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Perception Towards Online Learning and Social Media in Education Among Undergraduate Students

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Abstract

Online learning is an effective and efficient way of learning. It is also a more cost-effective way of delivering instructions and knowledge. Although many studies have shown the effectiveness of online learning and blended learning (online and traditional approach to learning), only few studies have shown the value and perception of online leaning particularly during a period where there is sudden transition to online learning from traditional approaches. This study was conducted to assess the value and perception towards online learning and social media among undergraduates during a pandemic. A cross-sectional study was conducted from May 2020 to June 2020 in our College which is Melaka Manipal Medical College Malaysia. Purposive sampling method was used to select students for this study and they were asked to respond to a validated online questionnaire which involved multiple choice questions and questions regarding perception, preference and frequency of usage of technology which was assessed on a Likert scale. The analysis included frequency tables, percentages, standard deviation, unpaired T test, ANOVA and Pearson's correlation test. Out of the 186 students who participated, 31.7% preferred classroom teaching (traditional approach), 3.8% of the students preferred online only and 64.5% of them preferred blended learning (online and traditional approach). Based on the Pearson's correlation test, there was a moderate positive correlation (0.671) which is significant (p-value <0.001) which shows that when there is an increase in students' preference, the frequency of usage of technology and social media also increases. Nevertheless, technology and social media has become a major part in the present generation's day to day lives, hence involving e-learning into education would do better than harm especially during this COVID-19 pandemic. Just because the world has been put on hold temporarily, teaching and learning should not come to a halt and as e-learning has proven its net worth it should be the mode of disseminating knowledge among undergraduates now and in the future.

Keywords

Perception, Online Learning, Undergraduate Students

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1. Introduction

E-learning means computer (or mobile media) access to a learning environment via the Internet, unlimited by time or place, typically not in the classroom. The rapid development of e-learning environments like Learning Management Systems (LMS) that support and enable effective e-learning as part of the education process has seen many changes being made to the methodology and techniques of teaching and learning [1], with e-learning becoming ever more important in educational institutions and emerging as a new paradigm

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in modern education [2].

Today's students are digital natives (individuals born around or after 1985) who have been found to view more content, academic or not, on the Web than on any other medium [3]. As a generation of hyper-connected learners, they consider Web-based technologies integral to the information gathering process [4] with a particular preference for user generated content [5].

The use of web based online social networking systems have empowered organizations, consumers, establishments, and a lot more to communicate much more viably and progressively with hundreds, even thousands of others around the globe about a particular topic, product, or issue anytime [6]. The new age invests more energy on social network in their day by day life for social purposes. Social network media are believed to help a scope of applications which show characteristics related with educational technologies as of now which is in use at college level, for example, such as communication, participation, interactivity and collaboration [7]. Social media networking systems do not only make it easy for companies to communicate with their consumers, but also makes it easier for tertiary institutions to communicate related course work to their students, to encourage discussion between and among students, and to address administrative issues [8, 9]. Shen, Laffey, Lin, and Huang (2006, p. 270) further show that internet learning by means of methods for different social media networking frameworks have become a typical educational arrangement to use around the world by both tertiary institutions and their students, due to its flexibility of time and place. Web–based social networking organizing frameworks have the ability to empower lecturers and students to work together and share data whenever convenient to them and from wherever in the world [9]

With the remarkable development of information and communication technologies, higher-educational institutions have widely adopted technology to improve the effectiveness of learning [10]. Learning management systems are the most popular technology for facilitating online learning and are the most commonly used technology in education [11]. An American study [12] revealed that 99% of educational institutions in the United States have adopted LMS. The value of the LMS marketplace is more than $3 billion per year, and is expected to grow by 24% between 2016 and 2020 [13]. The field of education in academic settings in Saudi Arabia has also been influenced by this evolution [14]. The market of e-learning in Saudi Arabia is projected to be $273 billion by 2023, which represents the largest market in the Middle East [15].

Despite the massive adoption and perceived advantages of LMS, this success does not necessarily indicate student uptake of such systems [16]. The effectiveness of e-learning systems ultimately relies on student use [17], and the benefits of these systems are minimized if students do not use them [12, 19]. Previous literature in developing countries [20, 21, 22] and Saudi Arabia in particular [18, 23, 24, 25] found that the rich features of LMS are still not widespread. Research has demonstrated that only some LMS features are utilized, and students use LMS, in most cases, for only storing and downloading documents. Thus, this calls for understanding and examining the factors that affect student's acceptance and use of LMS. [26, 27, 28, 11]

Higher education has seen a rapid growth of online learning with an increasing number of universities offering both online courses and fully online programs [29-36]. As more and more schools develop online programs, it is important to know how this change impacts higher education. Change for the sake of change is not necessarily progress. As such, we need to carefully investigate the impacts of moving away from traditional brick and mortar institutions towards online education.

In the last two decades the research has focused on various critical (success) factors of e-learning (as part of BL or fully online learning), placing them in three main groups:

i) Student factors–prior experience/knowledge of IT (Information Technology) [37], self-efficacy, self-motivation, learning style and responsibility for one's own learning pace [46, 38, 39];

ii) Teacher factors–characteristics [40], ICT (Information Communications Technology) competencies [41], teaching style [44], knowledge, facilitation, feedback and course structure [39], online instruction [38], information quality and service delivery quality [45, 46]; and

iii) Technology acceptance and technical support–ease of use, ease of access, user-friendly interface, technical support [45, 38, 42, 43].

