Transforming Delivery Of Education In E-Learning Through Laptop: A Study Of Business Students’ Perception In Higher Education

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Abstract

In higher education, students are deemed to be the pivotal customers of universities. In order to succeed from ever increasing competition and to maintain sustainability, satisfying student’s needs and their expectations are the rudimentary elements for universities. This study tends to investigate student’s preferred method for learning in context of mobile devices i.e. particularly laptop, in higher education institutes of developing countries. For this purpose, higher education service (HES) quality indicators by Kwan and Ng (1999), have been utilized in e-learning context of a developing country i.e. Pakistan, particularly to examine student’s preference in terms of learning via laptop or face to face method. By conducting a quantitative survey, the results of present research indicated that majority of students preferred blended learning model for e-learning setting i.e. mixture of both laptop and traditional method. Also, the findings revealed that, students are willing to experience e-learning via other mobile devices’ therefore, further research should be carried out in said context of e-learning in developing countries to enhance student’s satisfaction as well as quality of services provided by universities.

Keywords Service quality, course delivery, E-learning, Higher education service (HES) quality indicators

1. Trends of virtual technologies in higher education

In recent times, a strategy of online learning delivery in lieu of, or in combination with, the on campus/ traditional learning method has been adopted by higher education institutions in developed countries in particular, and elsewhere around the world in general (Cuesta Medina 2018). Alsaaty et al. (2016) mentioned a 2011 report in their study, which stated that atleast one online course was being opted by over 6.1 million students, of which 31% students were belonged to higher education taking atleast one online course. While another report by Allen and Seaman (2013) highlighted that “the number had increased by 570,000 students for a total of million
students taking at least one online course.” Same report further stated that the growth rate of at least one online course enrolment by students was at its highest level with 9.3%, and it was evident that trend seemed to increase in future (Allen and Seaman 2013). Since then speculations have been raised as what are the driving factors behind this shift of trend and what affect institutions would get across the country.

Innumerable external forces have been triggering the shift in context of strategy making for educational delivery, which were beyond the institutional influence as well as multiple internal dynamics have driven said changes in an entire learning process (Gillett-Swan 2017). Deming, Goldin and Katz (2012) explicitly identified that course delivery method around the world, has been majorly driven and influenced by the extensive growth in for-profit education and the expanding number of public universities. In addition, another significant factor for strategy development in academic planning is extreme competition among these institutions that are continuously seeking greater enrollment (Pincus et al. 2017). For instance, the ratio of institutions that enroll students in similar degree programs is strikingly high.

According to a report published by National Center for Education Statistics (2015) stated that in the year of 2011 in United States, the total number of degree granting institutions was 4,703. While a lot of institutions faced multiple difficulties since that time, i.e. “including budget cuts, declining enrollment and the emergence of a variety of new educational opportunities for students.” Some of the issues have been addressed by Giroux (2015) in his study that “the future of higher education is in a state of crisis and many of the challenges include budget cuts, diminishing quality, the downsizing of faculty, and the revamping of the curriculum to fit the needs of the market.”

On the other hand, author pointed out multiple challenges that are being faced by traditional learning based higher education institutions in developing countries i.e. “mounting costs for new technologies, campus renovation, employees’ compensation, and the like while, at the same time, they have experienced severe budgetary constraints as a result of dwindling revenue and endowment” (Pucciarelli and Kaplan 2016). Further adding to these impediments, the drastic growth of massive open online courses (MOOCs) is the major threat to many traditional learning institutions, as free online college courses have been offered through e-learning that can be accessible by public around the world (Allen and Seaman 2013). Therefore, multiple researches vehemently suggested blended learning as an optimal solution for higher education institutions, which include the combination of e-learning by mobile devices and traditional learning.

1.1. Laptop and its potential instructional uses in higher education

Due to the proliferation of technology as well as multiple external and internal forces, it is imperative for majority of institutions to rethink and redevelop their strategy and policies pertaining to traditional education by “going online” (Pincus et al. 2017). Besides this, based on a manageable cost structure, such technological innovations and mobile devices should be adopted that assist in greater enrolment (Davies, Mullan and Feldman 2017). Therefore, multiple
technologies have been utilized for e-learning around the world, which includes desktop/computer, laptop, tablet, and other mobile devices i.e. smart phones (Potkonjak et al. 2016, Yusuf 2006); whereas, in current study preference of students in context of e-learning though mainly laptop or traditional/face to face method has been examined in perspective of a developing country i.e. Pakistan. Basically, laptops functions similar as computers/desksops, including Computer-Supported Collaborative Learning (CSCL); however, laptops can be common as class room tools due to ubiquitous nature, small in size and easy portability. Moreover, bi-directional capability has been in-built in laptops “e.g. built in camera, mic and speakers” and an increased level of mobility (Pilgrim, Bledsoe and Reily 2012). Studies conducted by Castillo-Manzano et al. (2017) and Efaw, et al. (2004) highlighted that usage of laptop in higher education not only enhances performance of students (learning) and attitudes (motivation/interest) but also positively influence the teaching efficiency.

