A Study on Satisfaction towards Online Learning among the Tourism & Hospitality Management Students during Covid 19 Pandemic

E.W. Biyiri, D.M.M.I. Dissanayake
Faculty of Management Studies, Rajarata University of Sri Lanka

Abstract

Many higher education institutions in Sri Lanka are currently either offering online courses for their students or are planning such initiatives due to the Covid 19 crisis. Since, there was a sudden shift from traditional classroom teaching to online teaching, it is important to measure the satisfaction of the students in this new learning experience. Identifying and measuring the influence of various factors which determine the students' satisfaction in the online teaching and learning experience is timely significant. Therefore, this study was carried out to examine the influence of interaction, internet self-efficacy, and self-regulated learning on tourism and hospitality management students' satisfaction with online learning during the Covid 19 crisis. The sample for the study was selected from three state universities that offer Tourism and Hospitality Management Bachelor Degrees in Sri Lanka. A structured questionnaire was developed and distributed online. A total of 209 responses were received for the final analysis. Both correlation and regression analysis were employed to determine the contribution of predictor variables to student satisfaction. The findings revealed that all three variables were good predictors of student satisfaction while internet self-efficacy has the highest predicting power in determining the students' satisfaction in the online learning process.

Keywords: Covid 19, Internet self-efficacy, Online learning, Self-regulatory learning, Students' satisfaction

Introduction

The tourism industry is one of the main industries in Sri Lanka, which contributes towards the growth and development of the country by bringing numerous economic values and benefits. Considering the industry requirements, the higher educational institutes in Sri Lanka have introduced many degree programs for the students to study tourism, hospitality, and event management (Samarathunga & Dissanayake, 2018: Dahanayake, et al., 2019)

The COVID-19 has resulted in the closure of educational institutes including universities across the world. Nevertheless, educational pursuits should not be ceased due to the pandemic. The use of information technology has led to a solution for educational institutions to introduce online learning environments within the institutions during the time of crises. As a consequence, the educational institutes have to consider moving to online teaching and learning environments within the institutions, which can ensure the continuity of students' learning.

The closure of the educational institutes in Sri Lanka due to the COVID 19 outbreak accelerated changes in the higher education system with the distinctive rise of online learning,

*Corresponding Author: E.W. Biyiri - *edinab@mgt.rjt.ac.lk*

whereby teaching is undertaken remotely and on digital platforms. Many universities in Sri Lanka have taken measures to implement online education to ensure that learning would not be disrupted.

Though the concept of online teaching and learning is not new, it was challenging for both teachers and students in Sri Lanka to switch into online teaching and learning suddenly since it requires students' and teachers' readiness to switch into online mode, experience in online teaching and learning, and technology infrastructure (Dissanayake et al, 2021). Therefore, it's vital to measure the satisfaction of the students in this new paradigm.

It has been anticipated that tourism hospitality and event management students tend to have different learning styles from students of other degree programs as the subject matters are more vocational (Barron & Arcodia, 2002; Dale & McCarthy, 2006; Hsu, 1999; Loo, 2002). Therefore, when shifting from face-to-face learning to online teaching and learning it is also necessary to consider how students exchange information and knowledge with peers and instructors through interaction and construct new knowledge. Therefore, interaction has been regarded as a core factor in the learning experience (Moore, 1989; Jung, Choi et al, 2002) and student satisfaction reflects how students perceive their learning experiences. According to Debourgh (1999) and Koseke & Koseke (1991), highly satisfied students are more persistent in their learning, and providing students a satisfying experience helps to maintain and improve retention. Since online learning during the COVID-19 pandemic has been emerged and adopted quickly shifting away from classroom learning, it is of utmost importance to investigate how students are satisfied with the new learning experience.

Various scholars have explored the factors that contribute to student satisfaction in online learning environments (Bray, Aoki, & Dlugosh, 2008; Chejlyk, 2006; Keeler, 2006; Robles, 2006). With the sudden shift away from face-to-face learning and adoption to agile online learning, the way of students' interaction with their peers and teachers have been transformed. Hence, this study aims to explore the influence of interaction, internet self-efficacy, and self-regulated learning on tourism and hospitality students' satisfaction towards online teaching and learning during the COVID -19 outbreak.