Realizing what catches the eyes of students and understanding the variables that influence student's achievement in e–learning condition can support the academic management and instructors create systems to encourage students to adopt this learning environment. Therefore, the significance of this research lies on exploring the value and perception towards online learning and social media in education, as well as student's preferences towards different types and methods of online learning among undergraduate students in Melaka Manipal Medical College.

Successful learning requires that students be motivated to achieve the desired learning goals [47]. However, not all students can develop an effective path that is beneficial to

learning on their own [48]. The increasing popularity and number of online programs and course in higher education require continued attention to the design of instructional environments to enhance students' learning [49]. It is therefore timely and prudent to seek understanding on how students think and feel about this medium of teaching and learning. The main purpose of this research is to understand the values and perception towards online learning and social media in education among undergraduate students in Melaka–Manipal Medical College. To be able to answer the purpose of this research, a few research objectives were formed.

1. To study the general perception of students of Melaka – Manipal Medical College towards online learning.
2. To find the student's preference of online learning setting compared to a face to face learning.
3. To find out the frequency of use of different modes of technology by the student population of Melaka – Manipal Medical College as a whole.

2. Methodology

2.1. Study Design, Setting, Time and Population

A cross-sectional study was performed from May 2020 to June 2020 in our institution, Melaka Manipal Medical College (MMMC), Melaka, Malaysia. Our College is a private institution which consists of two campuses; one based in Muar, Johor and the other based in Malacca. The institution offers 3 courses in total. The Muar campus offers Bachelor of Medicine and Surgery (MBBS) semester 6 and 7, while the Malacca campus offers Bachelor of Dental Surgery (BDS) years 3, 4 and 5, Foundation in Science (FIS) and MBBS semester 8, 9 and 10. For this study, undergraduate students from MBBS semesters 6, 7, 8, 9 and BDS years 3, 4 and 5 are chosen to determine the perceptions of online learning and social media in education.

2.2. Sample Size

Based on the previously conducted research on Assessing the Value of Online Learning and Social Media in Pharmacy Education which was done among student pharmacists in the University of Tennessee Health Science Center College of Pharmacy, they found that 35% of the students believed that online courses are equal to live classroom lectures in regards to educational value. [50] By using the application software "Epi Info" version 7 with our study population (N) being 910, with the expected frequency of 35% and precision error of 7% we obtained a sample size of 149 for a confidence level of 95%.

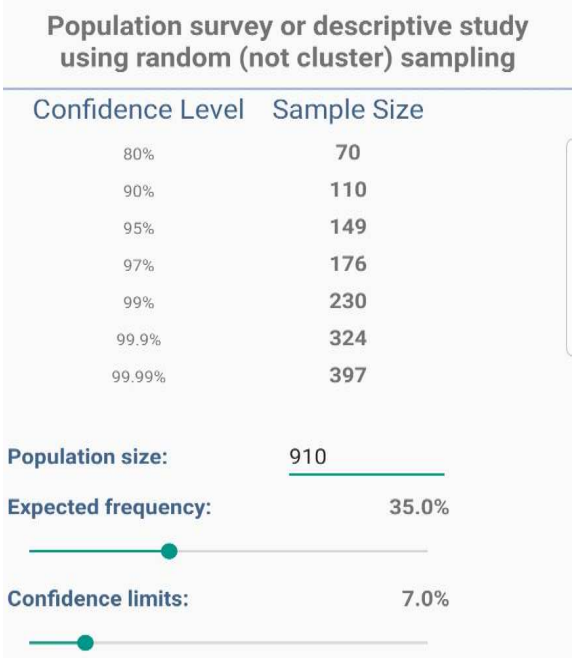

Figure 1. Data processed from Epi Info software to obtain the sample size.

After the calculation, the result was a minimum sample size of 149. Taking a non-response rate of 20% the final sample size (n_{final}) was calculated as follows:

$$n_{final} = \frac{n_{calculated}}{(1-non\ response\%)} = \frac{149}{(1-0.2)} = 186$$

Therefore, 186 was considered as the final sample size.

2.3. Sampling

A purposive sampling was carried out to select students enrolled in the MBBS and BDS programs for this study. The students were selected with an inclusion criterion where in all of them must be medical and dental students in the Melaka Manipal college, has voluntarily agreed to participate in this study and completed the given questionnaire including the consent form. Incomplete questionnaires were taken as the exclusion criteria along with the students who didn't provide consent to participate in the study.

2.4. Data Collection

The questionnaire developed was in six parts. The first part was the demographic data in which the age, gender, nationality, course and the specific semester or year in which they currently study in and ethnicity was mentioned. The second part of the study was 11 questions to assess the student's preference towards technology and social networking in education. These multiple-choice questions were on obtained from a previous research article and modified to fit the study parameters [50]

The third part and fourth part were 11 questions each obtained from the earlier article [50] and was used to assess

the student's perception towards different modes of technology and the frequency of use of each mode. The students were asked to respond to both the third and fourth parts questionnaire on a five-point Likert scale-(5- extremely agree, 4-somewhat agree, 3- neutral, 2-somewhat disagree, 1-extremely disagree).

