



Students' Satisfaction Towards the Use of E-learning during the Global Pandemic

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ABSTRACT

During the global pandemic, e-learning became even more popular and used by many educational institutions worldwide to facilitate the students' learning process. Students can easily get the related materials and resources from e-learning. This research intends to examine the level of students' satisfaction with e-learning and their learning experiences during the global pandemic. The quantitative research method was carried out using a questionnaire survey and online research. A total of 150 students from different institutions in India and Malaysia have participated in the survey. The survey was carried out through Google Form and the data were exported to be analyzed using SPSS. The results showed that most of the students were satisfied with e-learning and how it helped them in their studies. The results of this study indicated that convenience flexibility was significantly related to students' learning experiences.

Keywords: Convenience Flexibility, E-learning, Global Pandemic, Learning Experiences, Students' Satisfaction

INTRODUCTION

Educational institutions around the world are based on conventional face-to-face lectures in a classroom. Although many institutions have started using blended learning, many of them still use conventional methods. The sudden outbreak of a deadly disease called COVID-19 caused by a coronavirus shook the entire world. Schools, colleges, and universities around the world have shifted to online learning and adhering to precautions recommended by the World Health Organization (WHO) called "social distancing" or "physical distancing" to reduce interpersonal contact and thereby minimize the community transmissions that could quickly spread the virus in social networks such as the universities, colleges, and schools (Weeden & Cornwell, 2020). The outbreak of COVID-19 causes an unprecedented impact on corporate sustainability (Hu & Kee, 2021) and human well-being (Anwar, Kee, Salman, & Jabeen, 2021). On the other hand, the global pandemic is a double-edged sword and provide an opportunity for delivery services to optimize their performance (Kee et al., 2021) as well as for retailers to make



their online store more attractive for the customer to shop online (Anwar, Waqis, Zain, & Kee, 2021).

Educators are encouraged to deliver lessons via online formats (Abidah et al., 2020). Academic institutions that were previously hesitant to change their conventional educational approach had no option but to shift to online learning. Many studies recognized the shift towards online learning as dynamic changes (Bao, 2020). The physical face-to-face classes were replaced with online classes. The online learning experience is so much different from the physical classes. With the shift to online learning practices, a new issue arose: the students' satisfaction with online learning. Therefore, this paper aims to investigate the students' satisfaction towards the use of e-learning during the pandemic in the Malaysian context. Although online learning provides benefits to both students and institutions, it also has its challenges. The pandemic has pushed every educational institute towards online learning, although nobody was ready for this transition (Baber, 2020). Online learning may provide flexibility to students, especially for those who cannot attend a traditional face-to-face education due to personal or financial circumstances. Hybrid or blended forms may help improve the quality of face-to-face teaching by moving content delivery online and focusing on active learning sessions. Satisfaction has become a pressing question in online learning research. There have been many studies on online learning examining student satisfaction, acceptance of e-learning, success factors of distance learning, and quality of learning (Baber, 2020). This research paper will provide results to illuminate how students evaluate their satisfaction with online learning.

Sabeh, Husin, Kee, Baharudini, and Abdullah (2021) reported that system quality, information quality, system usage, and user satisfaction would influence the e-learning system success. E-learning has many pros than cons for the institutions and the students (Bhuasiri, Xaymounkhong, Zo, Rho & Ciganek, 2012). A physical form does not constrain since it can be done on laptops or handheld devices connecting to the internet and the university's e-learning portal from anywhere (Kilburn, Kilburn, & Cates, 2014). This is especially useful for students who are studying and lecturers who are teaching (Wisloski, 2011). However, researchers argue that e-learning platforms can affect students' loyalty through their learning as nobody controls them (Martinez-Arguelles, Callejo, Argüelles, & Farrero, 2013). The factor influenced can be their personal experience of the quality service provided in e-learning (Sultan & Wong, 2013).