This study provides valuable insights for the Sri Lankan higher education sector to determine the students' satisfaction towards online learning and teaching and how interaction, internet self-efficacy, and self-regulated learning influence students' satisfaction towards online learning and teaching during the COVID -19 outbreak.

Literature Review

The development of information and communication has led to many changes in the different fields including the educational field. An innovative new form of education has emerged, which is called distance learning or, e-learning or online learning, and refers to methods of learning through the use of any electronic medium. It is also known as virtual education, online training, open training/open-learning, open courseware, and web-based learning (Baker & Unni, 2018). Terms such as computer-based education, computer-based instruction, computer-supported learning, distance education, ICT-based learning, web-based learning, and online learning seem to be used interchangeably by different authors (McFarlane, Bradburn, & McMahon, 2003). For this study, the authors focus on online teaching and learning, which can be defined as a course that has no face-to-face interaction; all communication and interactions between instructors and students, educational content, learning activities, are integrated and delivered online (Chew, et al. 2019).

Universities and other higher education institutes refer to student satisfaction as one of the main predictors in defining the quality of the course or degree program (Yukselturk & Yildirim, 2008). Since online education has become the most useful way of delivering method in higher education during this pandemic period, measuring the students' satisfaction concerning online learning is of utmost importance. The studies reveal many factors which determine student satisfaction such as interaction, self-efficacy, and self-regulated learning (Bray, et al, 2008; Chejlyk, 2006; Keeler, 2006; Robles, 2006; Artino, 2007; Bolliger & Martindale, 2004; Reinhart & Schneider, 2001)

Many studies suggest that interaction is one of the major predictors of student satisfaction in online or web-based learning environments. Further, interaction is considered as an essential element to student learning and the overall success and effectiveness of distance education (Bruning, 2005; Burnett, et al., 2007; Fresen, 2007; Kearsely, 2000; Moore, 1993).

Moore (1993) explains that there is a transactional distance in a distance learning environment since the instructors and the learners do not interact in the same physical and temporal space. Further he recognized three types of interaction, which are essential for learning in distance education to overcome the potential shortfalls due to transactional distance; Learner-learner interaction, Learner-instructor interaction, and Learner-content interaction.

Learner-learner interaction is two-way reciprocal communication between or among learners who exchange information, knowledge, thoughts, or ideas regarding course content, with or without the presence of an instructor (Moore & Kearsley, 1996) Learner-instructor interaction is two-way communication between the instructor of the course and learners (Moore &Kearsley, 1996). This can take the form of the instructor delivering information, encouraging the learner, or providing feedback. Furthermore, Learner-instructor interaction can include the learner interacting with the instructor by asking questions or communicating with the instructor (Sher, 2009). Learner-content interaction is a process of individual learners elaborating and reflecting on the subject matter or the course content. When comparing with learner-instructor and learner-learner interaction, the learner, is directly involved in learner-content interaction (Moore & Kearsley, 1996). It is the method by which students obtain information from the course materials. The content can either be in the form of text, audio or videotape, Compact Disk, computer program, or online communication (Sher, 2009).

Many studies suggest that the various forms of interaction are important factors in promoting student satisfaction in the distance learning environments (Bray et al., 2008; Burnett, 2001; Moore & Kearsley, 1996; Northrup, et al., 2002; Thurmond & Wambach, 2004). When reviewing the literature, it can be noted that learner-learner interaction and learner-instructor interaction are generally considered important for student satisfaction in distance learning environments (Kuo, 2010). Some studies suggest that that learner-instructor interaction is only required in online learning and the best predictor for course satisfaction (Battalio, 2007; Bolliger & Martindale, 2004; Thurmond, 2003). However, some studies shows that the interaction among learners is interrelated and predict learner satisfaction than the learner-instructor interaction (Jung et al., 2002; Robles, 2006). Conversely, according to Chejlyk (2006) and Keeler (2006), Learner-content interaction is considered a good predictor, sometimes as the best predictor, of student satisfaction.