The fifth part was 2 questions used to measure the student's perception on the appropriateness of connecting with the professors on social media [50]. Here as well, the students answered using the same five-point Likert scale-(5-extremely agree, 4-somewhat agree, 3- neutral, 2-somewhat disagree, 1-extremely disagree).

The sixth part was 6 questions designed to assess the perception on online learning [51]. The students responded using a seven-point Likert scale (7-strongly agree, 6-moderately agree, 5-slightly satisfied, 4-Don't know/no opinion, 3-highly dissatisfied, 2-moderaately dissatisfied, 1-extremely dissatisfied).

The questionnaires were then distributed among students using google forms.

The age, gender and the stream (MBBS OR BDS) were taken as independent variables while the preference and frequency of use were the dependent variables in the study.

2.5. Data Processing and Data Analysis

Data was fed into Microsoft excel and compiled. Epi info V7.0 was used to statistically analyze the data. For quantitative data, preference for technology and social networking, perception on online learning units and the frequency of usage of technology, the range, mean along with the standard deviation and median along with the interquartile range was calculated. For qualitative data (gender, course, nationality, semester and ethnicity) frequency and percentage was calculated.

For the questions related to preference each question was graded with a scale from 1 to 5. The total individual score for each participant was obtained where in the maximum score was 50 and the minimum was 10. For the questions about the perception of students towards online learning was graded with a scale from 1 to 7 and the total individual score for each participant was obtained. The maximum score was 42 while the minimum was 6. For the questions which were asked regarding the frequency of usage of technology and social media, similarly to the preference questions, each question was graded with a scale from 1 to 5, where the total score for each participant was obtained, maximum score being 50 and the minimum was 10. The associations between the sociodemographic details and the preference and perception towards online learning are assessed by the unpaired T tests and ANOVA test whereas the association between the preference and the frequency of usage of technology and social media was assessed by Pearson's correlation test.

Table 1. Statistical tests for assessing the relationship between various independent variable and dependent variable.

Independent variable	Dependent variable	Statistical test
Gender	Preference	Unpaired T test
Nationality	Preference	Unpaired T test
Course	Preference	Unpaired T test
Ethnicity	Preference	ANOVA
Independent variable	Dependent variable	Statistical test
Gender	Perception	Unpaired T test
Nationality	Perception	Unpaired T test
Course	Perception	Unpaired T test
Ethnicity	Perception	ANOVA
Independent variable	Dependent variable	Statistical test
Preference	Frequency	Correlation Test

2.6. Ethical Consideration

The participation in the research study was completely voluntary and the informed consent forms were collected from each participant. While obtaining their consent to participate in the study, they were assured that their confidentiality was protected. The research was approved by the Research Ethics Committee, Faculty of Medicine, Melaka Manipal Medical College, Malaysia.

3. Results

Table 2. Sociodemographic characteristics of the student participants in the study (n=186).

VARIABLES	FREQUENCY (%)
AGE:	
<22	30 (16.1%)
22-25	155 (83.3%)
>25	1 (0.5%)
Mean (SD)	22.6 (1.2)
Minimum - Maximum	19 – 26
GENDER:	
Male	57 (30.6%)
Female	129 (69.4%)
COURSE:	
MBBS	126 (67.7%)
BDS	60 (32.3%)
NATIONALITY:	
Malaysian Student	158 (84.9%)
International Student	28 (15.1%)
SEMESTER/YEAR	
MBBS (Semester 6)	54 (29%)
MBBS (Semester 7)	33 (17.7%)
MBBS (Semester 8)	20 (10.8%)
MBBS (Semester 9)	19 (10.2%)
BDS (Year 3)	18 (9.7%)
BDS (Year 4)	23 (12.4%)
BDS (Year 5)	19 (10.2%)
ETHNICITY:	
Malay	28 (15.1%)
Indian	78 (41.9%)
Chinese	41 (22%)
Others	39 (21%)

A total number of 186 responses were received from the

online questionnaire, giving a response rate of 100%. From the participants who responded, 155 from the total respondents were in the age group of 22-25 years, which gives a mean age of 23.6. Most of the responses were by females (69.4%), which left a total of 57 responses by males (30.6%). In terms of Nationality of the participants, the highest response was from Malaysians (84.9%) and the remaining were from International students (15.1%). When evaluating the ethnicity, majority of the responses were received from the Indian community (41.9%), followed by the Chinese (22.%), others (21%) and least from the Malay community (15.1%). A total of 126 participants were MBBS students (67.74%) and the rest was 60 students who were from BDS (32.26%). In addition, response rate from the different years and semesters of the two individual courses were calculated, MBBS Semester 6 (29%), MBBS Semester 7 (17.7%), BDS Year 4 (12.4%), MBBS Semester 8 (10.8%), BDS Year 5 (10.2%), MBBS Semester 9 (10.2%) and the least responses were by BDS Year 3 (9.7%).

Table 3. Students Preference for Technology and Social Networking.