Good quality of service can give the users or students a better experience for their online learning (Ikpe, 2011). It can affect the students' emotions and motivation when using e-learning (Pokrovskaya, Leontyeva, & Ababkova, 2021). Besides, internet connection can also influence students' experience of e-learning (Alshahrani, Ahmed & Ward, 2017). The products by Google can be really useful to portray this e-learning, for example, Gmail, Google Forms, Google Drive, Google Hangouts, Google Jamboard and Drawings, Google Classroom. These tools can successfully be used as an alternative for face-to-face classes (Basilaia & Kvavadze, 2020). Other than that, researchers found out that online skill is one factor that can influence the use of e-learning. Those who are



not used to the technologies will find that it is hard to use e-learning (Bediang et al., 2013).

Plus, a non-conducive learning environment can affect students' personal experience using e-learning because the amount of time they use for e-learning may be less than those who have a conducive environment for studying (Shabbir, Masood & Siddiqui, 2020). Therefore, students are encouraged to express their concerns and reflection through the use of e-learning so that online learning can be effective for every student (Hung & Chou, 2015). Based on a research study by Kang and Imt (2013), the interaction between students and lecturers is also important for their experience using e-learning. It is because students would be more likely to perceive a strong feeling of learning if the lecturers reinforced student contributions. Thus, it will improve their expertise and comprehension (Hung & Chou, 2015).

E-learning is widely used in universities as the use of platforms is becoming increasingly popular. It also has entirely replaced the original teaching methods in some situations. In some cases, however, the conventional teaching methods are still being used and e-learning also complements some other traditional courses (Tomažević, Umek, Keržič, & Aristovnik, 2015). Students' satisfaction with using e-learning is one of the main indicators that reflects how well the students have used the e-learning systems. Based on the research, the main factors of students' satisfaction with using e-learning are perceived usefulness, perceived ease of use, system quality, knowledge quality, and computer self-efficacy (Hammouri & Abu-Shanab, 2018).

E-learning is a famous education method because of its effectiveness in providing education with a low-cost solution that can be accessed at any time and anywhere. Due to COVID-19, every student had to access e-learning as that is the only way of studying. As e-learning provides benefits in terms of technological and logistical factors such as easy access, very flexible convenience, and ease of interactive learning, it increases the students' satisfaction with using e-learning (Diab & Elgahsh, 2020).

In a research study, it has been proven that the quality of information and service gave a significant impact on the students' satisfaction of using online learning as it has been accessed a lot by the students showing that the students are satisfied with its easy access (Machmud, 2018). Furthermore, some researchers highlighted that selecting the right method of learning styles would result in a good outcome of the e-learning program. The educators need to choose the teaching method that suits the students' styles and latest trends allowing them to have the desire to learn and increase their satisfaction. The outcome of the research also proved that the student's learning styles, the trust in educators, and the possibilities of error adjustments give an impact on the students' satisfaction. The students' satisfaction plays an important role to sustain the use of e-learning as it is the main indicator for the success of the educational method especially in developing countries (Bahramnezhad, Asgari, Ghiyasvandian, Shiri, & Bahramnezhad et al., 2016).



Technology has become more advanced in the modern world and it has become so beneficial for society but there are lots of side effects of technology when it comes to the field of education (Allen, 2019). For students, e-learning has a negative impact physically, mentally, emotionally, and socially (Halupa, 2016). This can be noticed in students' behavior such as technology using e-learning becoming an addiction for students and today's youths. Students feel that lack of community, technical problems, and difficulties in understanding instructional goals are the major barriers to online learning (Gillett-Swan, 2017). In a study, students were not sufficiently prepared to balance their work, family, and social lives with their study life in an online learning environment (Dhawan, 2020). Students were also found to be poorly prepared for several e-learning competencies and academic-type competencies (Parkes, Stein & Reading, 2014).

E-learning becomes more important when a pandemic takes place (Li & Lalani, 2020). It becomes one of the sources to connect without limitation in geographic areas (Arkorful & Abaidoo, 2014); however, a low-level preparedness exists among the students concerning the usage of Learning Management Systems (Parkes et al., 2014). One of the positive effects of using online learning is students with higher self-confidence in using technology potentially perform better during their learning sessions as they know how to use e-learning, which brings a significant positive effect towards these students (Khafit, Sulastri & Fauzan, 2020). Those students who come from a low level of household income may face difficulty accessing the internet and technology and obviously, it will become one of a barrier between e-learning and students (Roman & Plopeanu, 2021).

