown. Institutions of higher learning in India and elsewhere embraced the shift to a more virtual classroom environment. Students were strongly urged to use learning management systems (LMS) like Moodle, Blackboard, etc., in addition to online conferencing and meeting tools like WebEx, Zoom, Google Meet, and Say Namaste, to continue their studies as normally as possible despite the lockdown. Recent studies have focused not just on students' reactions to these novel methods, but also on how their academic performance compares to that of students who were taught using more conventional techniques (Anthony *et al.*, 2022; Cosgrove & Olitsky, 2015; Tenison & Touger-Decker, 2018). Such research is crucial for determining whether or not a blended approach improves students' learning, and it relies on careful statistical analysis to lead the study (Francis & Shannon, 2013; Cortizo *et al.*, 2010). There is

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many research that investigate the spread of blended learning via qualitative methods. The case study method has been used by scholars like (Previtali & Scarozza, 2019) to emphasize students' appreciation for and success in a blended learning setting. (Seery & Donnelly, 2012) used a similar approach and found that providing students with access to online materials to prepare for class decreased their cognitive load and increased their academic success through blended learning.

Sri Lanka uses blended learning for both on-campus and off-campus education. Sri Lanka's Distance Education Modernization Project (DEMP), which began in 2003 with the assistance of the Asian Development Bank, considerably enhanced the availability of resources for the use of contemporary technology, particularly online education. Through the development of distance education technologies, particularly online education, the project aimed to increase access to postsecondary education in Sri Lanka while improving the quality and relevance of learning through the introduction of blended learning programs and fully online programs.

Distance education was primarily a print-based system with few in-person lectures or tutorials until DEMP introduced internet technology. An island-wide network of 26 access center facilities was also developed as part of the project. Learners were able to access these courses via the network. Other access center facilities in Sri Lanka include "Nanasala" centers (www.nanasala.lk, n.d.), developed under the e-Sri Lanka government project, and access centers established by non-governmental groups such as the Sarvodaya Foundation (www.sarvodaya.org). Low computer and Internet penetration in the nation necessitates that these centers play a crucial role in providing distant learners with access to online components of programs. In 2009, for example, just 11.4% of homes possessed a computer. If learners lack access to computers and the Internet, they may access these programs via Internet cafés. Considering the low levels of access to physical resources, such as computers and the Internet, and the low computer literacy — only 20.3% among 5-69-year-olds — prevalent in the country in 2009, it is of grave concern whether the online component of distance education is sufficiently accessible to a wide range of the intended learners.

After a period of inactivity following the advent of the COVID-19 epidemic in Sri Lanka, teachers have begun meeting with their pupils online using services like ZOOM and TEAMS, as well as social media apps like WhatsApp and Viber. These digital mediums were used for teaching purposes. However, there were many obstacles experienced by the higher education sector throughout this era. Lack of skilled workers in using virtual meeting platforms, dedicated servers for these platforms, financial challenges due to price for Internet access, bad Internet connectivity, and others. This kind of learning may be seen as a new form of face-to-face learning mode as the only difference is professor and the students are geographically dispersed. Face-to-screen learning describes the shift in educational pedagogy from traditional classroom instruction to online video conferencing. No classroom lectures were ever played for the pupils. We refer to this form of learning as Online Once (online real-time but no recorded lecture) (online real-time but no recorded lecture). Later on, educators were forced to examine the idea of recording online lectures and distributing them among the students owing to student complaints about poor Internet connections, a shortage of data cards to access the Internet, and prices for data on servers. Our group has coined the term "Online Repeatable Learning" to describe this approach to education (online real-time lecture plus recorded lecture) (Yatigammana & Wijayarathna, 2021).

Further during the covid-19 pandemic situation in Sri Lanka (Galvis & Carvajal, 2022) step by step guide to digital educational tools for successful online education. They identified the most important 9 digital tools for online and blended learning. By using this guide teachers,

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lecturers and students of the Sri Lankan education system can be able to adopt the blended learning concept easily and effectively.

