

Chapter Three

Impact of learning management systems in tourism and hospitality education in Bangladesh

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Abstract

The software program that is aimed at management, reporting, recording, tracking and automation followed by the delivery of educational courses and other learning, training and development programmes is called Learning Management System (LMS). In concept, LMS emerged from eLearning directly. The application of this system is rather new in a developing country like Bangladesh. But the interest in it and the facilities for offering the system are gradually increasing. There is evidence that several universities and research centres are well equipped to deliver its flagship courses in Bangladesh with LMS. The country's tourism and hospitality industry has been considerably expanding at least for the last few decades. This expansion resulted in the inclusion of tourism and hospitality education in major educational institutions in the country. Considering the better management of these educational courses, LMS can possibly be emphasised. This research outlines factors to apply LMS in tourism and hospitality education management in Bangladesh.

Keywords: Tourism, Hospitality, Education, Learning Management System, Bangladesh

Introduction

Online education is progressively becoming popular in higher education and is emerging as an opportunity for delivering education online. A vast area is occupied by Learning Management System (LMS) hereof as public and private universities in Bangladesh are increasingly adopting this method. This has been influenced by the recent pandemic of the corona virus whilst, in the midst of this global stagnation, having no other options left, online teaching and learning has become the most important and effective tool in the field of education in Bangladesh, like other countries in the world (Alam, 2020).

Bangladesh is trying its best to develop its entire system so that Information and Communication Technology (ICT) can be facilitated in all corners of the society, including

higher education (Karim, 2014). To meet the challenges of the future, LMS should be initiated in tourism and hospitality higher education too. Tourism is one of the most challenging sectors in the current business world. World Travel & Tourism Council (*WTTC*) (2019) testimonies that, one job was created against four new jobs by the hospitality sector in Bangladesh in the last five years, accounting for 1858900 jobs and it gave employment to 330 million jobs across the world in the tourism sector. The most special thing about LMS is it overcomes the time, distance and cost barriers to higher education as it gives access to all kinds of education and learning resources to students and learners from any geographical location. But this is coupled with multifaceted obstacles and glitches too, for the application of LMS in supplementing teaching and learning in a country like Bangladesh, which lacks in technology friendly infrastructure. In this circumstance, this research put light on the extent of application of the Learning Management System in higher education in Bangladesh, especially in Tourism and Hospitality Education in Bangladesh. It also tries to specify the factors and challenges in implementing LMS in the country. Some holistic measures are also suggested for ensuring sustainable implementation of LMS in Tourism and Hospitality Education in Bangladesh.

Literature review

LMS is used in universities throughout the world for connecting students and teachers overcoming the limitation of interacting in physical classrooms. This is facilitated by a setup, backed by a software program, where students receive learning materials and resources as and when needed (Adzharuddin et al., 2013). Asisri (2012) identifies the internal and external variables those are important for determining acceptance of LMS to the faculties of Saudi Arabia, where challenges faced by them and other demographic factors are classified as internal aspects and faculty members' perception of e-learning, competence level and attitude were categorized as external variables. Alias and Zainuddin (2005) identify the concerns of lecturers regarding the use of the learning management system in Malaysia, in which it was found that respondents even belonging to the traditional teaching system demonstrated affirmative and open-minded attitude towards the assumed change. In the context of Bangladesh, Alam (2020) argues that, though the key stakeholders of online education- the teachers and learners face various barriers; eradication of those issues can create a congenial environment for this alternative education system that will further bring better outcomes in all magnitudes. On the other hand, Mahmuda (2016) discussed about the multi-dimensional tools like software, social media network and gadgets etc. used in online teaching in Bangladesh and the changes this has brought in the in the big picture that has made it more accessible to the faculties, learners and other beneficiaries of the country.