VARIABLES	FREQUENCY
Were you enrolled in any online courses during your undergraduate program before Movement Control Order (MCO)?	
Yes	59 (31.7%)
No	127 (68.3%)
If you were enrolled in any online courses during your undergraduate curriculum, were any of them focused specifically on science (i.e., organic chemistry, biology, immunology, etc.)?	
Yes	65 (34.9%)
No	121 (65.1%)
Are you currently enrolled in any online courses in your undergraduate program?	
Yes	157 (84.4%)
No	29 (15.6%)
Which of the following modes do you prefer for your lectures?	
Live lecture	101 (54.3%)
Recorded lecture	43 (23.1%)
No preference	42 (22.6%)
Do you believe that online classes are equal to live classroom in regards to educational value?	
Yes	29 (15.6%)
No	144 (77.4%)
Not sure	13 (7%)
Which of the following methods is your preferred method for testing within the curriculum?	
Integrated examinations	87 (46.8%)
Traditional examinations	72 (38.7%)
Neither	27 (14.5%)
Which of the following class structures do you prefer within the curriculum?	
Online only	7 (3.8%)
Classroom only	59 (31.7%)
Blended classroom	120 (64.5%)
Which of the following have you used for online learning during Movement Control Order (MCO)? Select all that apply. Can be more than one.	
Smart phone	149 (80.1%)
Stationary/handheld gaming device	5 (2.7%)
Desktop computer	17 (9.1%)
Laptop computer	168 (90.3%)
Ipad or Tablet	68 (36.6%)
Which of the following have you used for at least one course/academic activity in the past year? Select all that apply. Can be more than one.	
Smart phone	159 (85.5%)
Stationary/handheld gaming device	6 (3.2%)
Desktop computer	30 (16.1%)
Laptop computer	167 (89.8%)
Ipad or Tablet	66 (35.5)
How have you used social networking websites (i.e., Facebook, Myspace, Twitter, LinkedIn) to help with learning in your curriculum?	
Communicate with classmates about questions pertaining to course content	90 (48.4%)
Work on group assignments	41 (21.5%)
Have not used social networking for this	56 (30.1%)
Approximately what percentage of your course classmates are you connected with via social networking websites (i.e., Facebook, Myspace, Twitter, LinkedIn)?	
0 - 25%	46 (24.7%)
26 - 50%	49 (26.3%)
56 -75%	32 (17.2%)
76 - 100%	59 (31.7%)

Table 3 highlights the part of the questionnaire where the student's preference for technology and social networking was evaluated by a total of eleven questions. For the first question which is shown in the above table, majority answered 'No' (68.3%). For the second question, most of the responses were 'No' (65.1%). The responses for the rest of the questions as given in the above table in order are as follows, question three; majority answered 'Yes' (84.4%), question four; majority of the students preferred live lectures (54.3%) followed by, recorded lectures (23.1%) and rest of them had no preference (22.6%). Question five; majority answered 'No' (77.4%) and 7% of them were 'Not Sure'. Question six; most of the students answered 'Traditional Examinations' (38.7%) followed by 'Integrated Examinations' (46.8%) and 14.5% preferred 'Neither'. Question seven; most of them preferred 'Blended Classroom' (64.5%) followed by 'Classroom Only' (31.7%) and 3.8% of the students preferred 'Online Only'. Question eight, where the students were given more than one answer to choose from, highest preference was for 'Laptop Computer' which was 90.3% followed by, 'Smart Phone' (80.1%), 'I pad or Tablet' (36.6%), 'Desktop Computer' (9.1%) and the least being for 'Stationary/handheld gaming device' (2.7%). Question nine, where the students were allowed to choose more than one option, majority of them preferred using the 'Laptop Computer' (89.8%), followed by, 'Smart Phone' (85.5%), 'I pad or Tablet' (35.5%), 'Desktop Computer' (16.1%), and showed least preference for using 'Stationary/handheld gaming Device' which was 3.2%. Question ten; majority of the students preferred to 'Communicate with classmates about questions pertaining to course content' (48.4%), 30.1% preferred to 'Have not used

social networking for this' and least of the students preferred to 'Work on group assignments' (21.5%). Question eleven; most of the students answered '76-100%' (31.7%), followed by '26-50%' (26.3%), '0-25%' (24.7%) and least being '56-75%' (17.2%).

Table 4. Students Preference of technology for Academic Success.

Variable	Extremely Agree N(%)	Somewhat Agree N(%)	Neutral N(%)	Somewhat Disagree N(%)	Extremely Disagree N(%)
Paper Textbooks	99 (53.2%)	54 (29.0%)	21 (11.3%)	8 (4.3%)	4 (2.2%)
E - Books	13 (7.0%)	66 (35.5%)	53 (28.5%)	41 (22.0%)	13 (7.0%)
Smart phones	15 (8.1%)	88 (47.3%)	59 (31.7%)	16 (8.6%)	8 (4.3%)
Tablets	27 (14.5%)	85 (45.7%)	59 (31.7%)	11 (5.9%)	4 (2.2%)
Text Message	5 (2.7%)	51 (27.4%)	70 (37.6%)	44 (23.7%)	16 (8.6%)
E - Mail	3 (1.6%)	53 (28.5%)	84 (45.2%)	32 (17.2%)	14 (7.5%)
Blogs	2 (1.1%)	24 (12.9%)	73 (39.2%)	61 (32.8%)	26 (14.0%)
Social Networking	8 (4.3%)	57 (30.6%)	78 (41.9%)	33 (17.7%)	10 (5.4%)
Library websites	18 (9.7%)	69 (37.1%)	83 (44.6%)	14 (7.5%)	2 (1.1%)
Online Platforms	19 (10.2%)	93 (50.0%)	55 (29.6%)	12 (6.5%)	7 (3.8%)
Free available course content	58 (31.2%)	78 (41.9%)	44 (23.7%)	4 (2.2%)	2 (1.1%)

