

E-learning adoption in hospitality education: An analysis with special focus on Singapore

Revi Nair

Temasek Polytechnic, Singapore

Babu P. George

Fort Hays State University, USA

Abstract: *This paper explores issues and challenges in the adoption of e-learning in hospitality education, with special reference to Singapore. Hospitality being a 'high-touch' profession and many hospitality related skills being largely intangible, there has been significant industry resistance in technology adoption. There has been concerns from multiple stakeholder groups as to how effectively can technologies compensate for the loss of social context of traditional hands-on learning. However, in Singapore, some polytechnic based schools have practically demonstrated the ways by which technology could be meaningfully integrated into hospitality education.*

Keywords: E-learning, hospitality, education, active learning, polytechnics, Singapore.

JEL Classification: L83, M1, O1

Biographical note: Revi Nair is a senior lecturer at the School of Business, Temasek Polytechnic, Singapore. Babu P. George is associate professor of management, at the Robbins College of Business Entrepreneurship, Fort Hays State University, USA. Corresponding author: Babu P. George, e-mail: bpgeorge@fhsu.edu.

1 INTRODUCTION

The hospitality industry in Singapore has been facing challenges to combat the slower workforce growth. The potential manpower shortage is expected to intensify due to the fact that there will be an additional 14,000 hotel rooms by 2018 and limited local graduates joining the industry annually (Singapore Tourism Board, 2015). Diseases like the severe acute respiratory syndrome (SARS) and the middle-east respiratory syndrome (MERS) have caused educational institutions to close and not being able to finish curriculums. The inability to complete curricula on time has pushed the Singapore government to emphasize the importance of online classes.

Singapore's education ministry has been encouraging the use of information technology (ICT) to its institutions so that they are able to change learning and teaching methods in a way that students can understand (Ministry of Education, Singapore 2013). The hospitality industry is one that is manually intensive with a fair amount of interaction between service staff and customers. Bull (1995) stated that the hospitality industry adapted to technology late. This belatedness by the industry and academics may have had a

substantial impact on students' overall perception towards technology. The advent of technology in the industry does not often facilitate distance education and the required hands-on learning experience.

Lin (2002) hypothesized that industry professionals must be encouraged by hospitality educators to assist them in continuously updating curriculum in order for the institutions to meet the demands of the industry. Part of updating curriculum includes online learning. Information by these industry professionals is also useful for students currently pursuing hospitality diplomas. The collaboration between hospitality institutions and industry professionals will serve as a reference for students to understand competencies in the industry. According to Adler and Adler (2004), large numbers of workers leave the hospitality industry after five years. Hospitality institutions can then incorporate their current programs to suit the industry's needs and to perhaps entice hospitality workers to stay longer, it is expected.

In this context, this paper addresses the dissonance of whether online courses taught in Singapore based hospitality schools are preparing students with the necessary service skills for the hospitality industry. It examines the demand for online learning among the Singaporean hospitality students who will be entering the hospitality industry. The larger

purpose of this study is to explore the effectiveness of online hospitality programs and their usefulness for students to understand the intricacies of the industry. This study can also be applied to assess whether online programs prepare them well for a career in the hospitality industry.

2 ADVANTAGES & DISADVANTAGES OF TECHNOLOGY IN EDUCATION

Radovic-Makovic (2010) proposed that there are many advantages and disadvantages in the use of online teaching platforms when compared to the traditional pedagogical approaches. American higher education faculties have been the leaders in the field of online education. As a result of well-funded research, educators have been able to make significant improvement on their pedagogical content to their students. One advantage is the easy availability of research material online which has enhanced virtual teaching platforms and has benefitted the learning of students and enhanced the interaction between instructors and students. According to Radovic-Makovic (2010), online hospitality courses are becoming more popular than normal institutions delivering face-to-face instruction. As compared to the traditional ways of learning, online learning has increased study efficiency, which results in studies being completed in a shorter time frame. This favors the learner, especially when he is eager to start his career in the workforce as soon as he completes his studies. Online learning is becoming popular when delivering information in the fastest time. Kathawala and Wilgen (2004) mentioned that cost efficiency, made-to-order learning 24/7, superior learning capabilities that involves retention in a risk-free, reliable, and interactive environment are strong reasons to adopt online methods. Song (2010) stated that online learning technology can simplify a concerted student-centred learning environment. This will allow students to be actively involved and be able to pace their independent learning.

However, in some areas of the world, like Myanmar, where students do not have the opportunity to have regular internet connection, online learning is still only something they can hope for (Calderaro, 2015). Some institutions also lack the technology and software to implement online learning. In some quarters, traditional educators are of the opinion that online learning does not replicate face-to-face instruction to the extent of replacing it. It will take some time for educators who are in responsible positions to make changes. According to Calderaro (2015), the hospitality industry should also accept students who have completed online courses on par with traditional institutions.

Kruse (2004) stated that there are confines to instructors when they are conducting online classes. Instructors have to study whether the current technological infrastructure of the institution is capable of fulfilling their training goals. Additional expenditure for soft and hardware technology must be justified to the stakeholders. Furthermore, the soft and hardware to handle e-learning must also be compatible with the current system. As for the learner, technology issues like unavailability or inconsistency of the required technologies needs to be addressed. One of the strengths of

online learning is the propagation of all tools of learning like computers, mobile phones, and personal devices. The over dependence of these learning tools might be a detriment to the user if ever there is a technological malfunction beyond their control.

Daymont and Blau (2008) stated that although some students find online learning satisfying, there are skeptics amongst administrators and employers. One reason for the skepticism is due to the fact that, historically, online programs were run by not so respected for-profit institutions. A survey of corporate recruiters recorded that there are employers who think that graduates of online programs is somewhat inferior to graduates from traditional educational institutions. Although this negativity towards online learning is slowly diminishing, as research has indicated, it will still take some time to totally eradicate the biasness towards conventional methods of instruction in educational institutions (Daymont & Blau, 2008). Song (2010) determined that the flexibility of an online learning environment given to students may be a detriment to their motivation towards completing their studies. Facilitation mediated by computers can distract and alienate students if they are not motivated enough. The success of any online program hinges on whether students are motivated enough.