According to icddr,b (2020a; 2020b), icddr,b, which was known as the International Centre for Diarrhoeal Disease Research has experience of research for more than 50 years in the field of providing information about epidemics in developing countries. More than 65000 physicians, laboratory personnel, managers, trainers, faculties and students from 87 countries attended icddr, b's training/education programs, most of which are provided through their state of the art online Learning Management System (LMS). They also provide training on LMS that focus on utilizing the updated features and capabilities of technology and gadgets those are used for

LMS, in this case Moodle; the incumbent of which is Moodle course users like faculties, trainers, students and learning and development professionals. (icddr, b, 2020). Bangladesh University of Professionals has introduced such Comprehensive Learning Management System (LMS) that the software makes it easier to conduct online classes and examinations, communication between pupils and faculties, results publication on academic performance, management of participants' profiles, upload audio-visuals, submission and checking of internship report, thesis and assignments etc. as well as conducting plagiarism checking through customized app- enabling the university's online learning more updated and responsive to global crises like corona pandemic (Bangladesh Post, 2020). North South University is striving to acquire a topnotch LMS within a very short time with the objectives of achieving better administration and supervision of classes and more fair examination settings for the students (The Daily Star, 2020).

Daffodil International University (DIU) started their Learning Management System called Blended Learning Centre (BLC) in 2013, through which the classes can be easily made visually appealing, with videos from multiple sources like YouTube, Google, Drive, Edpuzzle, H5P interactive content. To create courses for students, teachers can upload a variety of multimedia files, images, PDFs, docs, excel sheets and so on. (The Daily Star, 2020). They have also launched a mobile app available in Google Play Store name DIU Blended Learning Center, which includes different projects like partnership with other institutions of the world to conduct online courses and curriculums, recruitment and training of teachers, dissemination of class modules, quality control of course contents, perform research on teaching-learning advancements and technology based education, publishing research based blogs and monthly magazines (DIU Blended Learning Center, 2020). Biswas, Roy and Roy (2020) measured the opinion of university students regarding use of cell phones for education amid Corona Pandemic in Bangladesh where the findings illustrate pupils' positive opinion towards m-learning and social media in claiming it to aid in recovering the learning gap during the pandemic.

Methodology

For data and information generation, the chapter used primary sources like in-depth interviews with relevant stakeholders like faculty members and students of Daffodil International University and North South University of Bangladesh. Apart from these, secondary sources like published articles, reviews and online resources were applied.

Findings

Learning management system

The revolution of ICT and its widespread practice in teaching- learning has changed the contribution of teachers and trainers in education as well as has resulted into creation of new terminologies in the educational arena, like- web-based learning, e-learning, m-learning, online/virtual class, digital contents, learning management etc. that (Asiri, 2012). A software program or internet-based technology that helps to design, perform and evaluate different teaching-learning processes coupled with providing a teacher/trainer tools to develop and

deliver learning materials, observe learners’ engagement and evaluate their improvement online can be called a learning management system (LMS) (Alias et al., 2005). Regardless of its types like Moodle, OLAT or SAKAI, an LMS’s characteristics can be two-fold, one- in managing courses it helps administration and dissemination of education and two- in managing learners, it enables their enrollment, documentation, payments and many more (Clarke-Okah, 2009).

Learning management system in Bangladesh

The exponential growth of computer literacy recently has resulted into the emergence and advancement of different kinds of IT based software and devices beneficial to the teaching initiatives and for the improvement of e-learning and learning management systems, which have become increasingly acquainted with faculties, learners, trainers and educational and training institutions. According to Karim (2014), Bangladesh, being a developing nation, has been ambitiously trying to accelerate its socio-economic development through vigorous investment in establishment of Information and Communication Technology in every sphere, especially in education and training both in public and private sector. Bangladesh Open University (BOU) has commenced ICT supported Open and Distance Learning (ODL) from previous television and radio based distance learning through widespread use of LMS, web2 technology, webTV, webRadio, eBooks and mobile app; which has facilitated equal access to education to mass people and has taken the country one step ahead towards attaining the Digital Bangladesh agenda of government and achieving Sustainable Development Goals (SDGs) (Mannan, 2016). As discussed by Islam (2017), there are different types of LMS available currently. Among them, there are: open source LMS (Moodle, canvas, authors and others), Cloud LMS (DoceboLMS), Proprietary LMS (Blackboard, eCollege, edmodo etc., Historical LMS (click2learn, Learn.com, Geolearning and others).

Some public and private universities in Bangladesh are also adopting different types of Learning Management Systems for deploying education. But this is happening to different extent, especially in the recent Covid-19 pandemic situation. Among them, the following ones are found (as displayed in their websites) to be disseminating learning through different e-learning and LMS tools to different extent. Extent as in some of them are in trial stage, some are in early development stage and some are in fully functional stage in their operation.