Table 4 indicates the student's level of agreement to preference of various technology for academic reasons. Paper textbooks are the most preferred technology for academic success with 53.2%, while blogs are the least preferred technology with 1.1%. Out of 186 students, 11.3% and 39.2% remained neutral when it came to choosing paper textbooks and blogs respectively, and the remaining 2.2% and 14% of the students extremely disagreed with paper textbooks and blogs as a preferred technology for academic success. The next preferred technology is freely available course content with 31.2% of the students extremely agreeing, while 23.7% and 1.1% remained neutral and extremely disagreed respectively. Apart from this, 14.5% of the students extremely agreed to tablets being a preferred technology for academic success, while 31.7% and 2.2% remained neutral and extremely disagreed respectively. Data collected from students who extremely agreed to online platforms and library websites came close with a result of 10.2% and 9.7% respectively, while 29.6% and 44.6% of the students remained neutral and 3.8% and 1.1% extremely disagreed each respectively. Smart phones had 8.1% of the students who extremely agreed, 4.3% who extremely disagreed and 31.7% who remained neutral. As for e-books, the percentage of students who extremely agreed and extremely disagreed are the same, 7%, whereas 28.5% of the students remained neutral. Next, 4.3% and 2.7% of the students extremely agreed to social networking and text messaging being the preferred technology while 5.4% and 8.6% extremely disagreed and 41.9% and 37.6% remained neutral each respectively. Finally, with 1.6% of the students extremely agreeing, 7.5% extremely disagreeing and 45.2% that remained neutral, email is the next least preferred technology for academic success to blogs

Table 5. Frequency of usage of Technology.

Variable	Never N(%)	Rarely N(%)	Sometimes N(%)	Often N(%)	Always N(%)
Paper Textbooks	2 (1.1%)	13 (7.0%)	23 (12.4%)	71 (38.2%)	77 (41.4%)
E - Books	8 (4.3%)	30 (16.1%)	60 (32.3%)	66 (35.5%)	22 (11.8%)
Smart phones	2 (1.1%)	10 (5.4%)	45 (24.2%)	76 (40.9%)	53 (28.5%)
Tablets	42 (22.6%)	31 (16.7%)	37 (19.9%)	51 (27.4%)	25 (13.4%)
Text Message	36 (19.4%)	38 (20.4%)	60 (32.3%)	34 (18.3%)	18 (9.7%)
E - Mail	30 (16.1%)	54 (29.0%)	67 (36.0%)	30 (16.1%)	5 (2.7%)
Blogs	93 (50.0%)	53 (28.5%)	34 (18.3%)	5 (2.7%)	1 (0.5%)
Social Networking	32 (17.2%)	45 (24.2%)	47 (25.3%)	46 (24.7%)	16 (8.6%)
Library websites	32 (17.2%)	68 (36.6%)	63 (33.9%)	19 (10.2%)	4 (2.2%)
Online Platforms	7 (3.8%)	28 (15.1%)	50 (26.9%)	73 (39.2%)	28 (15.1%)
Free available course content	16 (8.6%)	27 (14.5%)	66 (35.5%)	50 (26.9%)	27 (14.5%)

Table 5 shows the data collected for frequency of usage of technology by students in MMMC for academic purposes. With a total number of participants of 186, paper textbook has the highest frequency of usage with 41.4% and blogs has the lowest frequency of usage with 0.5%. In addition, the results 1.1% and 50% of students who never use paper textbooks and blogs respectively proves the previous statement. The next highest mode of technology used by students is smart phones with 28.5%, while 1.1% of them never use it. Frequency of usage of online platforms, freely available course content and tablets came close to one another with 15.1%, 14.5% and 13.4% each respectively. Whereas, 3.8%, 8.6% and 22.6% of the students responded that they never use these modes of technology each

respectively for academic purposes. Apart from this, 11.8% of the students always use e-books while 4.3% of them never use it. Text messaging has 9.7% of students who always use this mode of technology for academic purpose while 19.4% of them disagreed and chose 'never'. Furthermore, the frequency of usage of social networking is 8.6% of students, who always uses it while 17.2% of them never. Finally, emails and library websites have a close frequency of usage with 2.7% and 2.2% of the students who always use them for academic reasons while 16.1% and 17.2% of them never use these modes of technology.

Table 6. Appropriateness to connect with Professor on Social Networking.