In present study, it is assumed that students with favorable perceptions related to e-learning would lead towards greater number of potential learners in context of increased online enrolment. Thus, increased enrolment in online courses/programs could help reduce the overall educational cost of many institutions. Furthermore, multiple researches stated that the term distance learning can be used interchangeably with terms like “e-learning, online learning, online collaborative learning, virtual learning, web-based learning and technology-mediated learning” (Tarus, Gichoya and Muumbo 2015, Ali and Ahmad 2011). In the past, numerous researches compared face to face and online programs in multiple institutions which strengthen the viewpoint of present study (Brown and Park 2016, Pai 2013, Summers et al. 2005, Clark and Jones 2001). Besides this, Fedynich et al. (2015) and John et al. (2014) investigated perception of students regarding quality of online education and also suggested further research at device level in e-learning context. Consequently, majority of experts showed radical interest in context of measuring quality of different learning methods, mainly e-learning as quality assessment is deemed to be a vital component in all fields (Lee 2017, Gress, et al. 2010).

Service Quality Indicators of Higher Education

In context of service quality, literature clearly highlighted customers as a pivotal component in defining quality of service (Kessler 1995). Though, service quality is not an ambiguous concept in terms of higher education sector. Number of researches highlighted that lack of consensus exist when it comes to one universally accepted definition for higher education sector; thus, service quality’s general standards should be considered useful for higher education institutes.

However, Kwan and Ng (1999) proposed a clearly defined set of higher education service (HES) quality indicators, and a lot of researches applied them to examine the educational quality that is delivered by higher education institutes (Peng et al. 2006, Watson, Saldaña and Harvey 2002). Figure 1 exhibits nine factors of HES quality indicators by Kwan and Ng (1999), which are shown below (see figure 1).
Figure 1. Higher Education Service (HES) Quality Indicators

This current study examined numerous elements that have influenced student’s perception in context of mobile devices in learning process. In the past, few researches have been conducted pertaining to use of mobile devices in e-learning especially in context of a developing country i.e. Pakistan. However, little research has been carried out to examine perception of student’s concerning face to face versus online education in perspective of business students of higher education institutes. Therefore, the aim of present study is to investigate perception of business programme students regarding traditional versus e-learning mainly through laptop, in a developing country i.e. Pakistan. In line with this, higher education service (HES) quality indicators by Kwan and Ng (1999), have been utilized in current study. However, Instruction medium i.e. eight HES quality indicator, cannot be utilized in this study as two instructional mediums have been selected to investigate preference of students.

Methodology

The aim of present study was to examine the key factors determining student’s perception across higher education service (HES) quality indicators regarding implementation of device i.e. laptop, for learning process in higher education. Respondents were chosen from higher education institutes of a developing country (Pakistan), which consisted on students of both public and private sector.
universities. This particular sample of students was chosen because they were already getting education in a blended learning setting i.e. a combination of e-learning and traditional learning method. Thus, convenience sampling was used for this descriptive research as this from of research enabled researcher to show data meaningfully in numeric values (Alsaaty et al., Traditional versus online learning in institutions of higher education: Minority business students’ perceptions 2016, Maxwell 2012). Besides this, respondents of present study were enrolled in business programmes i.e. “BBA Hons, BS Applied Management, MBA, MBA Engineering and MBA Executive”. Furthermore, initially data was information was collected from 560 graduate and undergraduate students of two leading higher education institutes. However, 518 responses were deemed to be authentic and useful due to missing values, normality and skewness issues.

For this study, data was gathered by administering a structured questionnaire with close-ended questions to examine respondent’s preference, which consisted on five points rating (Likert) scale. Pilot testing was also done to avoid any validity issues of data. The collected data was thoroughly analyzed quantitatively by coding; afterwards (SPSS) statistical analysis software was used on final data of 518 respondents. The process of data analysis of said respondents was done in terms of descriptive statistics and average values of responses. Moreover, the questionnaire consisted of values, which were assigned as 1 denoting “Strongly Disagree”, and 5 denoting “Strongly Agree”.

Data analysis, results and discussion

4.1. Demographic profile of students

The demographic information of respondents have been presented in table 1, in which it is evident that 59.1% respondents were male; while, female comprised of 40.9% of the entire sample.