2.1 Situating e-learning in the hospitality context

The definition of online learning incorporates more than just the use of the internet. It is defined as the delivery of learning materials and content through the many forms of technology, like e-learning, computer-based learning, and multimedia technologies (Kathawala & Wilgen, 2004). Online learning is a popular way where a student can be educated without the need to have face-to-face classes on campus. Students are able to learn while they attend to commitments that are simultaneously taking their time. Mayadas and Miller (2014) identified that online courses uses distance as the differentiating factor between the learner and the educational institution. Online courses accelerate bringing the three main elements together; the teacher, the student, and the content. Online learning, or e-learning, has changed the global mind-set in higher education. The applications have become more and more varied and this diversity has made it difficult to distinguish the many variations of online learning (Mayadas & Miller, 2014).

Technology-enhanced learning has changed face-to-face instruction to one of promoting distance learning. Online learning has managed to blur the traditional relationships of face-to-face instruction versus distance learning. It is becoming very difficult to define the common methods of instruction between face-to-face and online instruction. There needs to be a standard by which these different learning environments can be compared. In this way, the learner will be able to judge by himself, his best approach to learning. Online learning must be able to meet the needs of the learner and must be appealing enough to capture the online learners' needs and expectation. According to Daymont and Blau (2008), there are several reasons why students are turning to online courses for their education. Some students might assume that online learning suits their learning style or their

personality. Students may prefer written communications instead of face-to-face instruction.

2.2 Technology enabled education initiatives in Singapore

Singapore's education ministry has been encouraging the use of information technology (ICT) to its' institutions so that they are able to change learning and teaching methods in a way that students can understand (Ministry of Education, Singapore 2013). The Singapore Ministry of Education (MOE) started the use of non-computer aided technology in education in the 1970s. Examples of these would be overhead and slide projectors (Koh & Lee, 2008).

During the 1970s, teaching aids like overhead and film projectors, and television were frequently used to enhance learning for interested students. The instructors were not given the opportunity to improve their teaching methods and they were also not competent enough to experiment with any new technology. This was mainly due to the mindset of teachers not accepting new technology. Locally produced resources were lacking and most teaching tools were imported. In the 1980s, the Singapore Ministry of Education (MOE) developed a plan that was to provide some basic background and infrastructure to all institutions of learning from all levels starting from primary school (Koh & Lee, 2008). Phase 1 (MP1), from 1997- 2002, was to provide a basic infrastructure in schools and to train teachers. The total cost to the government was SGP\$6 billion over the course of six years. Phase 2 (MP2)'s inauguration began in 2003 and ended in 2008. This phase emphasized information and communications technology into learning and the government spent more than SGP\$470 million over a span of five years. The final phase (MP3) started in 2009 and ended in 2014. This time, the emphasis was on interactive development through a two-way environment that benefited students' ability to think. Institutions were given the opportunity to revise their teaching methodologies (Temasek Polytechnic, 2015a). Since it was a directive from the MOE, online learning had to be incorporated into the various educational institutions' curriculum.

2.3 Polytechnics leading the hospitality education in Singapore

The Singapore hospitality industry is driven by business from the casino integrated resorts, medical tourism, and the Meetings, Incentives, Conventions and Exhibitions (MICE) business. As such, there is need for skilled and competent workforce that is specifically trained to cater to the businesses (Singapore Tourism Board, 2015). The Singapore government's agencies have mandated that educational institutions raise the capabilities of students who are entering the hospitality industry. B. Tan (personal communication, September 19, 2015) stated that the Singapore government planned for the polytechnics to be capable of preparing a skilled workforce for the hospitality industry. All five of the government polytechnics offer programs that have some components of tourism and hospitality.

There are five polytechnics in Singapore that are under the jurisdiction of the Ministry of Education. They are, Temasek

Polytechnic, Nanyang Polytechnic, Ngee Ann Polytechnic, Republic Polytechnic, and Singapore Polytechnic. At the polytechnics, the MOE left the decision of incorporating online learning to the individual institutions. Since the directive is flexible and largely self-directed, there is a level of inconsistency between Singapore's five polytechnics in terms of adopting online learning in their respective syllabi. The mandate from MOE is for the polytechnics to have modules that have some elements of electronically prepared tutorials and lectures (Singapore Polytechnics, 2015).

There are three polytechnics in Singapore that offer programs specifically in hospitality. They are Nanyang Polytechnic, Republic Polytechnic, and Temasek Polytechnic. The other two polytechnics offer related programs but with more emphasis on tourism. Each of the three polytechnics offer an average of two hospitality related courses, like Hospitality Marketing and Customer Service Management, which are entirely online. Almost all of the courses offered by these three polytechnics have some element of online learning. They are a combination of tutorials and lectures that are uploaded on a learning portal, like Blackboard (Singapore Polytechnics, 2015).

Temasek Polytechnic's Diploma in Hospitality and Tourism Management, for example, has incorporated this directive to include at least four hospitality related courses that are delivered totally online (Temasek Polytechnic, 2015a). Temasek Polytechnic has placed their emphasis on online learning towards that of the Singapore Ministry of Education's directive. Instructors have the opportunity to go through three phases of training within 12 hours of online-teaching. Students are also given the opportunity to engage in online learning in the courses of their discipline. The School of Business, for example, is mandated to have at least one course for each diploma to be facilitated entirely online. The School of Business has three diplomas that are focused on hospitality. They are the Diploma in Hospitality and Tourism, the Diploma in Leisure and Events Management and the Diploma in Culinary and Catering Management (Temasek Polytechnic, 2015b).

2.4 Diversity of the e-learning platforms

Polytechnics in Singapore have become recognized training grounds for established companies who want to be part of the Adult Web-Based Learning (AWBL) system (H.W. Tan, personal communication, November 01, 2015); content can be delivered through online courses or a mixture of face-to-face classroom instruction and online (Sawyer, 2005). With its obvious advantages, it is popular with the hospitality industry. With the demands of their job function, hospitality practitioners found working part time and obtaining an education via online highly attainable. With such high demands, educational institutions became popular and are competing with other institutions for the attention of the eager student who wants to improve himself.

The change in computer technology has improved the training landscape and has been adapted by many educational institutions of higher learning with the use of virtual teaching platforms (Dale, 2003). Since the economy has now changed from industrialization to information, there is a quest for employees to strive to improve their education. This demand

has influenced educational providers to include online courses in their curriculum (Sawyer, 2005). As a result, there is a great demand for online teaching and learning tools and the eventual delivery of courses have become popular. Stakeholders like the government, businesses, educational institutions and associations started to include invest in the delivery of quality online teaching and learning tools (Sawyer, 2005).