A research by Wang, Jing, Han, Jing, and Xu (2020) showed positive and negative impacts of e-learning for students. Students are more affected by negative effects as it can clearly be seen in students' lives and their behavior (Wang et al., 2020). It includes their emotional health and sleeping behavior. Institutes should use a platform to reach their students to provide a solution for them so that they can follow online learning and use e-learning effectively (Wang et al., 2020). According to Mohyi (2020), the emotions of a person can affect their performance. Hence, any institute needs to protect its students from any problems they may encounter during their learning time.

RESEARCH METHOD

This study was conducted in India and Malaysia and aims to investigate the student's perception and level of satisfaction towards the implementation of online learning during COVID-19. The population will be the students from different institutions with different backgrounds of study and ages as respondents selected randomly. In this study, the questionnaire instrument will be used to collect the data.

Sample and Procedure

The questionnaire was distributed to 150 students. The response rate of respondents completing the survey questionnaire is 100%. Respondents were randomly drawn from



different institutions, located in Malaysia and India. The students were from different backgrounds of study, a majority in Bachelor's Degree followed by other few levels of studies such as Master's and PhD Degree, Diploma, and High School. The respondents are mainly in the age range of 18 to 22 years old and 65% of them were female. The survey questionnaire was generated via Google forms and shared through the online platform. The primary data were collected to get valid and unbiased data from each respondent. All questions were designed accordingly in a set of online questionnaires and conducted in basic English for easy understanding. Each of the questionnaires was accompanied by stating the purpose of the study and assurance of confidentiality of the responses recorded.

Measures

We adapted a social survey as one kind of quantitative approach. Quantitative surveys aim to interpret the data through numeric variables and statistics. There were four sections in the questionnaire; respondent demographic details, student's personal experience using e-learning, student's satisfaction, e-learning system, and side effects of e-learning practices. The first four questions in the survey urged the respondents to provide their demographic information. Four questions of gender, age range, nationality, and educational level were included. The remaining questions employed a 5-point Likert Scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agreed; 5 = strongly agree) to specify the respondent's level of agreement or disagreement to a statement. Students were provided with a link to complete the questionnaire within two months.

Research Design

The research design is an important part as it allows a smooth implementation of the research framework. It is designed to ensure that the objectives set out in the early part of the study can be achieved at the end of the research. In certain circumstances, the research questions require an observational study; in other circumstances, the research questions may be addressed through an experiment; in all circumstances, there are many options in designing the final study. This study adopts a social survey as one kind of quantitative approach.

RESULTS AND DISCUSSION

A descriptive statistical analysis of the survey was conducted using the Statistical Package for Social Science (SPSS). The survey data of the Google Forms were imported into SPSS. The Aggregated Mean Score (AMS) was used as a data analysis approach. The first section of the questionnaire consists of 150 respondents' demographic information (see Table 1).



Table 1. Respondents' Demographic (N=150)

	Frequency	Percentage(%)
Gender		
Female	97	64.7
Male	53	35.3
Age		
18 - 22 years old	105	70
23 - 27 years old	43	28.7
28 - 32 years old	2	1.3
Nationality		
India	70	46.7
Malaysia	80	53.3
Educational Level		
Bachelor Degree	137	91.3
Diploma	7	4.7
High School	1	0.7
Master's Degree	3	2
PhD Degree	2	1.3

Table 1 shows the summary of the respondent's demographic. The purpose of collecting respondents' demographics is to ensure the accuracy and validity of the data sources. Based on Table 1, over half of the participants were female students, 97 respondents (64.7%). The respondents' age is in the range from 18 and up to 32 years old. A total of 70% of the respondents are represented by students aged from 18 - 22 years old. The smaller percentage is 1.3%, representing the students who reported their age from 28 - 32 years old. In this study, students from India are 46.7% in total, while the remaining are from Malaysia. Out of 150 respondents, 91.3% have a bachelor's degree, 4.7% were Diploma students, and 2% were master's degree students, whereas the students with PhD Degree and high school were in smaller percentages at 2% in total.