Table 1. Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>306</td>
<td>59.1</td>
</tr>
<tr>
<td>Female</td>
<td>212</td>
<td>40.9</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-20</td>
<td>122</td>
<td>23.6</td>
</tr>
<tr>
<td>21-25</td>
<td>359</td>
<td>69.3</td>
</tr>
<tr>
<td>26-30</td>
<td>23</td>
<td>4.40</td>
</tr>
<tr>
<td>31-Above</td>
<td>14</td>
<td>2.70</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BBA</td>
<td>349</td>
<td>67.4</td>
</tr>
<tr>
<td>MBA</td>
<td>116</td>
<td>22.4</td>
</tr>
<tr>
<td>EMBA</td>
<td>35</td>
<td>6.80</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>3.50</td>
</tr>
</tbody>
</table>
It can also be observed from table 1 that out of entire data set of 518 respondents, 69.3% of the respondents consisted of 21-25 years of age bracket; whereas, age bracket of 15-20 encompassed the respondent’s percentage i.e. 23.6%. Likewise, 4.40% respondents were between the age brackets of 26-30 years, and respondents having percentage of 2.70% consisted of age bracket i.e. 31 and above years.

Looking further at the results in table 1, it notable that the educational/ academic programs were divided into four categories i.e. BBA, MBA, EMBA, and MBA Eng. After data analysis, it has been revealed that Bachelors (BBA) programme achieved the highest percentage i.e. 67.4%; while, enrolment of students in Master (MBA) programme was 22.4%. Furthermore, the value of 10.3% was achieved by the Professional degree programmes, i.e. Executive MBA and MBA Engineering. Further, it is evident from table 1 that majority of respondents belonged to the category of 15-25 years of age i.e. 92.9%.

4.2. Preference of students pertaining to e-learning via laptop as oppose to traditional/ face to face learning against HES Quality Indicators

In order to investigate the student’s preference in context of learning via laptop or face to face format, eight higher education service (HES) quality indicators by Kwan and Ng (1999), were utilized using a 5-point likert scale i.e. “Course content, Facilities, Lecturer’s Concern for Students, Social Activities, Communication with University, Assessment, Counselling Services & People”. To examine average responses against HES quality indicators, data was gathered from students to compare preference of students on learning via laptop and face to face format so that an optimal solution could be devised (see table 2).

<table>
<thead>
<tr>
<th>Higher Education Service (HES) Quality Indicators</th>
<th>Face to Face</th>
<th>Laptop</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Course Content</td>
<td>3.76</td>
<td>4.03</td>
</tr>
<tr>
<td>2. Facilities</td>
<td>3.74</td>
<td>4.05</td>
</tr>
<tr>
<td>3. Lecturer’s Concern for Students</td>
<td>4.05</td>
<td>3.87</td>
</tr>
<tr>
<td>4. Social Activities</td>
<td>2.90</td>
<td>3.98</td>
</tr>
<tr>
<td>5. Communication With University</td>
<td>3.66</td>
<td>4.28</td>
</tr>
<tr>
<td>6. Assessment</td>
<td>3.53</td>
<td>4.12</td>
</tr>
<tr>
<td>7. Counselling Services</td>
<td>4.22</td>
<td>4.01</td>
</tr>
<tr>
<td>8. People</td>
<td>4.40</td>
<td>4.02</td>
</tr>
</tbody>
</table>

Table 2 exhibits the average responses across Kwan and Ng (1999) higher education service (HES) quality indicators, which clearly indicates inclination of students towards both approaches i.e. e-
learning through laptop as well as traditional/face to face learning. Hence, in e-learning context across HES quality indicators, majority of students preferred blended learning model in higher education, detail of results have been discussed in the following text.

**Course Content:** Course content, the first HES quality indicator, can be defined as the entire material and course curriculum provided for a course. A clear shift has been noticed from face to face learning method to device i.e. laptop for this indicator (see Table 2). Laptop has been chosen as the highly preferred device with an average of 4.03. Whereas, face to face method got second rank, as it gets the average of 3.76. Hence, initial results imply that students tend to feel convenient to access course material from their laptops rather than physically going to university.

**Facilities:** The second higher education service quality indicator i.e. facilities, is referred as academic as well as recreational facilities provided by institutes. This includes multiple components i.e. sports, computers, cafeteria, library, and availability of other resources. For this indicator, majority of students with an average of 4.05 preferred to obtain facilities through an ubiquitous device i.e. laptop. Face to face method is the second preferred method, having an average of 3.74. It is logical that access of facilities through device would appeal more to students where limitation of time and space does not actually exist, for instance, books can be accessed through digital library anywhere and anytime that promotes a creative learning environment.

**Lecturer’s Concern for Students:** The third HES quality indicator i.e. Lecturer’s concern for students, encompass the concept of teacher’s positive attitude and attachment towards students even after lecture to guide them regarding their personal and academic issues. In an entire world, teachers are considered as an imperative component for personality development of students. Table 2 highlights that first preference of students for this indicator falls towards face to face learning method rather than device, having an average of 4.05. Laptop came second with an average of 3.87. It implies that students want direct interaction with teachers when it comes to discussion or sharing of some event. Hence, proximity issues hamper students from friendly bonding with teachers.