Everly (2011) stated that although there are numerous types and models of online platforms available, they contain common functions like content availability, assessment tools and course management materials. According to Keengwe and Kidd (2010), online learning platforms not only involve contexts that are online but also include a delivery method that uses all genres of technology across all areas of discipline. Some of the computer-based platforms include the use of new media that are fixed and mobile. In Asia and the United States, Blackboard is the most popular tool that educational instructors use to facilitate lessons online to enhance their teaching efforts. The open source platform Moodle is a serious contender. WebEx, Canvas, Adobe Connect, Skype in the Classroom, Google for Education, etc., are also used by some institutions. Blackboard uses technology to capture applications like video, audio, animation and others to their site for students to enhance their learning (Blackboard, 2015). Learning with technology is increasingly common in the management of learning and development amongst educators in hospitality institutions. The use of a learning management system, like Blackboard, is common due to its versatility and user friendliness. Educators and students are greatly encouraged when there is ease of use towards the various applications.

Lomine (2002) report that before 2001, facilitators had not used the internet to teach. Superior IT skills were required to use visual aids and multimedia capabilities to their full potential. Faculty of hospitality institutions were faced with the challenge of using online course material for their entire syllabi. It would also permit instructors to manage the course requirements with much more ease. With regards to assessments, components like quizzes, reflections, tests, examinations, and essays can be easily monitored. Students also have greater flexibility to fulfil these requirements at their own time. They can take the quiz and tests at their own convenience. Online teaching platforms also engage the learner to evaluate their performances and view their mistakes to enhance learning. An example would be the ability for students to view their grades that are posted onto a dedicated website. This confidential information can be accessed by the student from virtually anywhere at their own time. Instructors can have greater awareness of their cohort's progress in real time, instead of waiting for the next face-to-face meeting with the student (Costen, 2009).

2.5 Expectations of the Singaporean hospitality industry

According to S. Wong (personal communication, November 10, 2015), the demand for qualified labor in Singapore hotels has reached an all-time high. There is an obvious gap between what hospitality institutions are teaching and what skills hotels require for entry level positions. Hospitality is a

fast growing industry and it is natural that educational institutions are responding by offering related courses. This growth has also led to the hospitality industry requiring a higher competency level for graduates entering the industry. Expectations by the hospitality industry recruiters are for staff to be competent in the knowledge of the industry, coupled with technical ability and most importantly, to have the proper attitude.

It has been acknowledged that there are inconsistencies in hospitality institutions and there is a call for a more standardized way of verifying subject content in the curriculum so as to judge the competencies of new hires on the same playing field (Ricci, 2010). In order for hospitality educators to keep their syllabus current, they need to customize it to meet the needs of the industry. Oftentimes, hospitality curriculum has been criticized for not being relevant and out of date. And this is due to educators' unwillingness to engage with the industry. Researchers have oftentimes lamented that there is a need to engage with the industry for their input when establishing hospitality pedagogy. It is vital that industry input towards curriculum set-up is continuous, current, and applicable (Ravinchandran & Arendt, 2008).

Scott-Halsell, Blum and Huffman (2011) stated that managers in the hospitality industry need to be service oriented and guest attentive. To be successful, hospitality managers need to possess other skills that are not technical in nature. Qualities connected with emotional intelligence (EI) will make the difference for hospitality professionals to be successful. It was claimed that hospitality institution graduates do not have sufficient levels of EI to be effective leaders. EI qualities include the ability to handle unpredictable situations regarding guest service in the most positive manner that is accepted by all. Hospitality educators are encouraged to articulate plans to bridge the gap and incorporate EI into their curriculum. As high levels of interpersonal skills are required, it would be difficult to present this through online learning as live face-to-face facilitation from instructors are needed. The study showed the differences between a hospitality graduate's EI is significantly lower than that of an industry professional. This difference will be narrowed once the graduate enters the industry as they are forced to refine their EI skills while on the job. The study also recognizes the fact that to include EI to their curriculum, educators will face constraints such as budget and credit hours (Scott-Halsell et al., 2011).

As noted by Bilgihan et al. (2014), there is an obvious gap between what industry needs and what is being taught in hospitality institutions. Management skills are usually taught in the third year but they do not include strategic decision-making tools that are required by the industry. Bilgihan et al. (2014) suggests that Statistical Package for Social Sciences (SPSS) be offered to hospitality students. When it is offered in their curriculum, students will be able to perform accurate strategic marketing research and analysis. This skill is useful in the hospitality industry as the data collected will be used to make executive decisions. It will benefit students if they possess this skill to enhance their competence in the field of their choice. Seidel (2011) suggested that hospitality online learning in social media can be used to create awareness. Users of social media tend to adopt a more relaxed approach

to obtaining information. The use of learning portals should also be adopted to provide tailor-made training to match the specific needs of the learner.

3 STUDENTS, SKILLS AND CHALLENGES FOR E-LEARNING

3.1 Hospitality student demographics: Its millennial characteristics

Typical 'millennial students' primarily make up the student population pursuing a Singapore polytechnic hospitality diploma (Temasek Polytechnic, 2015b). Kotler and Armstrong (2009) stated that the majority of hospitality students around the world belong to the millennial generation. These are students that are born between the years 1981 – 2000. Raines (2002) identified that the characteristics of a millennial student is one that is well-educated, talented, definitely open-minded and most importantly, achievement oriented. The millennial generation's learning styles are different as they are exposed to various issues and trends like globalization, multiculturalism and technological advances.

Frand (2000) advocated that the learning styles of the millennial generation must include mediums that involve teamwork, heavy use of technological products and structural activities that are experiential in nature. Communication is the key and the voluminous use of emails and other means of social media are warranted if students of this generation are to be engaged. As supported by Howe (2003), the millennial generation is always looking to obtain the best technology available wherever they are. Song (2010) suggested that the challenge for hospitality educators is to recognize differences in the students' way of learning. The course developers need to understand the different learning patterns of the students that are related to their characteristics and behaviors.

Educators must recognize that previous learning theories and pedagogies need to be modified to suit the needs of students from the millennial generation. This modification includes interactions between students and their peers that would not compromise teaching standards. Hospitality educators need to understand that students from the millennial generation have different expectations. Their approach to learning is determined by the amount of access to information through technology. The suggestion was that there should be a complete rethink of teaching practices to meet the needs of the millennial generation. Part of the direction is to have educators consider themselves as co-learners with the students. There have been instances where educational providers offer poor and inconsistent training to instructors who are not qualified. Some institutions would provide this inconsistent training just to obtain government grants and training subsidies. The professionalism in training is diluted and the end users are the ones that are not benefiting (McHaney, 2011).