3. METHOD

All undergraduate students in Sri Lankan universities were considered as the population for this study. The structured questionnaire was prepared to collect the data based on prior studies (K. K. & Maskari, 2019). The convenient sampling technique was adopted to select 400 undergraduates for the sample. The first section of the questionnaire consisted of information on demographic factors while the remaining sections contained 44 questions and collected information on students' perception of blended learning instructional design in universities in Sri Lanka on a five-point Likert scale. In addition, the questionnaire asked respondents to assess the influence of blended learning on their learning style and performance. Some questions also concentrated on evaluating the traditional teaching method with integrated learning. The Cronbach Alpha coefficient, which is a tool that is used to quantify the internal consistency of a test or scale, was used in the questionnaire to determine its level of reliability. The term "internal consistency" refers to the degree to which all of the items on a test assess the same notion or construct; as a result, it is associated with the degree to which the items on the test are connected (Tavakol & Dennick, 2011). The conceptual diagrams presented below have been developed based on the literature. According to **Figure 1**, the perception of student engagement in blended learning instructional design can be explained by the above-mentioned independent variables.

The study is going to evaluate students' perception of blended learning instructional design in universities in Sri Lanka. Statistical Package for the Social Science (SPSS) was utilized for the analysis. Using questions based on a Likert scale with five points, a weighted average was calculated.

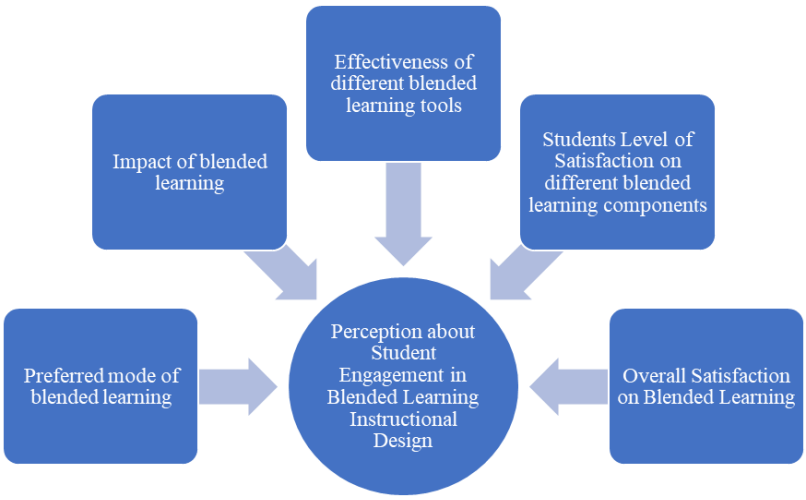

Figure 1. Conceptual diagram.

4. RESULTS

4.1. Demography

The total number of students who participated in the study was 414. However, 400 completed questionnaires were taken for analysis. 14 questionnaires were removed during the editing process as it was not complete. The data summarizes the demographic variables identified through the questionnaire. In this study, 39% of the students who participated were male, while 61% of the students were female. Among the participants, 94% attended a course

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in blended learning mode for the first time. The maximum number of respondents are from the age category of 20-29 years. It is nearly 94%. Out of all the participants, only 6% of participants are below the age of 20 years.

Reliability analysis refers to the fact that a scale should consistently reflect the construct it is measuring. For that purpose, the value of Cronbach's alpha is used. According to the Taber (2018), the acceptable level, good level, and excellent level of Cronbach's alpha value are 0.7, 0.8, and 0.9 respectively. **Table 1** summarizes the Cronbach's alpha values of each variable tested for the questionnaire survey. The reliability of the preferred mode of blended learning instruction is about 0.658 and it shows less significance. The acceptable threshold for the remaining four variables is more than Cronbach's Alpha, which is 0.7.

Table 1. Summary of reliability test.