Table 1: Name of the universities providing education through LMS (based on information available in the universities’ websites)

Name of the University	Name of LMS / e-learning Platform
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1	American International University-Bangladesh (AIUB) Dhaka	LMS
2	Asian University for Women	Moodle
3	Bangladesh Open University	LMS
4	Bangladesh University of Professionals	LMS
5	BRAC University	LMS
6	Daffodil International University	BLC
7	International University of Business and Agriculture and Technology	Moodle
8	Islamic University of Technology	LMS
9	Jashore University of Science and Technology (JUST)	LMS
10	North South University	RDS
11	Northern University Bangladesh	LMS
12	Primeasia University	Orbit OCP
13	United International University	LMS
14	University of Liberal Arts Bangladesh	Moodle

During COVID-19 Pandemic, the drastic change in the situation of academic activities, many universities could not arrange well designed LMS for continuing classes. Most of these institutions successfully fight one of the greatest crises occurring to global education by utilizing Facebook Group as an LMS (Munni & Hasan, 2020). Research done by Chaka and Govender (2020) with the objective to ascertain the utilization of social networking media Facebook’s role as a platform for teaching and learning showed that, mobile learning remarkably bring improvement to the condition of learning environment and academic performance of students in institutions as it addresses the lack of physical facilities and improves reading practices in learners. It was found that Facebook in this case acted as a learning management system in different ways by incorporating tools and features like - Facebook live, Facebook group, Facebook watch, Facebook messenger room, social learning, education center, Facebook Mentorship Program and others (EDUCAUSE review, 2020; TECH & LEARNING, 2020). One of the largest eLearning platforms called 10 Minute School using Facebook as a learning platform (10 Minutes School Live, 2020).

Learning management system in tourism and hospitality education in Bangladesh

In Bangladesh graduates are increasingly joining the labor market, but are left empty handed without jobs for a long time. On the other side of the coin, the tourism and hospitality industry of this country suffers the need of tourism professionals and entrepreneurs. This gap can only be reduced by converting these high potential human resources into human capital by instilling up to date employability skills in them through practical and dynamic mode of education like online learning and LMS (Islam and Akthar, 2020). This can be achieved by equal participation of public and private universities who are offering courses in this area.15 Out of 107 private universities and 2 out of 46 public universities (University Grants Commission of Bangladesh, 2020) provide Tourism and Hospitality Management education. Following are the universities that do so:

Table 2: Name of the universities providing tourism education in Bangladesh

	Name of the Institution	Type of the Institution (Public/Private)
1	American International University- Bangladesh	Private
2	Bangabandhu Sheikh Mujibur Rahman Maritime University, Bangladesh	Private
3	Cox’s Bazaar International University	Private
4	Daffodil International University	Private
5	European University of Bangladesh	Private
6	Fareast International University	Private
7	IBAIS University	Private
8	International University of Business and Agriculture and Technology	Private
9	Primeasia University	Private
10	Rajshahi University	Public
11	Royal University of Dhaka	Private
12	Southern University Bangladesh	Private
13	The People’s University of Bangladesh	Private
14	University of Dhaka	Public
15	Victoria University of Bangladesh	Private
16	Victoria University of Dhaka	Private
17	World University of Bangladesh	Private

Source: Developed by the authors (2020)

Technology in Higher education helps us to bring the world to our fingerprints and this is of much necessity in the field of tourism education, as application of LMS has the potential to give access to international resources and diversified learners from different corners of the country and the world. In this context, only 4 universities were found have their own LMS out of 14 universities for deploying tourism and hospitality education and they are:

Table 3: Name of the universities providing tourism education through LMS

	Name of the Institution	Availability of LMS/ online teaching-learning
1	American International University- Bangladesh	Available
2	Daffodil International University	Available
3	Primeasia University	Available
4	International University of Business and Agriculture and Technology	Available

Source: Developed by the authors (2020)