A recent graduate from the millennial generation does not seem to wait for promotion. Training and education does provide them with the required skills but their behavior is a matter of concern. Having a general poor work ethic,

enthusiasm, attitude, and passion results in low self-esteem. A person belonging to the millennial generation will end up having unrealistic expectations upon entering the hospitality industry. This could be the reason for the high attrition rate of the number of hospitality students entering and remaining in the industry (H.W. Tan, personal communication, November 08, 2015).

Bilgihan et al. (2014) conducted a survey for their study to investigate the level of prominence that technological skills of hospitality students as it is observed by the industry. The result of their survey found that amongst the hospitality executives that were interviewed, only a little more than 20% of them graduated with a concentration in hospitality. This specialization in hospitality does not translate that these executives were ready for the industry. Evidence from these graduates determined that their information technology skills were limited to basic software available in the market. It does not conclude that online learning or the lack of it was a factor to their overall learning and readiness to the industry.

3.2 Information technology skills of the hospitality students

During our interviews with hospitality students at Temasek Polytechnic on the effects of online learning, a high percentage said that they did not feel confident when they were preparing for employment in the hospitality industry. Student A felt that the subjects that were taught entirely online did not have the specific details, like face-to-face time, that their other courses had. Student B gave the example of an online course that had a strong component of customer service skills instruction. The course had too much information and reading that students felt overwhelmed and could not participate in tutorial exercises. Role playing exercises were not effective online as students needed feedback instantaneously (male student, 20 years of age). C. Hogg (personal communication, July 31, 2015) claims that Singapore polytechnic students might be intelligent when it comes to memorizing certain ideas and concepts but they lack the certain soft skills that can only be taught in person. The courses that these students learn online would benefit them in the long run but not when they initially enter the hospitality industry. The students need to optimize the time with their instructors and peers in order to understand and practice soft skills that will prepare them for a career in hospitality.

Temasek Polytechnic's Diploma in Hospitality and Tourism Management offers a course that has the practice of property management systems (PMS) in its curriculum (Temasek Polytechnic Singapore, 2015d). However, the time spent on learning the PMS is restricted to only five weeks out of a curriculum of fifteen weeks. Hospitality lecturer M. Rahim (personal communication, October 19, 2015) emphasized that in order for a learner to fully understand the complexities of the PMS, there must be some face-to-face time together with the instructor. Direct and immediate feedback are warranted to ensure that learning is maximized. There were occasions where the teaching of PMS was done online as an experiment and it turned out to be a failure as the students were not able to perform simple functions. This was also highlighted by industry partners when the students were hired as interns (M. Rahim, personal communication, October 22,

2015). According to S. Leow (personal communication, September 12, 2015), due to this lack of time in training, graduating students find it a challenge to function according to industry standards when it is time for them to enter as the job market in a full-time entry level position at a hotel.

Lomine (2002) conducted research with students at the University of Gloucestershire, England, on the effects of online learning and teaching. A total of 140 questionnaires and four focus groups were engaged for a semester. The majority of the students did not mention any difficulty during the semester with regards to obtaining material and participating with their cohort and their tutor online. The students said that they welcomed the fact that they did away with the conventional methods of face-to-face classroom time. They mentioned several advantages like being flexible and having support material available almost instantly. However, there were some students who were still apprehensive about using their IT skills and were afraid that they would be left behind. It took the students some time to understand the requirements of the subject and to participate to their full ability (Lomine, 2002). Kruse (2004) stated that online learners are at a disadvantage as they are not able to participate in communication tools that are being taught face-to-face. With the use of technology, teaching of communication mechanisms like body language and peer-to-peer learning cannot be delivered to produce the required results. This is especially so in hospitality learning where the demonstration of communication tools is important.

Information technology has become an essential part of hospitality. Owners and operators of hospitality services have to accept that adopting IT far outweighs that of the negative. As a result of this, hospitality institutions have to react to provide their students with the required skills in IT for them to participate in the very competitive job market. According to Bilgihan et al. (2014), the hospitality industry has stressed the importance of adopting technology in their operations. Technology has become indispensable in the way hotels, for example, become more efficient in their service delivery. Even for back of the house operations like human resources, technology will enable them to deal with hiring requests, communication, and training with potential candidates. Information technology is even more evident when hospitality services use it for profit-driven departments. The field of revenue management has embraced information technology initiatives wholeheartedly as results have proven that the extra revenue gained by hotels is due to automation. The Property Management System (PMS) of a hotel is an example of available technology in hospitality that is widely accepted and thriving when it is used to its maximum capacity. Offering IT training is a key component for hospitality schools to provide an effective and relevant education. It is also suggested that hospitality institutions continue to identify the challenges of the industry and to offer its students ample opportunity to excel in the areas of their specialization (Lashley & Barron, 2006). While it has been identified that skills in information technology are vital in a hospitality institution's curriculum, it is difficult to present these skills in an online learning format. Busby and Huang (2012) stated that due to the lack of technical knowhow of faculty, it is even more difficult to offer related subjects online.

Busby and Huang (2012) indicated that information technology is an area that has not been fully recognized by hospitality institutions to dedicate more time to their respective curricula. They have identified three main reasons for this. Firstly, hospitality institutions do not have enough resources to provide coaching in technological knowledge. The second reason is the lack of faculty that are competent enough to facilitate classes that require the frequent use of technology. And finally, in this fast changing environment, involvement of faculty with their industry partners is not widespread. Technological advancements are constantly changing at such a rapid pace that it is difficult for hospitality institutions to adapt to these changes and at the same time, attempt to facilitate a curriculum that is relevant to the industry. This difficulty to keep up with technological changes has stymied growth for government-run hospitality institutions that are progressive in nature but lack funding for areas of technological advancement (Busby & Huang, 2012).

3.3 Challenges of e-learning in hospitality

According to Lomine (2002), there are many myths to explain why hospitality faculty are disinterested in engaging in online learning and teaching activities in their subject curriculum. It is difficult to develop such curriculum and it takes time, resources, and expertise to offer to students to enhance their learning. The types of problems subject developers face when trying to introduce online learning are technological and pedagogical in nature. Hospitality academia face the practicality of running online classes that are relevant to the industry.