Table 2. Descriptive Statistics, Cronbach's Coefficients Alpha, and Zero Correlations of All Study variables

Variables	1	2
Convenience Flexibility	0.791	
Learning Experience	.842**	0.907
M	4.0750	3.8638
SD	0.7371	0.8086
	7	9



Note: N =150; ** $p < 0.001$; Diagonal entries in bold indicate Cronbach's coefficients alpha; M = Mean; SD = Standard Deviation

Pearson Correlation Coefficient Analysis was used to determine the strength of the relationship between the two variables in this study. Table 2 contains descriptive statistics, scale characteristics, and interrelationships among the variables. Convenience flexibility and learning experiences were identified as the two variables. The internal consistency of the two components by using Cronbach's alpha is 0.791 and 0.907 subsequently. The convenience flexibility variable has a mean value of 4.0750 while the learning experience variable has a mean value of 3.8638.

Based on Table 2, the relationship between convenience flexibility and learning experience is significant because the p-value is < 0.001 . The correlation coefficient of this relationship is 0.842 which is between range $0.9 > \alpha \geq 0.8$. This indicates a good correlation between convenience flexibility and learning experience. Having convenience flexibility will make students satisfied with e-learning, enhancing their learning experience. Thus, there is a good and positive relationship between convenience flexibility and the learning experience.

Table 3. Summary Regression Analysis of Satisfaction

Predictors variable	Standardized coefficient Beta (β)
Convenience Flexibility	.842**
R ²	.708
R ² change	.708
Adjusted R ²	.706

Note: N=150 ; ** $p < 0.001$

Dependent Variable: Learning Experience

We used Regression Analysis to identify the reliability between a dependent variable and one independent variable. According to Table 3, convenience flexibility was identified as an independent variable and explained the R² of 0.708, indicating that the convenience flexibility variable can explain 70.8% of the variance in the intention of the learning experience result. From table 3, P-Value for convenience flexibility is lower than the significant value at 0.00. It shows that the analysis used the two asterisks as it is the only variable that is significant.

The learning experience was a dependent variable. The dependent variable is the variable that is being measured and tested in an experiment. The case here is the independent variable is a cause while the dependent variable is its effect. Based on table 3, the model shows that the increment of one unit standard deviation in convenience



flexibility, the learning experience will increase by 842.

Table 4. Online Learning Offers Convenience Flexibility

Response	Frequency	Percentage (%)
1. I can access the notes anytime and anywhere with e-learning.		
Strongly Disagree	2	1.3
Disagree	1	0.7
Neutral	7	4.7
Agree	53	35.3
Strongly Agree	87	58
2. E-learning is flexible for me in getting connected with my peers at any time and any place.		
Strongly Disagree	3	2
Disagree	3	2
Neutral	25	16.7
Agree	50	33.3
Strongly Agree	69	46
3. Examination using e-learning runs smoothly.		
Strongly Disagree	5	3.3
Disagree	14	9.3
Neutral	34	22.7
Agree	48	32
Strongly Agree	49	32.7
4. E-learning makes it easier for me to achieve my learning objectives.		
Strongly Disagree	1	0.7
Disagree	17	11.3
Neutral	33	22
Agree	57	38
Strongly Agree	42	28

Table 4 presents the result of online learning offering convenience flexibility. The respondents were given four statements and asked to rate them based on how much they agreed with the statements. The statements included whether the respondents can access notes anytime and everywhere with e-learning, whether e-learning was flexible



to connect with peers, whether examination in e-learning runs smoothly and whether e-learning achieved learning objectives.

Out of all the respondents collected, about 58% of respondents strongly agreed and 35.3% of them agreed as they can access the notes easily. The majority of respondents strongly agree with a total of 69 respondents (46%), followed by 50 respondents (33.3%) who agreed that e-learning is flexible to them in getting connected with their peers. About 49% of respondents stated that they have the examination without any distractions. However, 5 respondents (3.3%) face difficulties with their e-learning examination. The respondent's opinion on the question 'whether e-learning helps them achieve their learning objective', is 38% of respondents agree they have achieved their learning objectives, whereas 22% of respondents choose to go with a neutral opinion while the other 0.7% disagreed with the statement.