Variable	Cronbach's Alpha
Preferred mode of blended learning instruction	0.658
Impact of blended learning	0.701
Effectiveness of different blended learning tools	0.943
Students' Level of Satisfaction with Different Blended Learning Components	0.964
Overall Satisfaction with Blended Learning	0.947

4.2. Objective 1: To evaluate the students' perception of the preferred mode of learning

4.2.1. Preferred Mode of Instruction – Overall

Students were asked to rate the degree to which they preferred different types of blended learning instruction in this course, such as (a) minimal use of technology and mostly face-to-face instruction, (b) equal mix of technology and face-to-face instruction, and (c) extensive use of technology and minimal use of face-to-face instruction. As shown in **Table 2**, it is identified that students prefer an equal mix of technology and face-to-face instruction (Weighted Average: 3.47). A completely online instruction is not preferred by this sample of students and, therefore, they ranked it the lowest (Weighted Average: 2.38).

Table 2. Summary of reliability test.

Variable	Weighted Average	Rank
Preferred mode of blended learning instruction	0.658	
Impact of blended learning	0.701	
Effectiveness of different blended learning tools	0.943	
Students' Level of Satisfaction with Different Blended Learning Components	0.964	
Overall Satisfaction with Blended Learning	0.947	

The results are consistent with views expressed in other research (e.g., (Mather & Sarkans, (2018); Castle & McGuire, 2010); Owston *et al*., 2013) where it is expressed that students' preferences about the mix of face-to-face and online classes might vary greatly. The mode of instruction preferred mostly was 'An equal mix of technology and face-to-face instruction.

4.2.2. Preferred Mode of Instruction - Gender Wise

Table 3 shows the preferred mode of instruction based on gender. There are differences in preferences between male and female students on the mode of blended learning instruction. The analysis revealed the highest preferences of male students are towards an equal mix of technology and face-to-face instruction in blended learning (Weighted Average: 3.61). However, the highest preference of female students was towards completely face-to-

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face instruction (Weighted Average: 3.48). This is also witnessed in the last row "completely online with no face-to-face instruction", although male students do not prefer fully online courses; their female counterparts have rated this option with stronger disagreement (2.22) and rated the first option with complete face-to-face higher than the male students.

Previous research on blended learning has also revealed the influence that students' gender has on their level of involvement with the method. There are noticed to be two different points of view. There is research that shows male students are more engaged in online mode, and these findings reinforce that fact (Blaise & Taylor, (2012); Weber & Custer, 2005). In support of this contention, much research has shown that female students have little interest in the pedagogical approach of blended learning in and of itself (Shroyer *et al*., 1995). Compared to research conducted in the United Arab Emirates, Tamim (2018) discovered that BL had a good effect on women's empowerment. In conclusion, gender, subject area, and internet usage are characteristics that correspond with variances in the competencies. According to research Kosar (2016), the degree of education and cultural sensitivity also influence the extent to which students are prepared to adopt the blended learning paradigm.

Table 3. Preferred mode of instruction - gender wise.

Mode of Instruction	Weighted Average	
	Male	Female
Completely face-to-face (lecture) instruction	3.25	3.48
Minimal use of technology, mostly face-to-face	3.32	3.30
An equal mix of technology and face-to-face instruction	3.61	3.38
Extensive use of technology, less face-to-face instruction	3.23	2.71
Completely online with no face-to-face instruction	2.63	2.22

4.3. Objective 2: To evaluate the students' perception of the impact of blended learning

According to **Table 4**, it is observed that most of the students commented that their learning has improved in the blended learning courses (Weighted Average: 4.01). Further, students identified that the blended learning course is more interesting to learn with a weighted average of 3.18 and there is a difference between blended learning and the general learning method with a 2.35 weighted average value. According to a study by K. K. and Maskari, 2019, 60.71% of students found blended learning courses to be more engaging than conventional courses. Almost all students, 96%, saw differences between a traditional course and a blended learning course, and more than half of students, 57.14 %, said that their learning had increased in blended learning classes.

Table 4. Impact of blended learning.