Variable	Strongly Agree N(%)	Agree N(%)	Neutral N(%)	Disagree N(%)	Strongly Disagree N(%)
Academic Reason	49 (26.3%)	93 (50.0%)	34 (18.3%)	8 (4.3%)	2 (1.1%)
Personal Reason	15 (8.1%)	35 (18.8%)	84 (45.2%)	42 (22.6%)	10 (5.4%)

Table 6 shows the data for the appropriateness to connect with professors on social network. Out of a total of 186 participants who took part in the questionnaire, majority of the students with 26.3% and 50%, strongly agreed and agreed respectively to the appropriateness to connect with the professors on social network for academic reasons. Where else, 18.3% of the students neither agreed nor disagreed hence remained neutral to this fact. The remaining 4.3% and 1.1% of the students disagreed and strongly disagreed respectively. On the other hand, majority of the participants remained neutral to the fact about the appropriateness to connect with professors on social network for personal reasons with a result of 45.2%. However, 8.1% and 18.8% of the students strongly agreed and agreed respectively. Finally, the remaining 22.6% and 5.4% of the students disagreed and strongly disagreed to this fact.

Table 7. Perception of online Learning.

Survey Question	Extremely dissatisfied N(%)	Moderately dissatisfied N(%)	Slightly dissatisfied N(%)	Don't know/No opinion N(%)	Slightly satisfied N(%)	Moderately satisfied N(%)	Strongly satisfied N(%)
Overall satisfaction with online learning in your course	31 (16.7)	11 (5.9)	49 (26.3)	18 (9.7)	41 (22.0)	31 (16.7)	5 (2.7)
Using online was an effective way to learn about the assigned topics	25 (13.4)	17 (9.1)	50 (26.9)	21 (11.3)	40 (21.5)	25 (13.4)	8 (4.3)
Using online learning was fun	29 (15.6)	15 (8.1)	36 (19.4)	32 (17.2)	38 (20.4)	31 (16.7)	5 (2.7)
An online learning should be used in this course in the future	43 (23.1)	12 (6.5)	34 (18.3)	32 (17.2)	29 (15.6)	28 (15.1)	8 (4.3)
Completing the online course did not take more time and effort than it was worth	22 (11.8)	12 (6.5)	30 (16.1)	54 (29.0)	28 (15.1)	29 (15.6)	11 (5.9)
Questions asked in the online course were not too difficult	18 (9.7)	13 (7.0)	35 (18.8)	54 (29.0)	33 (17.7)	25 (13.4)	8 (4.3)

Table 7 shows the data collected regarding the perception of students towards online learning. Only 2.7% of the students showed extreme satisfaction with online learning in their course while 16.7% and 22% of them showed moderate and slight satisfaction respectively. But 16.7% of the people showed extreme dissatisfaction toward online learning while 5.9% and 26.3% showed moderate and slight dissatisfaction. From the total 41.4% showed varying degree of satisfaction while 48.9% showed varying degree of dissatisfaction towards online learning. 9.7% was indifferent towards it.

The data also shows that while 8.3% of the students showed extreme satisfaction about using online was an effective way to learn about assigned topics 13.4% showed extreme dissatisfaction. 49.9% of the students showed varying degree of dissatisfaction towards this statement while only 39.2% showed satisfaction showing that a slightly higher number of students don't think that online learning is an effective way to learn.

2.7% strongly agreed that online learning was fun while 15.6% showed extreme dissatisfaction towards this statement. But in general, 39.8% were satisfied with online learning courses as a fun way of learning while 43.1% were dissatisfied in varying ranges about this, showing that there is not much of a difference in the student's perception about this statement.

4.3% of the sample agreed that an online learning should be used in this course in the future while 23.1% showed extreme dissatisfaction towards this. 15.1% and 15.6% showed moderate and slight satisfaction towards this statement while 6.5% and 18.3% showed moderate and slight dissatisfaction towards this statement.

5.9% and 4.3% showed extreme satisfaction towards the statements that completing the online course did not take more time and effort than it was worth, and that Questions asked in the online course were not too difficult while 11.8% and 9.7% showed extreme dissatisfaction respectively. 15.6%

and 15.1% showed moderate and slight satisfaction towards the former statement while 6.5% and 16.1% shows moderate and slight dissatisfaction towards it. So, 36.6% showed varying degree of satisfaction while 34.4% showed dissatisfaction towards this statement. Regarding the latter statement 13.4% and 17.7% showed moderate and slight satisfaction while 7.0% and 18.8% shows varying ranges of dissatisfaction.

Table 8. Association between socio demographic details and preference of technology and social networking for academic success.

Variable	Preference mean (SD)	Mean Difference (95% CI)	P Value
Gender			
female	33.2 (5.5)	1.0 (-0.7, 2.7)	0.235
male	32.1 (5.4)		
Nationality			
International	33.9 (3.2)	1.2 (-1.0, 3.4)	0.285
Malaysian	32.7 (5.8)		
Ethnicity			
Chinese	33.5 (4.5)		0.117
Indian	31.9 (6.5)		
Malay	32.4 (4.7)		
Others	34.3 (4.3)		

Table 8 shows the association between socio-demographic details and the preference for technology and social networking for academic success. The mean preference for females is 33.2 with a standard deviation of 5.5, which is slightly higher than the mean preference for males with a score of 32.1 and a standard deviation of 5.4. The mean difference is 1.0 with 95% confidence interval (CI) of -0.7 to 2.7. The p-value obtained was 0.235 which shows that there is no significant association between gender and preference for technology and social networking for academic success.