In a survey conducted by Sciarini, Beck and Seaman (2012) on the popularity of online learning coursework, it was found that almost 35% of hospitality students indicated that the delivery of face-to-face material is the same as in the online mode. However, almost 50% stated that face-to-face delivery was more effective. Only 20% said that online delivery was superior when it concerns the demonstration of content. The survey also recorded that more than half of the hospitality administrators believed that face-to-face content is greater than online when it concerns communication between students and tutors. In general, 80% of hospitality administrators show that they favor face-to-face instruction over online learning styles. The availability of library resources through the internet has made the availability of information viable to a lot more learners. Improved technology has also made the accessibility of complex information easier. Social media has also allowed learners to participate in formal and informal learning methods. However, in the area of hospitality, the survey showed that online learning methods are still not advanced enough for industry practitioners to be convinced that it encompasses all that there is to learn about the industry.

A study of hospitality education administrators conducted by Mejia and Phelan (2014), found that instructors who primarily teach through the face-to-face method are not comfortable delivering online courses. The main reason was that these instructors are concerned that they do not have the ability to achieve the required personal interactions when they deliver customer service related courses online. The hospitality industry has also expressed their apprehension

when the teaching of service delivery is online. The core value of the hospitality industry, which is service orientation, is diluted when face-to-face instruction is not available.

The above study also concluded that the reluctance of faculty to teach online is a factor in the quality of hospitality courses available to suit the industry. Hospitality education administrators interviewed have a difficult time persuading faculty to produce and teach online courses that are accepted by their peers. The faculty claim that they are ostracized by their peers when they deliver online classes. Some also say that they are negative towards online teaching because of the extra amount of time taken to develop and load a course online. Faculty members of hospitality educational institutions also believe that they are unable to obtain tenure because online teaching is not part of the criteria for promotion. The feedback from faculty also suggests that students are passive when they are engaged in online learning. Instead of aggressively contributing, like the traditional method, students tend to be more relaxed and watch demonstrations on video rather than participating (Mejia & Phelan, 2014).

Instructors interviewed in the study favoured a combination of online and face-to-face instruction. This blended program approach was approved by more than 82% of the respondents. It is believed to be the best of both worlds as the benefits of interacting with students and the inclusion of information technology will ensure that students' learning is captured. The faculty also cited operational challenges as a very serious matter that cannot be entirely eradicated. With online learning, instructors feel that students will have many opportunities to cheat in their assessments. Uploading quizzes, exams and other components online does not guarantee that students are completing them on their own (Mejia & Phelan, 2014).

It is difficult to get hospitality academics to adopt the use of online learning and teaching (OLT). Along with this notion come myths about OLT in hospitality. The most common myths are that hospitality is not suitable for online learning and teaching. Academics feel that it is not appropriate to use OLT because most of the subjects have a strong element of practical exercises. Academics also feel that in order to engage in OLT, superior IT skills with a strong support infrastructure must be set up. On the other hand, faculty with appropriate IT skills will go overboard with their knowledge and unknowingly confuse students with unrelated jargon and terminology, thereby putting them off. As the hospitality education industry is a reactionary one, the lack of feedback from students who want OLT cannot be ignored. Although these are myths, they cannot be debunked entirely. There is insufficient research available to prove that the virtues of OLT are overwhelmingly accepted by students and the industry (Lomine, 2002).

Song (2010) reported that critics of web-based learning programs have concerns regarding integrity and effectiveness. Their concerns are that online learning lack face-to-face interaction and because of the isolation, it lacks appropriateness of content material. Critics argue that traditional classroom environment cannot be replicated on the internet in terms of social presence. Facilitators of traditional classroom methods of education usually receive instantaneous verbal cues from students with regards to their

understanding of material. Online instructors do not always receive immediate feedback from students in terms of course content and instructions.

3.4 Active and experiential learning in hospitality

Most hospitality programs have been designed to have face-to-face interaction with instructors and require interactions with peers as key components in the learning. It would be a mistake to take the curriculum and create it wholly online (Lomine, 2002). What Lomine (2002) suggested was to be selective in the material that is presented online. Perhaps only parts of the curriculum, case studies and required readings can be loaded online for easy access. Some classes can have the variation of being conducted away from the traditional method of classroom interaction. Students will be encouraged to use various resources to obtain material online. The challenge is to convince the instructors to see the value of online learning and to engage with the cohort on their playing field.

In a study conducted by Song (2010) to understand satisfaction with online learning, it was found that hospitality students' method of learning is more contact driven rather than focusing on information and systems. This study created awareness amongst hospitality curriculum developers that they need to identify the quality and style of interaction with the students over the number of information and systems to obtain maximum student's satisfaction in the course. The study suggests that hospitality administrators and educators have been pitching their course material in a way that was not accepted by the students. As online learning is a form of self-directed study, the lack of physical interaction is a concern whenever educators want to enhance the quality of learning. They invariably focus their attention to the quality of interaction with the students instead of improving content. Song (2010) concluded that this might be one of the reasons why students felt that they were not prepared when they entered the hospitality industry.

The hospitality industry demands that graduates possess certain relevant skills and it is difficult for these skills to be taught online. Software like Point of Sale Systems, SPSS, and PMS need face-to-face interaction to make the learner totally understand its intricacies to the maximum. Bilgihan et al. (2014) also stressed that in order to arm students with the required skillsets; hospitality academia and industry professionals must agree on the curriculum. For the hospitality industry to engage with online learners, the agreement must address this issue.

Scott-Halsell et al. (2011) stated that Cornell University's Master in Management in Hospitality program uses problem-based learning (PBL) to assist students in their cognitive and behavioral skills. PBL activities include active listening skills, writing reflection papers, managing humor, and taping of meetings. This method of learning is also common in Singapore polytechnics (Singapore Polytechnics, 2015). S. Fu (personal communication, September 15, 2015) suggested that skills for job interviewing are one of the key areas for hospitality professionals in Singapore to learn.

Hospitality institutions must be able to prepare students to perform job interviews as it can be useful to gauge if a candidate is suitable for a designated position. As a practice

for the position of front office manager, situational question interviews through PBL, will provide a better understanding of the person than other types of interviews like behavioral and unstructured ones. Situational job interviews focuses on the job descriptions and lists the skills and responsibilities required for the position. The answers can be descriptive and to the point and based on the answers, the interviewee will be able to connect directly to the job. In this respect, the only way to assess if a student is performing with this skill well is to have face-to-face interaction with the instructor. It would be very difficult to assess if this learning were to be done online (S. Sathianathan, personal communication, Nov 02, 2015).