Comments	Weighted Average
There is no difference	2.35
My learning improved in blended learning courses	4.01
I could relate my learning to real-life examples	3.09
The blended learning course is more interesting to learn	3.18

4.4. Objective 3: To evaluate the students' perception of the effectiveness of different blended learning tools

Typically, students were provided with PowerPoints, short videos, and case studies before lectures and advised to prepare. The lecturer or tutor focuses more on discussing the content

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with the students than teaching throughout the lecture. In addition, a variety of instructional strategies and technologies are employed to engage students in their learning and assess their learning experience. Different teaching tools and techniques are used., such as Moodle, Online quizzes, social media, educational loans, etc (listed in **Table 5**).

Table 5. Effectiveness of different blended learning tools.

Rate Effectiveness of	Male	Female	Overall
Moodle – E-learning platform	3.41	3.21	3.29
Online Quiz	3.63	3.43	3.59
Social Media for information sharing	4.06	3.52	3.86
Educational games	3.45	3.03	3.20
Digital badges	3.39	3.07	3.20
Webinars	3.64	3.35	3.46
Blogs	3.41	3.26	3.32
Open Online Course Materials	3.85	3.41	3.53
Case Study Approach	3.48	3.29	3.37
Story mapping	3.59	3.23	3.37

Moodle is a free and open-source course management system written in PHP and distributed under the GNU Public License. Moodle is a popular platform for online education strategies including blended learning, distance learning, the flipped classroom, and more. Course-related resources (course materials, case studies, videos) and conversations take place through social media platforms including Facebook, WhatsApp, and Telegram. The instructor encourages students to submit their questions, which are then answered by their classmates and verified by the instructor. Among these, the use of social media for sharing information is rated most effective by the students (Weighted Average: 3.86), followed by Online quizzes (Weighted Average: 3.59) and Open online course materials (Weighted Average: 3.53). In Sri Lanka, social media are now utilized extensively for blended learning. WhatsApp is often used by students to communicate information with one another. Through WhatsApp, case studies, videos, PowerPoint slides, and texts are sent. It is often used to create discussions between students and the instructor. Additionally, critical notices about lectures and assessments were sent through social media. This allowed for more flexibility, and the interaction enhanced the students' level of comprehension.

4.5. Objective 4: To evaluate the students' perception and satisfaction regarding different components of blended learning

As shown in **Table 6**, the many aspects of blended learning, including student participation, online communication, and feedback, are evaluated based on the level of student satisfaction. Students assessed their level of satisfaction on 17 items using a five-point Likert scale. The highest ranking (Weighted Average: 4.32) is for the use of social media in teaching and learning, followed by Blended learning on becoming an independent learner (Weighted Average: 3.60) and the sharing of course-related material (Weighted Average: 3.60).

Students evaluated the following components highly: (a) the use of social media for communication; (b) blended learning on becoming an independent learner; (c) the sharing of course-related material through traditional and online methods; and (d) the variety of information. In conclusion, the study found that blended learning as an instructional design is widely accepted due to its capacity to successfully engage students, provide a sense of belonging, encourage student ownership of learning outcomes, and enhance communication between the learner and facilitator.

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Table 6. Students level of satisfaction with different blended learning components

Blended Learning	Weighted Average
Social media (Facebook, WhatsApp) for communication	4.32
Effect of Blended learning on making an independent learner	3.60
Sharing of course-related information using online and traditional mode	3.55
Variety of information	3.50
Online communication for social interaction	3.49
Ease in interaction	3.47
Timely feedback on my performance	3.46
Motivation to explore content-related questions	3.45
The level of mixing different tasks in a way to supports learning	3.44
Online quizzes and other activities	3.43
Encouragement to explore new concepts	3.41
Student Engagement in productive online and face-to-face discussions	3.39
Ease in discussion and participation through the online medium	3.38
Student Academic Productivity & Learning Performance	3.37
Sense of belonging in the course	3.35
Student understanding of the subject	3.34
Relating theory to real-life examples	3.26

4.6. Objective 5: To evaluate the students' perception of overall satisfaction with the blended learning approach

Overall student satisfaction at Sri Lankan universities is encouraging for the implementation of blended learning in other courses. As seen in Table 6, students have given blended learning a good rating since it has enhanced their learning experience. Student participation is the most important component in higher education institutions' adoption of blended learning as successful. Based on data from the literature (Kuh, 2001), it may be stated that blended learning produces independent, engaged, and motivated learners.