When considering the Nationality, there was a mean preference of 33.9 with a standard deviation of 3.2 for the international students, which was slightly higher than the Malaysian students which had a mean and standard deviation of 32.7 and 5.8 respectively. The mean difference was 1.2 with 95% CI of -1.0 to 3.4. The p-value obtained was 0.285, which shows no significant association between the Nationality and the preference for technology and social networking for academic success.

Lastly the next variable which was assessed was the ethnicity. The mean scores with the standard deviations (SD) for each ethnicity is as follows, Chinese; 33.5 (SD=4.5), Indian; 31.9 (SD=6.5), Malay; 32.4 (SD=4.7) and others; 34.3 (SD=4.3). The p-value which was obtained was 0.117 which shows that there is no significant association between Ethnicity and preference for technology and social networking for academic success.

Table 9. Association between sociodemographic details and the perception of students towards online learning.

Variable	Perception mean(SD)	Mean Difference (95% CI)	P Value
Gender			
female	22.5 (8.0)	-0.3 (-2.9, 2.3)	0.815
male	22.8 (8.6)		
Nationality			
International	21.9 (8.1)	-0.8 (-4.2, 2.5)	0.615
Malaysian	22.7 (8.2)		
Ethnicity			
Chinese	24.3 (7.6)		0.441
Indian	21.8 (7.9)		
Malay	22.0 (6.7)		
Others	22.8 (10.1)		

Table 9 shows the association between the sociodemographic details and the perception of students towards online learning. The mean perception for females is 22.5 (SD=8.0) which is slightly lower than males with a mean of 22.8 (8.6). A mean difference of -0.3 with 95% CI of -2.9 to 2.3 was obtained. The p-value was 0.815 which shows that there is no significant association between gender and the perception of students towards online learning.

When considering the Nationality, there was a mean perception of 22.7 (SD=8.2) for Malaysian students which is slightly higher than International students which is a score of 21.9 (SD=8.1). The mean difference was -0.8 with 95% CI of -4.2 to 2.5. The p-value obtained was 0.615 which shows that there is no significant association between Nationality and the perception of students towards online learning.

Lastly, the mean perception for the different ethnicities are as follows, Chinese; 24.3 (SD=7.6), Indian; 21.8 (SD=7.9), Malay; 22.0 (SD=6.7), others; 22.8 (SD=10.1). The p-value which was obtained was 0.441 which shows that there is no significant association between the ethnicity and the perception of students towards online learning.

Table 10. Correlation between the preference and frequency of use.

	Frequency of use	
	Correlation coefficient	P value
Preference	0.671	<0.001

Table 10 shows the correlation between the student's preference of technology for academic success and the frequency of usage of technology. Based on the correlation coefficient obtained which is 0.671, there is a moderate positive correlation which is significant between the student's preference and the frequency of usage of technology. When there is an increase in student's preference, the frequency of usage also increases. In addition, this association is statistically significant as the p value is less than 0.001.

4. Discussion

The study we conducted was a cross – sectional study among

undergraduate students of Melaka – Manipal Medical College in Malaysia to find out the Perception Towards Online Learning and Social Media in Education Among Undergraduate Students. This research was done to observe and study the perceptions among students about online learning; especially since the students are the fundamental recipients of this type of learning. The perceptions were observed in regards to how the students can comprehend online learning and also how they think it could assist them in acquiring their educational qualifications. The study also aims to find out the frequency of use of different modes of technology of the student population whilst they participate in the online learning. In addition to that, this study is also done to find out the student's preference for the online learning setting compared to face to face learning. Online learning means an education which takes place via the Internet, unlimited by time or place, typically not in the classroom. The rapid development of online learning environments like Learning Management Systems (LMS) that support and enable effective online learning as part of the education process has seen many changes being made to the methodology and techniques of teaching and learning [1], with online learning becoming ever more important in educational institutions and emerging as a new paradigm in modern education [2]. Based on our study; it shows that almost half of the students are not satisfied with online learning with percentage of 48.9% and almost half of the student are satisfied with online learning in their course with overall percentage of 41.4%. Apart from that, almost half of the student disagrees (49.4%) using online learning was an effective way to learn about the assigned topics and almost half of the student agrees (39.2%) as well. Other than that, almost half of the students didn't want to use online learning in this course in the future with overall percentage of 47.9% and more than one third of the students are satisfied with using online learning in the future. Based on a study conducted amongst pharmacy students in Tennessee, America its seen around 59% of the students did not agree that the online classes could be equal in comparison to the live classroom lectures when it comes to the educational value attained, with the majority of students (61%) preferring a blended classroom structure.[50] In comparison to this study, another study was done in Kuala Lumpur, Malaysia among undergraduate students whereby its seen that the students at the particular institution preferred using online learning tools like the dictionary, online word processors and also file storage or sharing which is said to make their learning more effective. [57]