**Social Activities:** Social activities have been defined by Kwan and Ng (1999) as the interactional channels of students with their fellows that play a significant role in social, communicational, and personality development of students. It includes multiple sources i.e. job fairs, club meetings & events, students competition events, or it could be a social networking platform through technology. First preference of students for this HES quality indicator is laptop with an average of 3.98. Face to face method got the second rank with an average of 2.90. It is rationale since technology has undeniably and profoundly expanded access to social activities in many ways regardless of time and space constraints.

**Communication with University:** The fifth HES quality indicator, i.e. communication with university, defines the communication mediums that have been preferred by students in terms of sharing their concerns with university management and teachers. Digital media advancement in
global era offers multiple communication channels which made laptop as the first preference of students with an average of 4.28. Second preference after laptop is face to face method, having an average of 3.66. The explanation, as discussed above, is that students tend to carry portable mobile device i.e. laptop, which facilitates them to contact the university anywhere/anytime by using mails, social networking chats and platforms.

**Assessment:** Kwan and Ng (1999) defined assessment as a quality indicator which evaluate and examine the student’s performance through numerous assessment schemes (i.e. exam, quizzes, and assignments). Table 2 indicates that majority of students preferred laptop for their assessment purpose with an average of 4.12. Face to face method is student’s second preferred method for this HES quality indicator, having an average of 3.53. Reasons are manifold as majority of students are equipped with internet facilities due to advanced technology, which enhanced their usage ratio in terms of mobile devices. Therefore, rather than going in person, students tend to find laptop convenient, when undertaking the assessment.

**Counselling Services:** The next indicator i.e. Counselling services, encompass the concept of availability of advisors and teachers so that students can take guidance from them in case of academic and personal problems. Majority of students have chosen face to face method with an average of 4.22. However, close gap exist between average values of said methods, as an average of 4.01 students preferred laptop for this indicator. It implies that students tend to feel more comfortable in direct discussion with their advisors but the minor gap between average values exhibit the inclination of students towards e-learning through laptop.

**People:** People, the last HES quality indicator, is related to the opportunity for the students to acquire and enhance interpersonal skills by meeting and making new friends. For this indicator, student’s first preference came out to be face to face method, having an average of 4.40. However, second preferred method is communication through device i.e. laptop, having an average of 4.02. Thus, it clearly implies that students want blend of traditional method in an e-learning format as people is turned out to be the third indicator for which students opted for face to face method. Thus, majority of students prefer direct interaction in this case, since meeting new people is considered as a personal experience.

By considering results from statistical average responses of 518 students, table 2 highlights that complete face to face/ traditional learning does not prove to be a holistic learning method for students while examining these results across higher education service quality indicators by Kwan and Ng (1999). Results revealed that students have strong inclination towards e-learning through laptop for five out of eight HES quality indicators i.e. ‘Course Content’, ‘Facilities’ ‘Social Activities’, ‘Communication with University’, and ‘Assessment’. While, students have chosen face to face/ traditional method for remaining three HES quality indicators i.e. ‘Lecturer’s Concern for Students’, ‘Counselling Services’, and ‘People’. Based on overall results, it is logical to infer that students are completely inclined towards e-learning approach through laptop while its
comparison with face to face method. Thus, blend of both approaches seems be a feasible solution for better understanding and learning, which would ultimately lead towards enhanced cognitive abilities.

**Conclusion**

Over the past decades, number of online courses has been increased by institutions; consequently, more online courses have been favoured by a growing number of students over face to face courses. This is, mainly, because of the flexibility that is in-built in online courses, the convenience, no time and space limitations, and a host of other factors. A number of past researches are consistent with these said findings that have investigated face to face versus online education (Brown and Park 2016, Pai 2013, Neuhauser 2010).

Results of present research indicates that students, for most services, are inclined towards switching to e-learning, and when it comes to a preferred method for e-learning students do not want it merely on device rather they prefer a blended learning environment. By utilizing eight higher education service (HES) quality indicators (Kwan and Ng 1999), the average findings pertaining to average student device preference i.e. laptop vs. face to face learning, revealed that students are completely willing to switch to laptop over traditional learning for 5 out of 8 services. Reason could be the manifold i.e. bigger interface, larger screen size, and ubiquitous nature, which made laptop as the first preference for academic as well as social activities. Furthermore, to enhance student’s satisfaction and retention rate in context of e-learning, blended learning environment i.e. mix of face to face and laptop based interaction, should be provided by universities.

These findings suggest that universities and e-learning offering institutions should address their student’s desire for more technology-oriented educational platforms, and greater efforts should be exerted to make sure smooth utilization of these technologies. However, there is a need for additional research to examine student’s preference in context of other mobile devices i.e. tablet, mobile phone etc. as this research is still infancy in developing countries.
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