The perceptions of students towards blended learning are examined using **Table 7**. The adoption of blended learning instructional design is mostly due to the existence of engaging classrooms, the sharing of knowledge, the use of many instructional techniques, and, most importantly, its capacity to train students to become independent learners. As seen in **Table 7**, students evaluated the advantages of blended learning from differing perspectives.

Table 7. Overall satisfaction with blended learning.

Comments	Weighted Average
Studying with a blended learning approach makes my work easier	3.56
Overall, I am satisfied with this blended learning course	3.42
Studying with a blended learning approach is a wise idea	3.39
Blended learning makes me an independent learner	3.39
It is necessary to take blended courses to prepare me for a future job and keep up with the trends	3.37
Given the opportunity I would take another blended learning course in the future	3.33
I have no difficulty accessing information using the e-learning system in the college	3.31
Given the opportunity, I would recommend blended learning courses to other students	3.27
I prefer to use e-learning (online materials, online quizzes, online communication) in other courses too	3.15

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4.7. Objective 6: To evaluate the relationship between Preferred Mode of Instruction and Student's Overall Satisfaction

The correlation between the Preferred Mode of Instruction and Student's Overall Satisfaction is represented in **Table 8**. There was a moderate positive relationship between Extensive use of technology, less face-to-face instruction, an equal mix of technology and face-to-face instruction, and completely online with no face-to-face instruction with the Student's Overall Satisfaction, and values of the correlation were 0.670, 0.565, and 0.480 respectively. The significant value was 0.000 for all Modes of Instruction Completely face-to-face (lecture) instruction, an equal mix of technology and face-to-face instruction, Extensive use of technology, less face-to-face instruction, and completely online with no face-to-face instruction which was less than 0.05. The Mode of instruction of Minimal use of technology, mostly face-to-face has an insignificant positive weak relationship with Student's overall satisfaction in state universities in Sri Lanka. In conclusion, it can be identified that students in state universities in Sri Lanka are mostly satisfied with extensive use of technology, and less face-to-face instruction in the classroom.

Table 8. Relationship between preferred mode of instruction and student's overall satisfaction.

		Overall Satisfaction
Completely face-to-face (lecture) instruction	Pearson Correlation	0.314**
	Sig. (2-tailed)	0.000
	N	400
Minimal use of technology, mostly face-to-face	Pearson Correlation	0.149
	Sig. (2-tailed)	0.333
	N	400
An equal mix of technology and face-to-face instruction	Pearson Correlation	0.565**
	Sig. (2-tailed)	0.000
	N	400
Extensive use of technology, less face-to-face instruction	Pearson Correlation	0.670**
	Sig. (2-tailed)	0.000
	N	400
Completely online with no face-to-face instruction	Pearson Correlation	0.480**
	Sig. (2-tailed)	0.000
	N	400

**. Correlation is significant at the 0.01 level (2-tailed).

5. DISCUSSION

This study's main aim is to evaluate students' perceptions of blended learning in Sri Lankan universities. The research revealed a favorable disposition toward integrating blended learning instructional design in their various courses. The use of experimental research design to examine the development of students in courses using traditional teaching methodology and blended instructional design is advised. These studies can contribute to the literature on the relative effect of blended instruction on student learning and the learning experience.

In this study, utilizing primary data, the influence of blended learning on student involvement is examined. The students were exposed to a blended learning course, and their perceptions were gathered utilizing a standardized questionnaire. According to the first research question of this study, it was identified that student's perception of the most preferred mode of learning. It can be concluded that students prefer an equal mix of technology and face-to-face instruction. Secondly, the researchers found the impact of

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students' perception of blended learning. Results concluded that student's learning has improved in the blended learning courses with the highest weighted average. Thirdly, researchers focus on students' perceptions of the effectiveness of different blended learning tools. The use of social media for sharing information is rated most effective by the students. The fourth research question, it is identified students' perceptions of satisfaction regarding different components of blended learning. Students assessed their level of satisfaction on 17 items using a five-point Likert scale. The highest ranking is for the use of social media in teaching and learning. Finally, we identified the students' perception of overall satisfaction with the blended learning approach. Most of the students commented that studying with a blended learning approach makes their work easier.