These driven factors (the students' preferences on the ability to access teaching material anytime and anywhere (1), flexibility to connect with peers(2), ease of use of the e-learning system (3), and learnings' objectives achievement (4)) are connected and offered convenience flexibility to the e-learning. Students enjoy their learning when they experience convenience flexibility during the session. It helps them to understand the courses and foster their interest in studies. These convenience flexibility are correlating with internet connectivity and technological support. In the last decade, internet connectivity, wireless communication, and computer and smartphone technologies have all increased dramatically in terms of accessibility and quality. Most people in Malaysia (a developing middle-income country) now have access to these technologies (Azlan et al., 2020). It was the explanation that most of the respondents chose to agree with and strongly agree with all the four statements.

Table 5. Online Learning Offers Better Learning Experience

Responses	Frequency	Percentage(%)
1. E-learning helps in well-organized content.		
Strongly Disagree	2	1.3
Disagree	4	2.7
Neutral	27	18
Agree	57	38
Strongly Agree	60	40
2. E-learning is functioning according to my expectations.		
Strongly Disagree	2	1.3
Disagree	11	7.3
Neutral	26	17.3



Agree	64	42.7
Strongly Agree	47	31.3
3. I discover that e-learning material is useful.		
Strongly Disagree	2	1.3
Disagree	3	2
Neutral	24	16
Agree	57	38
Strongly Agree	64	42.7
4. E-learning helps my learning session a lot.		
Strongly Disagree	3	2
Disagree	9	6
Neutral	30	20
Agree	59	39.3
Strongly Agree	49	32.7
5. Studying using e-learning is effective.		
Strongly Disagree	5	3.3
Disagree	19	12.7
Neutral	43	28.7
Agree	42	28
Strongly Agree	41	27.3
6. My results improve a lot during e-learning.		
Strongly Disagree	10	6.7
Disagree	17	11.3
Neutral	41	27.3
Agree	50	33.3
Strongly Agree	32	21.3
7. E-learning helps me to bear with my workload.		
Strongly Disagree	6	4
Disagree	22	14.7
Neutral	26	17.3
Agree	55	36.7
Strongly Agree	41	27.3

Several factors lead to a better learning experience for the students using e-learning for their studies. With the use of e-learning, it provides well-organized content that has become very helpful for the students to work on for their studying purposes and makes it easier for them to assess their e-learning materials and references. To find out the students' opinion about whether e-learning has well-organized content, we got the data



from the respondents as shown in table 5. According to the responses, the majority of respondents strongly agreed with 60 respondents (40%) followed by 57 respondents (38%) agreeing. This indicates a lot of respondents' opinions agreed that e-learning content is well-organized.

Moving forward to the next factor, the perceived ease of use of e-learning can also be achieved according to the students' expectations if the e-learning functions very well in terms of the internet connection, ease of access, and the quality of the e-learning website. This is proven based on the responses that we achieved from the survey. It shows 47 respondents (31.3%) and 64 respondents (42.7%) strongly agreed and agreed regarding this factor. Only 5 respondents (1.5%) disagreed and strongly disagreed, which shows this factor does not become one of the indicators that affect them whenever they use e-learning.

In addition, the students also find that their e-learning materials are very useful for them as they tend to learn better with these materials provided on the e-learning. With the help of extra materials and references on the e-learning, this makes it easier for the students to always refer to these provided notes at any time and wherever they are without having to worry about not getting enough materials for their studies. According to the survey, 64 respondents (42.7%) and 38 respondents (57%) strongly agreed and agreed with this as they find e-learning materials provided are useful for them. A total of 24 respondents (16%) are neutral while 5 respondents (1.5%) strongly disagreed and disagreed with this.

Furthermore, the students enjoy using e-learning for their studies as they discover that e-learning enhances their learning session a lot in terms of the convenience of flexibility, which helps them to gain a better learning experience. Learning sessions on e-learning needs to be conducted in efficient and effective ways to have two-way communication with the students as this proves that their learning sessions on e-learning increase when there are interactions between both sides. A total of 49 respondents (32.7%) and 59 respondents (39.3%) strongly agreed and agreed that it helps in their learning sessions a lot. However, there are also around 12 respondents (8%) who strongly disagreed and disagreed, which they find is not helpful for them.

Moreover, with the use of e-learning, it turns out that these students find e-learning has become one of the ways that can help them to study more effectively compared to traditional teaching methods. This is because students can repeatedly study at their speed with enough materials provided. It also saves their time compared to traditional learning methods where they have to go to classes, which consumes more time. With e-learning, studying can be done more efficiently resulting in effective learning sessions. Based on the survey, 41 respondents (27.3%) and 42 respondents (28%) have strongly agreed and agreed with this.