Upon discussion with some students and faculty members, it was found that among all these, 4 universities are using a full-fledged LMS in deploying education and as a matter of fact, for Tourism and Hospitality education too. BLC is the digital teaching and learning hub of DIU to connect teachers and students effectively allowing to track progress of individual students and better facilitate their learning. According to Daffodil Family (2020) and Daffodil International University (2020), DIU specialises in process automation and digital teaching and learning management. Almost all the processes and activities of the university are run by a digital infrastructure, web applications and software. To mitigate poor internet connection for the students located in remote locations DIU has worked on collaborating with Grameenphone and Robi to provide low price data packages for its students. BLC has a well-structured and robust e-Learning Management System and is a one stop solution to create, organise,

communicate and manage courses. It is very simple to use and manage for teachers and students with incredibly powerful plugins and integrations that comes with a drag and drop Course Builder that helps teachers to publish courses with ease. It is convenient to add or create (link or embed) course materials, new lessons' videos, audios, PowerPoint slides, drive resources, any files from the desktop, and even interactive content. The platform contains over 25 inbuilt features along with hundreds of plugins and integrations that extend the possibilities for teachers to engage their students in multiple and flexible ways. 100% academic activities of the university are going on in full swing smoothly using the BLC platform which DIU started in 2013, during the frequent interruptions caused by strikes, hartals and blockade programs, which equipped the faculty members with necessary skills (The Daily Star, 2020). BLC is the purchased and updated version of Moodle for DIU. Very few universities have their own LMS in Bangladesh, due to high maintenance, costing and efforts. But DIU has been having it for five years. The students and teachers are greatly engaged in BLC currently, which provides all types of facilities including classes, lectures, exams, interactive contents, grading etc. (The Asian Age, 2020).

It was found that, LMS has enabled their students and teachers to:

- Receive every administrative services and activities online, which are otherwise provided physically in the institutions.
- Submit term papers, coursework and answer copies virtually as well as get examination results and tabulation sheets.
- Engage in student-to-student discussions and increase interaction among student and faculties.
- Improved academic proctoring of the teaching-learning procedure by subject instructors
- Course advising and enrolment.
- Improved learner performance through access from home.
- Improved engagement level of students in pedagogical activities resulting in higher satisfaction level.
- Frequently get admittance to academic resources like teachers and course materials backed by a service oriented learning community.
- Attend webinars, workshops, “Learning Summit”, “Job Fest” etc. development initiatives virtually.

Factors of digitalisation of tourism and hospitality education in Bangladesh

The factors that might make digitalisation of higher education a success can be derived from the conceptual framework of Harasim (2000) that can help to guide, design and implement online courses. In this framework, Harasim (2000) presented five beneficial factors and in this research, the identified potential success factors are: many-to-many group communication, time independence, place independence, text-based/media-enriched messaging, computer facilitated environments. These findings can be articulated into a summary incorporating tourism higher education students of Bangladesh.

Table 4: Success factors of digitalisation in Tourism and Hospitality higher education in Bangladesh

Factors	Impact on students
Many-To-Many Group Communication	Social inspiration resulting from communicating with friends; dynamic and smooth information exchange surroundings; emergence of fresh perceptions, diversity; opportunity of comparing, sharing and modification of ideas. Chance of interaction in social networking media.
Time Independence	24/7 access; ability of immediate response by users or as per their convenient time; constant development of knowledge; learners’ participation depending on their readiness to learn.
Place Independence	Access to the local as well as international resources from diversified academic and geographical area; resulting in shared interests, shared knowledge, virtual travelling.
Text-Based/Media-Enriched Messaging	Verbalization and expression of concepts; decreased demographic discrimination by concentrating on message rather than on the messenger; clear communication of ideas; diverse collection of ideas.
Computer Facilitated Environments	Facilitate searchable, transferable and adjustable documentation, manifold permissions through discussion; developing tools to interchange and organise concepts, maintenance of collaborative education; designing templates, frameworks and academic materials.

Source: Modified by the authors from Harasim (2000)

Apart from the aforementioned factors, online education software, virtual class platforms, internet availability, adequate bandwidth and online connectivity are the prime factors for students to get access to LMS provided by their universities. With the patronage of mobile and tele-communication infrastructure, these are more or less ensured in most of the urban areas in Bangladesh. However, the accessibility of telecommunication and data communication facilities is not reasonable on the other hand. Still students and teachers are found to get some Infrastructural support provided by the stakeholders (2020a; 2020b), on behalf of the Ministry of Education (MoE) implemented through joint financing of Bangladesh Government and World Bank.