Further, it is identified that students in state universities in Sri Lanka are mostly satisfied with extensive use of technology, and less face-to-face instruction in the classroom. In the final part of this study, we summarized the key benefits of blended learning, the challenges faced by students and what are suggestions to be improved from this blended learning.

As a highly essential stakeholder in blended learning, students impact the success or failure of implementation. This study's primary objective was to determine how students perceive different components of blended learning. Nonetheless, it is essential to gather their opinion about the most successful components of blended learning. This analysis will assist the facilitator in constructing blended learning more effectively. In this respect, an open question was posed, and student answers were gathered. The emphasis of the inquiry was on the advantages of bringing blended learning into classrooms. The following were recognized by students as the most beneficial components of blended learning.

(i) Students can learn anytime and anywhere letting students learn without the barriers of time and location but with the possible support of in-person engagement.
(ii) Blended learning offers a platform to facilitate greater interactivity between students and teachers or lecturers
(iii) Students have more autonomy over their learning
(iv) Can access to global resources and materials that meet the student's level of knowledge and interest
(v) Students can also learn through a variety of activities that apply to many different learning styles
(vi) Students can track their progress
(vii) When technology is integrated into university lectures, learners are more likely to be interested in focused on, and excited about the subjects they are studying.
(viii) Students can reach their goals. They become safe driven and responsible, tracking their individual achievements beach help develop the ability to find the resources or get the help they need.
(ix) Promote student ownership
(x) Allow instant diagnostic information and student feedback
(xi) Blended learning programs provide a safer learning environment, and it is increasing student engagement
(xii) Access and enroll more students with blended learning programs
(xiii) Different type of students learns different things in different ways
(xiv) Peer support

Adopting a new teaching method in a limited-resource context is typically a challenging task for early adopters (Kenney & Newcombe, 2011). Successful implementation involves "organizational readiness" (Kim & Bonk, 2006), which includes the provision of infrastructure facilities and faculty training (Green *et al*., 2010). Dukes *et al*. (2006) and Mader *et al*. (2008)

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determined that blended learning infrastructure comprises technological, organizational, and political infrastructure. As previously said, implementing any change presents obstacles. Listed below are student perspectives on a variety of problems associated with blended learning: (i) Buying the right classroom technology; (ii) Maintain classes and student progress; (iii) The problem with the quality of network and Internet connectivity; (iv) Students have challenges with the cost of dining location available learning and teaching preference; (v) Requires to create comfort with technology; and (vi) Expensive technology.

Overall, student opinion is favorable of introducing blended learning in ICT. However, infrastructure and academic support from the stakeholders is necessary for this deployment to be successful. According to student input, the implementation of blended learning must take into account the following: (i) Determine the course interactivity; (ii) Try a flipped classroom; (iii) Use videos as teaching and learning aids; (iv) Group collaboration and interaction; (v) Assignment and provisions (apply online quizzes for all courses); (vi) Tips to create the perfect blended learning environment; and (v) Provide more facilities for both students and teachers.

6. CONCLUSION

Blended learning is a student-centered instructional design that blends both traditional face-to-face lecture techniques and online methods and technology. Blended learning may be thought of as a hybrid between traditional face-to-face learning and online learning. When compared to the traditional lecture style, the utilization of online social media and e-learning platforms in an online setting contributed to an overall improvement in the quality of the educational experience by making it simpler for the student to grasp the material being covered. Learner autonomy, flexibility, better communication and discussion, and most importantly, the real-world experience gained through blended learning courses are the primary reasons for the success of blended learning instructional design. According to the findings of the study, blended learning is not only an acceptable method of instructing students, but it also can significantly improve both the teaching and learning experiences that students have in institutions in Sri Lanka. In conclusion, the research offered a look into the learner's perspective on how blended learning is implemented, and it concluded that blended learning is an effective instructional design that can be used in classrooms.

7. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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