The learning styles of hospitality students in Britain, Australia, and Asia differ greatly. It was revealed in a study conducted by Lashley (1999), that a majority of students in a British and an Australian hospitality program exhibited learning styles that enjoyed practical activity. Yet, these students were not comfortable with conjecturing and reflection. However, hospitality students in Singapore, surveyed for the study, showed preferences for learning through observation and from thinking before acting. These students find studying case studies difficult as they need sufficient information and notice before they embark on a task. It would be difficult for Singapore hospitality students surveyed for the study to be active in online learning as there are few opportunities to engage in their preferred learning styles. Commonalities among the studies reviewed supported a strong desire to use online learning as the method of instruction in hospitality institutions (Radovic-Markovic, 2010, O'Neill, 2012 & Stewart et al., 2007).

4 FURTHER DISCUSSION

Studies conducted by Busby and Huang (2012), Mejia and Phelan (2014), Song (2010), and personal communications by industry professionals, conflicts with the perception towards online learning. There is a call for a blended approach as not all hospitality related programs can be delivered entirely online. This contradicts studies conducted by Radovic-Markovic, (2010), O'Neil, (2012), and Stewart et al., (2007) which concluded that online learning is the choice of instruction for hospitality institutions. Mejia and Phelan (2014) and Song (2010) emphasized that there is reluctance from hospitality educators to increase online learning. The many reasons given justify a more blended approach. Current hospitality institutions are on a quest to having more courses online to facilitate a wider market of students. Hospitality administrators need to ensure that their faculties are competent enough to pursue online teaching using up-to-date tools available to them.

Enhanced technology has changed the way online learning is viewed. There is a drive towards adopting technology despite its disadvantages to the learner in the area of hospitality training. There is still a necessity for learners to have face-to-face instruction in certain areas. In the field of customer service, for example, practical role plays are needed to enhance student learning. This sort of instruction needs immediate feedback from the instructor and hence, cannot be

duplicated online (Radovic-Markovic, 2010). Keengwe and Kidd (2010) emphasized the use of technology must include new media that are not only fixed but also ones that are mobile. This is evident when new technical applications are introduced to mobile devices that are free and easy to use.

As Blackboard is a popular learning platform, hospitality institutions are advised to adopt this medium to be able to use all applications to enrich learning. Facilitators need to be aware that there are applications to deliver their material so that it involves greater flexibility to the user and the administrator. Learning methods, like self-directed learning, can be implemented to further encourage learning. A blended approach between online delivery of content and self-directed learning is a possible method for students to study. One major challenge for institutions is funding. Non-profit educational institutions have the challenge of finding funds to upgrade their software. Public institutions like polytechnics will always be faced with a situation where constant upgrades in both hardware and software serve as challenges to attract students to enroll in their courses.

With the advent of technology, online facilitators need to be able to use it to reach students to the best of their ability. Lomine (2002) suggested that online instructors need to be able to utilize the technological resources available to engage with the millennial generation. Mayadas and Miller (2014) and Seidel (2011) also suggested the active use of social media to encourage online learning. Understanding the learning styles of students must be a pre-requisite skill for instructors engaging in online learning. Despite budget constraints, educators need to be able to encourage learners through social media. Singapore polytechnics have started engaging with students through social media but they have not been consistent and it is more on social activities rather than used as a learning tool (B. Tan, personal communication, November 09, 2015).

The interaction between faculty and online learners must be identified between individual hospitality institutions. Bilgihan et al. (2014), Lashley (1999), Lomine (2002), and Song (2010) concluded that if hospitality institutions demand that students be equipped with certain sets of skills, the opinions of students and the industry must also be engaged. The mindset and learning of Singapore polytechnic students must change from that of observation to learning through practical activity. A study is necessary to facilitate changing online learning from observation to practical activity. Learning from practical activity is most useful for hospitality learners but is also one of the most difficult pedagogies to be presented to the online learner.

Communicating in English is standard in the hospitality industry. The language skills of instructors must be competent enough to engage their students. Although there are no empirical research to support this claim, it is important for online instructors to make themselves understood when they are preparing pedagogy in the English language. From personal interviews with hospitality veterans and research by Keengwe and Kidd (2010) and Lomine (2002), online instructors need to engage in advance technology and be competent in making their pedagogy easy to understand for students.

Consistencies among the studies reviewed supported a strong desire to use online learning even more. The studies

conducted by Mayadas and Miller (2014) and Mejia and Phelan (2014) both called for well-established online platforms to be developed. Hospitality programs in institutions continue to develop and expand to reach wider untapped populations. The management of these online programs and courses need to be flexible to accommodate student's learning. Academic and industry practitioners must be consulted to influence students to enroll in online programs. In order for future hospitality online programs to expand, the technical ability of faculty must also be enhanced. Busby and Huang (2012) and Lashley and Barron (2006) concluded that IT training for faculty is a vital component for hospitality institutions to succeed when delivering relevant and effective pedagogies to their students. It has always been assumed that faculty of hospitality institutions teaching online hospitality courses are competent. The literature review regarding online instructors signifies that the key to the enhancement of any program requires the dedication and knowledge of faculty understanding the needs and wants of students and the industry.

The implication for the hospitality industry is to be involved in continuously updating hospitality courses to make it relevant and current. However, it is evident that whenever the industry is solicited for feedback, the response rate is low (Bilgihan et al., 2014). It is essential that hospitality professionals are sought to identify essential skills and competencies that are required for success. Hospitality educators are also criticized for not including their industry contacts when they are updating curricula. This reluctance not to include industry professionals has led to educators embracing syllabi that are antiquated. Ravinchandran and Arendt (2008) recommended the use of survey research methods to engage with hospitality professionals. As the level of professionals responding towards academics is low, more must be done to engage them. Industry feedback is greatly needed so that academics can gauge what competencies and skills that are relevant and essential for students to comprehend. A study is suggested to identify strategies that are successful when surveying hospitality professionals for their feedback. When hospitality professionals were interviewed, online surveys seem to be the strategy that could potentially provide the best response rate. If students are to be successful in the industry, holding management positions, they need to know their strengths and weaknesses. The students' skillset also need to be very adaptable to all types of situations. While technical skills are easier to comprehend and perform, Scott-Halsell et al. (2011) recommends that students obtain a sufficient level of emotional intelligence (EI). Hospitality educators and professionals need to strategize the formulation of incorporating EI into pedagogies. Along with that, competencies like strategy management and analysis should be explored so that it can be included in the curricula of polytechnics delivering hospitality online courses. By understanding and applying hospitality industry practices, educational institutions will be able to assist students towards their job satisfaction. Both industry and educators must understand that millennials require a different way of motivation. The distinct needs of these students, as suggested in the literature review, are currently not being met. As

suggested by Frand (2000), Howe (2003), and Song (2010), hospitality organizations are making calculated steps needed to inculcate a culture of pride and job satisfaction with the millennial generation. One major step is definitely to engage with hospitality institutions with regards to developing relevant pedagogy.