It appears that there is no conclusive result as to which type of the three interactions best predicts student satisfaction. Therefore, it is difficult to conclude whether learner-instructor interaction, learner-learner interaction or learner-content interaction is the primary factor of student satisfaction in online learning. However, it can be concluded that all three interactions

together predict student satisfaction. Self-efficacy is another predictor of student satisfaction in the distance learning environments (Lee & Witta, 2001; Lim, 2001; Robles, 2006; Puzziferro, 2006). According to the definition given by Bandura (1977), Self-efficacy refers to one's belief in his or her capability to organize and implement actions necessary to attain designated performance for specific tasks.

The literature related to Self-efficacy in the domain of online learning generally refers to three types of self-efficacy such as self-efficacy for online learning, computer self-efficacy, and Internet self-efficacy. Self-efficacy for online learning involves how confident online learners are in performing assigned learning tasks in technology-mediated environments (Kuo, 2010). The concept of computer self-efficacy helps to better understand computer user behavior and system use (Kuo, 2010). Accordingly, Internet self-efficacy can be defined as the belief in one's capability to organize and execute Internet actions required to produce given attainments (Eastin & LaRose, 2000).

Due to the transformation of the face-to-face classroom into online classrooms, possessing enough Internet-related ability or skills becomes essential, especially for online learners. When technical problems regarding the internet and other relevant technologies occur while engaging in online education, students get frustrated and this leads to dissatisfaction of the students (Choy, et al., 2002). The studies examining the relationship between Internet self-efficacy and satisfaction are very limited (Kuo, 2010). Chu & Chu, (2010) found that Internet self-efficacy is positively correlated with the students' satisfaction. Another study conducted by Hamdan, et al., (2021) further confirms that Internet self-efficacy is a significant predictor of student satisfaction related to online learning.

Self-regulated learning is another prominent factor, which leads to the successful implementation of online-based learning (Rakes & Dunn, 2010; Sun, et al., 2008; You & Kang, 2014). Self-regulated learning refers to the extent to which students metacognitively, motivationally, and behaviorally participate in their own learning process (Zimmerman, 1989). Metacognition involves strategies that lead to the continuous cycle of self-instruction and self-evaluation (Zimmerman & Martinez-Pons, 1988). Motivation, which is intrinsically driven, enhances the perceptions of self-efficacy to accomplish learning tasks and activities, and behavior leads to the social interactions that take place within the learning environment.

Studies related to self-regulation and student satisfaction showed a positive correlation between each of the constructs (Puzziferro, 2006; Wang, et al., 2013). Both studies examined the relationship between the two constructs in online learning environments. Similar results are also reported of the studies conducted by Inan et al., (2017) and Nicol, (2009) that self-regulation positively correlated with student satisfaction. A study carried out by Dissanayake, et al., (2021) with the participation of 209 tourism and hospitality management undergraduates in Sri Lanka state universities revealed that the existing level of both internet self-efficacy and self-regulated learning is at an above-average level. However, its relationship and influence on defining student satisfaction are yet to be discovered and this study is also to shed light on the influence of internet self-efficacy and self-regulatory learning on students' satisfaction.

Based on the literature review, this study suggests that interaction, internet self-efficacy, and self-regulated learning influence tourism and hospitality students' satisfaction towards online teaching and learning during the COVID -19 outbreak. Consequently, it can be hypothesized that;

H1: Interaction significantly influences student satisfaction about online learning.

H2: Internet self-efficacy significantly influences student satisfaction about online learning.

H3: Self-regulated learning significantly influences student satisfaction about online learning.

Research Methodology

To achieve the objectives of the study, quantitative research approach has been employed to this study. The population of this study is all the tourism and hospitality undergraduates in Sri Lanka. The sample for the study was selected from three state universities: the Rajarata University of Sri Lanka, Uwa Wellassa University of Sri Lanka, and the Sabaragamuwa University of Sri Lanka which offer Tourism and Hospitality Management Bachelor's Degrees. All the participants in this study are engaging in online education offered by their universities during the COVID -19 outbreak. The quantitative method was adopted by the researchers in analyzing and ascertaining the solution to the research problem. Interaction, Internet self-efficacy, and self-regulated learning are the concerned variables to measure the students' satisfaction in online learning. Figure 1 depicts the conceptual framework of the study.