This study also shows that paper textbooks are the most preferred mode for academic success with more than half of the students (82.2%) agreeing, followed by freely available course content, online platforms, tablets and smart phones respectively sorted in decreasing order. The least preferred technology is blogs with only less than quarter of the students (14%) agreeing to the use of this mode for academic success. Apart from this, the frequency of usage of these technologies among the undergraduates of Melaka – Manipal Medical College was also studied in this research. From the results obtained, paper textbooks once again beat all the other technologies with more than half of the students (79.6%) agreeing to frequently using this mode for academic purposes. Followed by the next highest which are smart phones, online platforms and e-books. Next, the frequency of usage of freely available course content and tablets came close to one another with nearly half of the students (41.4% and 40.8% respectively) frequently using them. Finally, blogs remain as the least frequently used mode of technology (3.2%) for academic purposes. In comparison with a previous study which was conducted on pharmaceutical students in Memphis and Knoxville, Tennessee over a period of three years between 2011 to 2013, the use of paper textbooks gradually decreased as the students started relying on other avenues of acquiring knowledge for academic and examination purposes. [50] Besides that, based on a study conducted on university students in Malaysia; it showed that the students preferred using the learning tools like a dictionary, the online word processors and also the file storage or sharing which was said to make their learning more effective. [57]

The study showed that there is no significant association between sociodemographic details and the perception of students towards online learning. Even though there are differences within the mean perception between different genders, ethnicities and nationalities none of these differences were significant. The mean difference of both male (22.8) and female (22.5) were close to each other yet still insignificant. Therefore, the results of this research are consistent with that of a previous study done in Australia among Malaysian students, namely that gender had minimal insignificant influence on student's perception about online learning.[55] Even in a previous study conducted in the United States [51] there was no association between gender and the perception towards online learning while it also showed that the perception of senior students towards online learning was more favorable than the juniors. Apart from this, the mean perception of International students and Malaysian students too came close with a difference of 0.8, however these associations remained insignificant. Furthermore, the mean perception of the Chinese ethnicity is in the lead (24.3) followed by other ethnicities (22.8) then the Malays (22.0) finally leaving behind the Indians with the lowest mean perception (21.8). In comparative to a previous

study done in Australia on students of various ethnicities to understand how online learning environment is perceived by students of colour, no association was found between them. [56] However, this association was found significant in another study done in a public higher education institution in Kuala Lumpur, Malaysia with International students participating more actively in blended learning, whereas Chinese students were the least likely of all the ethnicities. [58]

When analyzing the association between gender and the preference for technology in learning and social networking for academic success; we found there was no significant difference between the male and female students. In a study conducted among the students in a university in Vellore district, India; Its seen that the males are more comfortable with technology and prefers technology for learning compared to the females [52] Besides that, the association between nationality and ethnicity and their preference towards technology and social networking for academic success also showed no significance. Based on the study that was conducted between African–American students and the White students and also between he African–American students and all the other students, there was also no significant difference among them and the preference towards technology. [53] In another study which was conducted among students from various public higher institutions in Kuala Lumpur, Malaysia it showed that the international students participated more actively in blended learning activities and among all the ethnicities; Chinese students were the least likely to participate. However, it is stated that when it comes to sharing information online; the Chinese students tend to use the social networking platform more and the Indian students were the least in this aspect. In addition to that, Indian students also were the ones seen to have difficulty when it comes to the use of multiple applications or also multi-window screens whilst leaning in a blended environment. [58] Based on the results obtained, it is seen that there is a significant correlation between the student's preference of technology for academic success and the frequency of usage of technology. In the study conducted among undergraduate students in Philadelphia, their results show a significant relationship between the technology engagement and intertemporal preference. [54]

The limitation of this study is that the observation done is at a specific point in time, therefore it may not sustain the views of the undergraduates over a period of time. In addition this research was done on undergraduates from only one institution hence the results obtained cannot be generalized to undergraduates from other institutions.

In this modern age, online learning has become part of the curriculum and especially now during this COVID-19 pandemic many universities and institution have substituted traditional classroom learning to online learning. Hence, online learning should be made to be a conducive platform for undergraduates to continue with classes even during a pandemic. This can be done by providing ongoing feedback from both the lecturers and students as it would help create an informative, engaging and motivational e-learning experience. In addition, if online learning platforms are to be continued by universities and institutions in the future, a supportive learning environment should be created. For instance, setting up small online groups similar to traditional study groups for supportive mentoring of students. Furthermore, online open forums or discussion boards can provide an opportunity for students to request help and assistance from not only their lecturers but also from their peers.

5. Conclusion

As a whole, among the undergraduate students in Melaka – Manipal Medical College, it is seen that the students have more dissatisfaction for online learning compared to being satisfied. It is also seen that using online learning isn't as effective as learning face to face when learning about an assigned topic. In addition to that, more than 50% of the students prefer having a blended classroom rather than having an online only or classroom only curriculum. Despite the different methods of learning and acquiring knowledge which is available, it is seen that majority of the students still agree that paper textbooks are the best way to achieve academic success compared to learning through tablets, smart phones and library websites. As online learning and social media in education is still in its budding stage in our country it has its advantages and disadvantages among students. Nevertheless, technology and social media has become a major role in the present generation's day to day lives, hence incorporating e-learning into traditional brick-and-mortar education might just do better than harm especially like during this COVID-19 pandemic. Just because the world has been put on hold temporarily, teaching and learning should not come to a halt and as e-learning has proven its net worth it should be the mode of disseminating knowledge among undergraduates now and in the future.

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