5 CONCLUSIONS

Students, industry professionals, and hospitality instructors interviewed by us were of the opinion that there is still a place for traditional face-to-face instruction in hospitality, despite all the promises given by the technologies. From the interviews, there is still the social element of face-to-face instruction that is appreciated by the learner. A medium between online and classroom teaching methods should be explored. This exploration must involve all interested stakeholders mentioned previously. A major challenge is to ensure that this medium is researched and delivered after positive feedback. Student satisfaction is an important component when marketing hospitality education. There needs to be better understanding between online learning variables and what influences student satisfaction. Millennial generation students are generally energetic and need to participate in classroom activities in order to learn. While independent work, like self-directed learning, is greatly encouraged, students would also prefer to have precise instructions during face-to-face classroom time. Classroom time is appreciated by students as they can also discuss issues that might not be related to the topic presented. In order to engage with students, online course material needs to be organized so that the students do not get confused and eventually get disinterested.

There exists limited research based literature for hospitality educators to set strategies on how to make their pedagogy appropriate to the industry. The only way educators can set their strategies is to actively engage with students and hospitality professionals. Most hospitality educators have at some point in time worked in the industry. Educators need to be able to use their industry knowledge and contacts to further enhance relevant teaching material. By constantly engaging with students for constructive feedback, hospitality educators can gauge the relevance of their pedagogy.

There is a disparity between what the students are learning in online platforms to what they need to prepare them for the industry. This disparity is evident in Singapore. This dissonance is still being debated by educators and hospitality professionals. Most of the research found was on online hospitality education. More research is required to gain a better understanding of how online learning in hospitality education can prepare students to be valued contributors once they enter the industry. Online hospitality program developers have the misconception that students are looking for more information and systems in their curriculum. But in actual fact, students would like to be engaged in interactive learning with either their peers or together with their instructors. Personal communication that we had with hospitality professionals conclude that the knowledge of polytechnic students can be enhanced if they had more courses that engages them with their tutors and peers. The

hospitality professionals should also understand the millennial generation more in order for them to be enticed to enter and remain in the industry. For online classes, it is a difficult process and must be managed constantly to produce the desired goals.

Hospitality institutions have an obligation to their students when it comes to equipping them to enjoy the benefits of online learning. The expectation of an online learning facilitator must be competent enough to understand the learning outcomes of the subject and be able to make changes to encourage student learning. There are some challenges within the online curriculum that needs to be fine-tuned, so that hospitality students from polytechnics are able to project the desired requirements to perform well in the industry.

More educational institutions are adopting online programs as opposed to traditional classroom learning in order to expand their reach to potential students. However, there are costs involved in terms of faculty, facilities, funds, and time to adopt online programs. This must be justified to the stakeholders, not only to administrators but to the hospitality industry as a whole. Based on the fact that the personality of millennials need to be engaged with interactive online curriculum, it cannot be assumed that this is identified by hospitality educators. The commitment towards student satisfaction with online learning must be emphasized by both educators and industry professionals. Hospitality educators must continue to add value towards their delivery of relevant curriculum when they understand the student's needs

REFERENCES

- Adler, P.A. & Adler, P. (2004). *Paradise laborers. Hotel work in the global economy*. Ithaca, Cornell University Press.
- Bilgihan, A., Berezina, K., Cobanoglu, C., & Okumus, F. (2014). The information technology (IT) skills of hospitality school graduates as perceived by hospitality professionals. *Journal of Teaching in Travel & Tourism*, 14(4), 321-342.
- Busby, G., & Huang, R. (2012). Integration, intermediation and tourism higher education: Conceptual understanding in the curriculum. *Tourism Management*, 33(1), 108-115.
- Blackboard. Retrieved from <http://blackboardsupport.calpoly.edu/content/about/whatis.html>
- Calderaro, A. (2015). *Connecting Myanmar: Internet Governance Capacity Building in Political Transitions. Media Development in Asia*. New York: Routledge.
- Chua, B.H. (2005). *Taking Group Rights Seriously: Multiracialism in Singapore*. Working Paper124, Asia Research Centre, Murdoch University.
- Collins, G.R., & Cobanoglu, C. (2008). *Hospitality information technology: Learning how to use it* (6th Ed.). Dubuque, IA: Kendall/Hunt Publishing Company.
- Costen, W. (2009). The value of staying connected with technology: An analysis exploring the impact of using a course management system on student learning. *Journal of Hospitality, Leisure, Sports and Tourism Education*, 8(2), 47-59.
- Dale, C. (2003). Carry on talking: The use of online discussion groups as a learning tool. *LINK8-E-Learning. LTSN for Hospitality, Leisure, Sports and Tourism*, 9(2), 59-63.
- Daymont, T., & Blau, G. (2008). Student performance in online and traditional sections of an undergraduate management course. *Journal of Behavioral and Applied Management*, 9(3), 275.
- Everley, M. (2011). Training methods. *The RoSPA Occupational Safety and Health Journal, Sep*, 29-32.
- Flick, U. (2006). *An Introduction to Qualitative Research (3rd ed.)*. London: SAGE.
- Frand, J. (2000). The information age mindset: Changes in students and implications for higher education. *EDUCAUSE Review*, 35(5), 15-24.
- Howe, N. (2003). *Presidents Institute: Understanding the millennial generation*. Retrieved from The Council of Independent Colleges: http://www.cic.org/publications/independent/online/archive/winterspring2003/PI2003_millennial.html
- Kathwala, Y., & Wilgen, A. (2004). E-learning: Evaluation from an organization's perspective. *Training and Development Methods*, 18, 5.01-5.13.
- Keengwe, J. & Kidd, T.T. (2010). Towards best practices in online learning and teaching in higher education. *Merlot Journal of Online Learning and Teaching in Higher Education*. 6(2), 533-541.
- Kotler, P., & Armstrong, G. (2009). *Principles of marketing*. Upper Saddle River, NJ: Pearson.
- Koh, T., & Lee, S. (2008). *Information communication technology in education: Singapore's ICT masterplan, 1997-2008*. Singapore: World Scientific Pub.
- Kravetz, D. (2015). Managing the millennial hospitality employee. *Hotel Management*, 230(2), 12. Retrieved from <http://ezproxy.library.unlv.edu/login?url=http://search.proquest.com/docview/1661094838?>
- Krueger, R. (1998). *Analyzing and Reporting Focus Group Results*. London: SAGE.
- Kruse, K. (2004). The benefits and drawbacks of e-learning. Retrieved from <http://www.e-learningguru.com/>
- Lashley, C., 1999. On making silk purses: developing reflective practitioners in hospitality management education. *International Journal of Contemporary Hospitality Management* 11 (4), 180-185.
- Lashley, C., & Barron, P. (2006). The learning style preferences of hospitality and tourism students: Observations from an international and cross-cultural study. *International Journal of Hospitality Management*, 25(4), 552-569.
- Lee, M.J., Olds, D.A., & Lee, C. (2010). *Journal of Hospitality and Tourism Education* 09/2010; 22(3), 20-26.
- Lin, S. (2002). Exploring the relationships between hotel management courses and industry required competencies. *Journal of Teaching in Travel and Tourism*, 2(3/4), 81-101.
- Lominé, L. L. (2002). Online Learning and Teaching in Hospitality, Leisure, Sport and Tourism: Myths, Opportunities and Challenges. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 1(1), 43-49.
- McHaney, R. (2011). *The new digital shoreline: How web 2.0 and millennials are revolutionizing higher education* (1st Ed.) Stylus Pub.
- Ministry of Education, Singapore: Press Releases - Integrated Online Learning Space to Enhance Students' Learning. (2013). Retrieved from <http://www.moe.gov.sg/media/press/2013/09/integrated-online-learning-space-to-enhance-students-learning.php>
- Mayadas, F. & Miller, G. (2014). Retrieved from