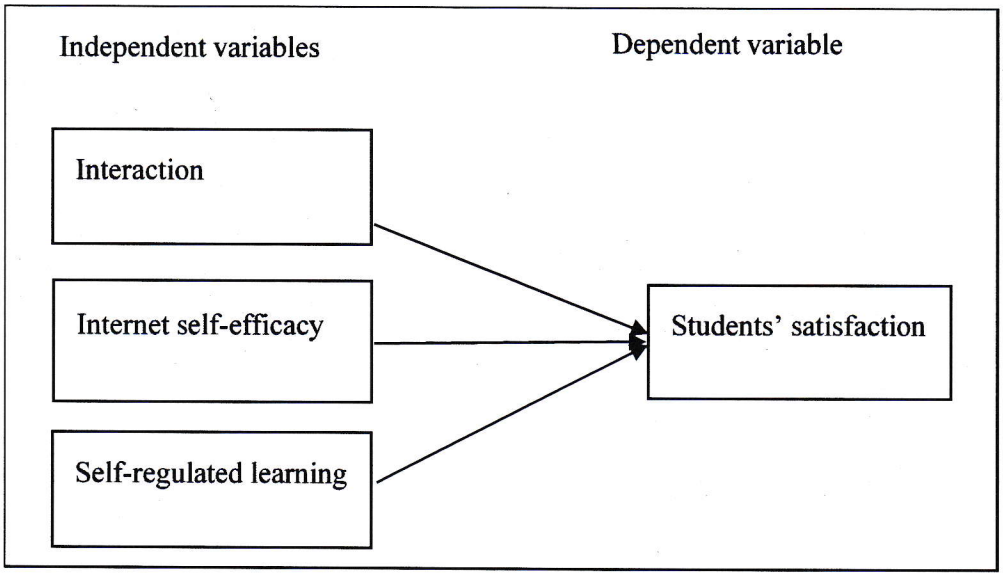

Figure 1: Conceptual Framework

The primary data for the study were collected using a structured questionnaire and it was distributed through online channels. 209 responses were received for the final analysis. The first part of the questionnaire included questions on demographics information of students and the information related to the online learning experience. The second part of the questionnaire consists of the instruments created for interaction, internet self-efficacy, and self-regulated learning. The third part of the questionnaire consists of the instruments to measure the students' satisfaction regarding online education. A five-point Likert scale ranging from 1 as strongly disagree to 5 as strongly agree, is used for the measurement. Descriptive and inferential tools were used for analyzing the primary data. Accordingly, regression analysis was employed to explore the influence of interaction, internet self-efficacy, and self-regulated learning on students' satisfaction in online learning.

Table 1: Measures of Interaction

Variable	Measures
Interaction	I communicate with my classmates about the course content through different electronic means, such as email, discussion boards, instant messaging tools (Viber, WhatsApp), chat rooms, LMS, etc.
	I answer questions of my classmates through different electronic means, such as email, discussion boards, instant messaging tools (Viber, WhatsApp), chat rooms, LMS, etc.
	Class projects led to online interactions with my classmates.
	I ask the lecturer my questions through different electronic means, such as email, discussion boards, instant messaging tools (Viber, WhatsApp), chat rooms, LMS, etc.
	The lecturer regularly posts some questions online for students to discuss on the discussion board, LMS, etc.
	I receive enough feedback from my lecturer when I need it.
	Online course materials such as handouts LMS, e-books, weblinks, etc. help me to understand better the class content.
	Online course materials stimulated my interest in the subjects.
	I spent lots of time going over the course materials.

Table 2: Measures of Internet Self Efficacy

Variable	Measures
Internet-Self Efficacy	I can easily understand the terms/words relating to Internet hardware.
	I can easily understand the terms/words relating to Internet software.
	I can easily describe the functions of Internet hardware
	I have confidence in troubleshooting Internet hardware.
	I can easily understand why a task will not run on the Internet.
	I have confidence in using the Internet to gather data and information.
	I have confidence in learning advanced skills within a specific Internet program.
	I have confidence in turning to an online discussion group when help is needed

Table 3: Measures of Internet Self-regulated learning

Variable	Measures
Self - Regulated Learning	During online classes, I make up questions to help focus my learning.
	When I become confused about something I'm learning trough online, I go back and try to figure it out.
	If course materials are difficult to understand, I change the way I read the material.