A high performing data communications setup named Bangladesh Research and Education Network (BdREN) has been organized by the government and University Grants Commission (UGC) of Bangladesh with the objective to provide connectivity among public and private educational and research oriented organizations. It is funded by the Government and World Bank. (University Grants Commission (UGC) of Bangladesh, 2020a; 2020b). BdREN has multi-gigabit capacity and their objective is to create connection among universities, research institutions, medical colleges, libraries, laboratories, healthcare and agricultural institutions across the country as well as to assist geographically dispersed academics, medical professionals, scientists and researchers with reliable access to high-end computing, simulation tools and datasets. For successful execution of BdREN framework, UGC signed an IRU contract with Power Grid Company of Bangladesh (PGCB) Ltd. for using 2 (two) core from its country-wide distributed OPGW network. BdREN is also connected with other regional and trans-continental Research and Education Networks (RENs) (for example. TEIN, GEANT, Internet2 and others). It has connected the teachers and learners of Bangladesh to the

international academic communities and educational resources. It also supports intercultural collaborative research and catalyzes innovation in the country (BdREN, 2020).

Grameenphone, a telecommunication service provider of the country has created a common platform where people in less developed areas, especially the ones living in villages can get access to high quality ICT services like internet, voice calls, video conference and other online activities. This is called the Grameenphone Community Information Center (GP-CIC), which currently is operating in more than 400 unions out of 4553 through their 550 cubicle booths. Learners from nearby villages and unions come to these booths at their class time and are able to attend online class, submit their homework or attend examinations (Grameenphone, 2020). Again, according to Access to Information (a2i) (2020a; 2020b), a whole-of-government program of ICT Division, supported by Cabinet Division and UNDP has design an internet access platform in remote rural area through the “Union Parishod” Internet facility namely “Union Digital Center (UDC)”. Moreover, they are planning to develop an education network like this concept paper and very soon place that proposal to Bangladesh Parliament. In this process, Students device (mainly cell phones) could be registered with the UDC internet access router, so students are able to connect to the internet through the UDC Wi-Fi facility. Otherwise, the local UDC authorities have to facilitate computers with internet access to students. In that case, the UDC computer has to be equipped with a webcam and some software like Zoom, web browser (Firefox, Google).

Challenges in Implementing Learning Management System in Tourism and Hospitality Education in Bangladesh

Like other sectors in spite of having technical and infrastructural shortcomings in facilitating online education in tourism and hospitality, there is potential of successful implementation of it in Bangladesh, overcoming the barriers related to traditional classroom based teaching-learning environment; a glimpse of which has been observed in the recent COVID-19 situation. Farah and Ahmed (2014) stated that, though Bangladesh has initiated different project to get the support of ICT, some issues like poor ICT infrastructure, high primary cost for infrastructural development, less reliable technology, high cost of equipment, continuous up gradation of technology are reason of concern for the e-learning benefactors; moreover, technological and economic instability create challenges for LMS to be implemented in Bangladeshi education system also.

According to Islam (2016), lack of motivation in learners and teachers to adopt the newly emerging educational system, lack of user friendly policy to support the mobile learning, deficiency of cost effective and accessible ICT support system for the learners, poor quality maintenance in deploying educational resources, lower accessibility of learning equipment and cultural hardness acts as challenges to upgradation of e-learning in Bangladesh. The other barriers that are likely to be faced while implementing e-Learning in Bangladesh are- high price of computers and laptops, insufficient electricity supply, poor English proficiency, slow and inconsistent internet speed, costly internet access, insufficiency of technical support in remote villages, inadequate budget for computer network growth, social and cultural issues, low

internet and broadband performance, inequality in learners regarding involvement in learning, rapidly growing population, low per capita income, corruption, globalization, lack of political commitment etc. (Khalid, Jahan & Sobhan, 2009)

Every educational institution has its own operating procedures, types of courses, types of students, categories of programs, structure of course materials and different groups and forums to be included in the LMS framework. But, LMS, being a small part of education management and requiring optimum level of customization to adhere to exclusive needs of the organization and type of operation and content makes its scope limited to draw attention to be invested or funded by management (Clarke-Okah, 2009). The challenges in adopting technologies like online learning, mobile learning and LMS in the developing countries can be manifold. Lack of availability of consistent and reasonable power supply is a basic issue. Low internet bandwidth and connectivity makes it difficult to carry compressed documents so that people living in dispersed cities and villages are not able to get access to academic resources like images, videos and zipped files. Teachers with limited knowledge of technology and deficiency in hands-on experience face difficulties to use them to engage and support learning. Lack of motivation in putting extra effort into acquiring this new skill is also a barrier. If such kind of initiatives related to online and technology based education is not made sustainable in less developed countries, its initial appeal and paper-heavy solutions will go in vain, resulting in mass peoples' deprivation of quality education and development opportunity (Mahmuda, 2016).