- <http://onlinelearningconsortium.org/updated-e-learning-definitions/>
- Mejia, C., & Phelan, K. (2014). Hospitality Instructors' Preference for Blended Teaching: A Bridge to Full Online Course Delivery? *Journal of Teaching in Travel & Tourism*, 14(4), 343-364.
- O'Neill, J. (2012). Using focus groups as a tool to develop a hospitality work-life research study. *Int J Contemp Hospitality Mngt International Journal of Contemporary Hospitality Management*, 27(8), 873-885.
- Raines, C. (2002). *Managing millennials*. Retrieved from www.generationsatwork.com/articles/millennials.htm
- Radovic-Makovic, M. (2010). Advantages and disadvantages of e-learning in comparison to traditional forms of learning. *Annals of the University of Petrosani, Economics*, 10(2), 289-298
- Ravichandran, S., & Arendt, S. (2008). How to Increase Response Rates When Surveying Hospitality Managers for Curriculum-Related Research: Lessons from Past Studies and Interviews with Lodging Professionals. *Journal of Teaching in Travel & Tourism*, 8(1), 47-71.
- Ricci, P. (2005). A comparative analysis of job competency expectations for new hires: The relative value of a hospitality management degree. Published a dissertation submitted in partial fulfillment of the requirements for the degree Doctor of Education University of Central Florida Orlando, Florida
- Ricci, P. (2010). Do Lodging Managers Expect More From Hospitality Graduates? A Comparison of Job Competency Expectations. *Journal of Human Resources in Hospitality & Tourism*, 9(2), 218-232.
- Sawyer, E. A. (2005). Online learning programs: Goals, benefits, problems and communities of practice (Order No. 3190050). Available from ProQuest Dissertations & Theses Global. (305343093). Retrieved from <http://ezproxy.library.unlv.edu/login?url=http://search.proquest.com/docview/305343093>
- Sciarini, M., Beck, J., & Seaman, J. (2012). Online Learning in Hospitality and Tourism Higher Education Worldwide: A descriptive report as of January 2012. *Journal of Hospitality & Tourism Education*, 24(2/3), 41-44.
- Scott-Halsell, S., Blum, S., & Huffman, L. (2011). From school desks to front desks: A comparison of emotional intelligence levels of hospitality undergraduate students to hospitality industry professionals. *The Journal of Hospitality Leisure Sport and Tourism Education*, 5(3), 3-13.
- Seidel, P. (2011). 7 trends driving the future of corporate training services in community colleges. *Training Industry*. Retrieved from <http://www.trainingindustry.com/blog/blog-entries/7-trends-driving-the-futureof-corporate-training-services-in-community-colleges.aspx>
- Singapore Polytechnics. (2015). Retrieved from <http://www.polytechnic.edu.sg/introduction/available-courses?Page=4>
- Singapore Tourism Board. (2015). Retrieved from <https://www.stb.gov.sg/>
- Song, S. M. (2010). E-learning: Investigating students' acceptance of online learning in hospitality programs (Order No. 3438813). Available from ProQuest Dissertations & Theses Global. (848922079). Retrieved from <http://ezproxy.library.unlv.edu/login?url=http://search.proquest.com/docview/848922079>
- Stewart, D., Shamdasani, P., & Rook, D. (2007). *Focus Groups: Theory and Practice (2nd ed.)*. London: SAGE.
- Temasek Polytechnic. (2015a). *Innovative Teaching and Learning*. Retrieved from Temasek Polytechnic: http://www.tp.edu.sg/home/courses/ftc_acad.htm
- Temasek Polytechnic. (2015b). Retrieved from Temasek Polytechnic: http://www.tp.edu.sg/home/courses/ftc_acad.htm
- Temasek Polytechnic. (2015c). *Hospitality & tourism focus group August 2015*. Singapore: Temasek Polytechnic.
- Temasek Polytechnic. (2015d). *Lodging management subject review 2015*. Singapore: Temasek Polytechnic.

SUBMITTED: JAN 2016

REVISION SUBMITTED: APR 2016

ACCEPTED: MAY 2016

REFEREED ANONYMOUSLY

PUBLISHED ONLINE: 10 JUNE 2016