	Before I study new course material thoroughly, I often skim it to see how it is Organized.
	I ask myself questions to make sure I understand the material I have been studying in the online class.
	I try to change the way I study in order to fit the course requirements and Lecturer's teaching style.
	I often find that I have been learning in the class but don't know what it was all about.
	I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying.
	When studying online, I try to determine which concepts I don't understand well.
	If I get confused taking notes in the online class, I make sure I sort it out afterward.

Table 4: Measures of Student Satisfaction

Variable	Measures
Student Satisfaction	I am satisfied with the online teaching program initiated by my university.
	Online education is worth my time.
	I enjoy studying online.
	Online education is stimulating.
	Online education is exciting.
	I am satisfied with the level of interaction that happened in online education
	I look forward to learning online in the future too.
	I prefer online education.

Findings of the Study

Demographic Analysis

This section provides the demographic profile of the respondents. The demographic profile of the respondents depicted in table 5.

Table 5: Respondent's profile and online learning experience

Demographic		(N=209)	Percent
Gender	Female	136	65.1
	Male	73	34.9
University	Rajarata University of Sri Lanka	97	46.4
	Sabaragamuwa University of Sri Lanka	61	29.2
	Uwa Wellassa University of Sri Lanka	51	24.4
	First Year	77	36.8

Academic Year	Second Year	44	21.1
	Third Year	40	19.1
	Fourth Year	48	23.0
Residential Province	Central	43	20.6
	Eastern	11	5.3
	North Central	14	6.7
	North Western	27	12.9
	Northern	11	5.3
	Sabaragamuwa	19	9.1
	Southern	25	12.0
	Uwa	17	8.1
	Western	42	20.1
The device use to participate online lectures	Desktop Computer	3	1.4
	Laptop Computer	58	27.8
	Smart Phone	147	70.3
	Tablet	1	0.5
ISP	Airtel	05	2.4
	Dialog	88	42.1
	Hutch	04	1.9
	Mobitel	84	40.2
	SLT	28	13.4
Network coverage	Strongly satisfactory level	13	6.2
	Satisfactory level	68	32.5
	Moderate level	89	42.6
	Unsatisfactory level	33	15.8
	Strongly Unsatisfactory level	06	2.9
Average monthly internet charges	Less than 100 rupees	15	7.2
	101 – 500 rupees	72	34.4
	501 – 1000 rupees	60	28.7
	1001 – 1500 rupees	35	16.7
	More than 1500 rupees	27	12.9

The respondents of this study consist of 65.1% female students and 34.9% male students (34.9%). The majority of the respondents (46%) are from Rajarata University of Sri Lanka, while 29% of the respondents from the Sabaragamuwa University of Sri Lanka, and 24% of the respondents are from Uwa Wellassa University. Further, the students' cohort comprises approximately 36% of the first year, 21% of the second year, 19% of the third year, and 23% of fourth-year students indicating that respondents are reasonably distributed among all the academic years. The data also indicates that a similar number of respondents represents the Central Province and Western Province of the country (20% from each). North Western

Province and Southern Province represent approximately 12% of respondents from each province while other provinces represent less than 10%, but more than 5% respondents from each.

According to the results, the majority of the students (70.3%) use their smartphones to participate in online lectures, and approximately 28% of students use laptop computers to engage in online education. Only three students out of 209 students use desktop computers while only one student uses tablets to participate in online lectures.

The majority of the students use the Dialog (42%) and Mobitel (40%) internet service providers to engage in online education. 13% of respondents claim that they use Sri Lanka Telecom as their Internet Service provider in the online learning process while only 2% of students use Airtel or Hutch for their online education. Moreover, 34% of respondents spend an average of 101 to 500 rupees on the internet and data charges monthly. About 28% of respondents spend 501 to 1000 rupees, 16% of respondents spend 1001 to 1500 rupees, and 13% spend more than 1500 rupees for internet and data charges monthly. Only 7% of respondents spend less than 100 rupees monthly for internet and data charges.