Suggestions for application of learning management system in tourism and hospitality education in Bangladesh

The decision for implementation of LMS and application of a certain LMS depends on vigorous organizational and technological forecasting. This is considered a high risk decision as it involves the interest of a multi- multi-dimensional group of stakeholders and impacts interrelated factors like institutional policies, administrative activities, funding, future orientation and generalization potentiality of the organization-wide LMS (Coates et al., 2005). Some suggestions, based on the findings of this study, are proposed to facilitate the implementation of LMS in universities providing tourism and hospitality education in Bangladesh.

Infrastructural development of ICT sector

Reliable and affordable access to power needs to be ensured throughout the country to confirm participation of a wide variety of learners. Planned installation of marine telecommunication cables causing increased internet connectivity and accessibility should be taken by Government and private enterprise like mobile phone companies.

Partnership among Government bodies, universities and telecommunication service providers

Key organisations need to come in partnership to bring radical change in this new learning system. Education board, public and private university authorities, University Grant

Commission (UGC), ICT department, Academic faculties, Internet and Telecommunication authorities & service providers need to work hand in hand to execute LMS. Advisory board with representatives from these stakeholders can be formed to discuss policy issues and give directives to all of the above. Technology based education systems need to be supported, maintained and modified to make it effective and keep it functional. Proper execution plan needs to be formulated and implemented to ensure sustainability. The system being expensive for universities and students needs to be supported by government and corporate bodies involved in tourism business by providing sustainable infrastructural and intellectual backing.

Increasing e-preparedness of students and community

Successful application of LMS in education needs involvement and conviction of the government, universities, teachers, guardians, learners and the whole community. Holistic approaches should be taken to increase e-preparedness of students in every socio-economic level of the nation by development of local technology, software & learning apps as well as reduction in cost of devices and internet packages so that when they are incorporated into a LMS system in higher education, they do not lag behind because of lack in preparedness.

Training for faculty and administrative people

Faculties and administrative employees of the institutions should receive practical, well-designed and adequate learning and development opportunities that will enable them to perform professionally in their classrooms and online work framework. Motivational initiatives should be taken to instill genuine interest in teachers regarding learning about and imparting online education, try new methods and technologies as well as strive to improve themselves. To keep newly joined teachers and students up to date and make them capable of yielding the full merit of online learning, authorities should arrange training on a continuous basis.

Help and support mechanisms

Help and service mechanisms on learning management systems like customer care centers and web based tools like video tutorials and electronic performance support systems should be initiated for faculties and learners to decrease hindrance of service due to technological problems. Constant consultations for support and training can be deployed through helpdesks, call centers, mobile service teams and many more.

Conclusion

For sustainable development and consistent success of a promising industry like tourism and hospitality, an educated, open minded and groomed workforce is mandatory, who are capable of fighting the fierce competition that is already present in the international market. This research presents evidence that the tourism and hospitality education in Bangladesh lacks sufficient technology supported LMS as well as suffers from manpower shortage and slower workforce growth. These are due to the lack of technology backed advanced and quality higher education, which as per today's reality is only possible through proactive and dynamic application of LMS in all the universities providing tourism and hospitality education. Taking lead in implementing LMS by these institutions has several implications. LMS aids

organizations by creating a mode for dissemination of learning initiatives at a large-scale meeting the immense and growing demands for exposure to the opportunity of better education and higher degrees. It ensures effective and efficient distribution of learning in a context where teacher students ratio is very high. It expedites decentralized education through access to international educational resources like faculties, experts, academics, learning material and ensures enriched student learning. Tourism industry is international that considers incapacitated without the application of technology in every single step of its operation. The use of LMS in education ensures e-Preparedness and technology smartness of the students prior to entering the global tourism market that can be the agenda for future research.

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