The majority of the students (42.6%) claim that the network coverage is at a moderate level while 32.5% of students claim that they have satisfactory level network coverage and 6.2% of students have network coverage at a strongly satisfactory level. It appears that most of the respondents have sufficient network coverage to engage in their online education effectively. However, network coverage of the rest of the respondents is at either unsatisfactory level or strongly unsatisfactory levels (15.8%, 2.9% respectively).

Additionally, student engage surface during the online learning process has been analyzed. The zoom technology is widely used for online teaching in the mentioned universities. The Zoom technology allows effective interaction among the teachers and students through various features such as video conferencing, reactions, chatting, breakout rooms etc. The respondents claim that they prefer their teachers to keep video on and share the screen when conducting classes. On the other hand, the students often get the distracted by background noises of peer students, who keep their microphones on during the lesson. Hence, the teachers should allow the students to turn on the microphone only when it is necessary to ensure an effective learning environment free from interruptions.

Analysis of the Study

The research used Cronbach's alpha value to assess the internal consistency of the items within a scale. Alpha values were calculated for each multi-item scale. All the calculated alpha values are found to be above 0.85 indicating the fact that all scales are reliable.

The relationship between the interaction, internet self-efficacy self-regulated learning, and student satisfaction has been examined using the Pearson correlation analysis. The results are depicted in Table 6.

Table 6: Correlation analysis

		Interaction	Internet Self Efficacy	Self - Regulated Learning	Student Satisfaction
Student Satisfaction	Pearson Correlation	.617**	.633**	.477**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	209	209	209	209

According to the correlation analysis, all the P- values are 0.000. These values are less than 0.01, therefore the result is highly significant. All the coefficients of correlations are positive. This indicates that interaction, internet self-efficacy self-regulated learning have a positive significant relationship with student satisfaction. Internet Self-efficacy has the strongest relationship with student satisfaction while self-regulatory has the weakest relationship.

Hypothesis Testing

Regression analysis was performed to predict the influence of interaction, internet self-efficacy self-regulated learning on student satisfaction. Table 7 shows the summary of the regression model.

Table 7: Summary of the Regression Model

Model	R	R Square	Adjusted R Square	Std. error of the Estimate	Durbin-Watson
1	.701[a]	.491	.484	.55536	1.886

According to table 5, multiple correlations "R" is 0.701, which indicates that there is a strong joint association between the interaction and student satisfaction. R-square is 0.491. This indicates that 49% of student satisfaction has been covered by the model. Adjusted R-square is also representing that 48.4 % of the dependent variable has been covered by the model. Durbin-Watson test statistic is 1.886, which is very close to 2 and between 1.5 and 2.5. Therefore, residuals are independent and the model is valid. Regression ANOVA is given in table 8.

Table 8: Regression ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	61.079	3	20.360	66.013	.000[b]
Residual	63.226	205	.308		
Total	124.305	208			

The probability of F test statistics of the regression ANOVA is highly significant as the P-value is 0.000. This indicates that the model is jointly significant and independent factors jointly influence students' satisfaction. The individual effect has been analyzed in table 09.

Table 09: Individual effect

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.153	.269		.569	.57		
Interaction	.348	.080	.304	4.337	.000	.505	1.982
Internet Self Efficacy	.427	.072	.385	5.969	.000	.596	1.678
Self - Regulated Learning	.187	.091	.126	2.048	.042	.654	1.528

The probability of Interaction is highly significant with positive beta values. The probability of Interaction is less than 0.01 indicating that Interaction significantly influences positively on students' satisfaction about online learning. The probability of Internet Self Efficacy is less than 0.01 with positive beta values, which indicate that Internet Self Efficacy significantly influences positively on students' satisfaction regard to online learning. Self -Regulated Learning significantly influence positively on students' satisfaction regard to online learning, since the probability of the variable is less than 0.05 with positive beta values. Based on these findings, H1 and H2, and H3 have supported that interaction, internet self-efficacy self-regulated learning influence student satisfaction related to online learning.

As the diagnostic tests for regression results, the researcher tested several assumptions. In the model summary, the Durbin- Watson test is at the accepted level and residuals are independent. All the Variance Inflation Factors (VIF) are less than 10 and Tolerance value >0.1, which indicates that independent factors are not highly or perfectly correlated. Therefore, no multicollinearity problem was found in the regression model. Accordingly, the regression model is highly valid.

Discussion

The findings of the study revealed that interaction, internet self-efficacy, and self-regulatory learning influence the students' satisfaction in the online teaching and learning process. The sudden and unanticipated move to online education by the state universities of Sri Lanka made their students learning experience entirely different. Students should have a high level of internet self-efficacy to complete required tasks through the internet (Ranasinghe, 2021). Higher internet self-efficacy of the students, higher the information searching skill and better learning experience which leads to the satisfaction of students (Tsai & Tsai, 2003). Accordingly, in aligning with the findings of the previous studies (Joo, et al.; Chu & Chu, 2010; Hamdan et al., 2021), this study indicates that internet self-efficacy is the strongest predictor in determining student satisfaction, and it is strongly and positively correlated with student satisfaction.

In a computer mediate technological environment where all forms of interactions are influenced to a certain degree, teacher-student interaction, student-student interaction, and

student-content interaction also play a vital role in student satisfaction towards online learning. Accordingly, the study reveals that interaction is also a highly influential predictor in determining the students' satisfaction which aligns with the previous studies (Bray et al., 2008; Burnett, 2001; Moore & Kearsley, 1996; Northrup et al., , 2002; Thurmond & Wambach, 2004). Therefore improving the interaction among the students, between the teacher and student, and also ensuring that the content is easy to access and engaging for students play a vital role in student satisfaction in the online learning environment.

Though it has a comparatively low predicting power than the other two variables, self-regulatory learning also has a significant influence on students' satisfaction since the students are highly self-centred and self-directed in an online education environment (Artino, 2007). Numerous studies conducted by Puzziferro (2006); Wang et al. (2013); Inan et al. (2017); and Nicol (2009) revealed that self-regulated learning is a predictor of student satisfaction.

Since many courses of the tourism and hospitality education are practical oriented, moving completely from face-to-face learning to online mode may not be successful and therefore designing hybrid teaching mode is vital. Insight and findings of this study can be utilized in designing effective curriculum for the new normal.

Conclusions and Policy Recommendations

Online education is developing a new paradigm of modern education in both global and local contexts particularly due to this global pandemic of Covid 19. This study was carried out to examine the influence of interaction, internet self-efficacy, and self-regulatory learning on students' satisfaction about online learning during the Covid 19 crisis. The results suggest that the internet self-efficacy of the students has the highest predicting power in determining their satisfaction. Therefore, it is vital to ensure that these students are competent and confident in using the internet for their academic activities. The knowledge and skills of computer Software, hardware, troubleshooting should be further improved to ensure the satisfaction of the students in this new learning setting.

The study further reveals that digital interaction is of paramount importance due to the physical separation of the students from the teachers and other students. Therefore, the authors suggest incorporating suitable strategies to increase the interaction in the online teaching-learning process in ways that both students and teachers are actively and lively involving. The need for interaction may differ depending on the courses in terms of types of learners, the personality and philosophy of the teacher, and the course design. Therefore, it is essential to aware the teachers of the importance of interactions occurring in their courses.

Teachers should continue to discover innovative ways to deal with the difficulty of communication in the online environment, prepare the content easy to access and engaging for students, and explore new ways for students to engage with one another.

Additionally, both institutes and teachers should create an online learning environment that encourages shared and reflective online learning experience. Learning support Learning tasks, and learning resources ensure the optimal learning environment for accelerating higher level of reflection (Strampel & Oliver, 2007) Consequently, encouraging discussions using breakout rooms, group assignments, role plays, writing tasks, and providing learning resources such as books, papers, articles, web links, case studies, lectures, tutorials, and providing timely feedback and guidance can be recommended in order to promote the reflective learning in tech based environment

Finally, since the technology greatly assists and enhances this process, it is highly recommended that the technological infrastructure facilities of the country should be developed further. The studies carried out by Hayashi, et al., (2020) and Muthuprasad, et al., (2021) also emphasized that the success of the online education critically depend on the availability and accessibility of technological infrastructure facilities.

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