According to another factor, the students also improve a lot as they find that e-learning is effective for them. It has a positive influence on the students' grades as it gives a better learning experience. It can be proven based on the survey which 32 respondents (21.3%)



and 50 respondents (33.3%) strongly agreed and agreed that their results do improve during the use of e-learning.

Ultimately, the students discover that e-learning does help them to bear the amount of workload for studying. It does make it easier for the students to study even with a lot of other workloads. As materials and references are easy to access, assignments can be done anywhere at any time, allowing the students to fit in their studying time between their work and also other commitments. It helps them to multitask efficiently and improves their learning experience. According to the survey, 41 respondents (27.3%) and 55 respondents (36.7%) strongly agreed and agreed that they can bear the workload with the use of e-learning. However, there are around 28 respondents (18.7%) who strongly disagreed and disagreed with this.

Despite the changes of the education approaches overnight, the results of this study designate that participants were satisfied with the use of e-learning. The implementation of e-learning in the institution helps students to run their learning process during this global pandemic. The result indicates that e-learning furnishes convenience flexibility and a better learning experience. E-learning provides a friendly environment to the students as it shifts the old learning environment into more social, flexible, and provides personal space when needed (Baber, 2020). The high level of satisfaction among participants may be attributed to a variety of factors, including the educators' level of support and follow-up, the level of interaction during the learnings, and the educators' various online teaching approaches. Thus, in practicing the e-learning method, educators should consider those factors to encourage and lead to better learning achievement. These environmental factors are also related to learning experiences.

Our findings suggest that friendly environment features in e-learning should be improved from time to time to bring satisfaction to students and widen up their learning experience. Our results signify that convenience flexibility during the use of e-learning could increase the learning experience. According to Almusharraf and Hussain (2020), students' learning experience during online learning in the Covid-19 pandemic increased since they needed to attend webinars, submit assignments and assessments online. Since students are forced to study online during the Covid-19 pandemic, their learning experience is important to build their motivation to keep studying. Thus, convenience flexibility is proved to be the key factor to increasing their learning experience. Besides, students need to cope with several subjects at one time and they have assignments to be completed. With the convenience and flexibility during the use of e-learning, this is the way their learning experience can increase.

CONCLUSIONS

This research is based on factors that affect the level of satisfaction among students that are influenced by the student's online learning platform. The variables in this study indicate a significant relationship that could influence the level of students satisfaction. The implementation of new teaching and learning methods by shifting traditional classes



towards online learning has a big impact on student satisfaction. An equal effort is required from both institutions and educators to provide students with the best learning experience during this pandemic. According to our study, the findings indicate that convenience and flexibility have a positive correlation with the learning experience in determining the student's satisfaction. It is discovered that the respondents are satisfied with the platforms used by the institutions to employ online learning. Online learning platforms provide satisfaction to students as they are satisfied with the flexibility in online learning. For example, online learning provides ease of use for students to access their notes and offers easy connections with peers and instructors. Although implementing online learning is a dynamic change, it also provides various benefits to the students to be able to achieve their learning objectives, including giving students more space to do their revision and understand the learning materials. The students are highly satisfied with online learning concepts as they find them effective despite the few challenges that they need to encounter during the sessions.

These findings can help and encourage institutions and instructors to understand better how to design their online classes more effectively according to the students' preferences and styles, which results in greater satisfaction for the students. Instructors need to use the right approach to deliver content development to the students. For example, this study suggests that institutions can replace old textbook notes with more interactive content and start giving notes in softcopy due to the situations that restrict instructors from meeting the students. The students discovered that e-learning materials are useful because they can keep them for a long time and it is easy to share with classmates. Responses from the survey indicated that most students are satisfied with the online learning concept and have no problem if it is to be continued in the future. However, students experienced a few problems after using e-learning for a long time such as back pain, eye problems, and other problems related to health. Thus, students provide recommendations regarding online learning to improve the online learning platform to maintain high student satisfaction in the future.

In the current situation of the Covid 19 pandemic, there is a limitation encountered throughout the research. The sampling only covered students who have internet access as the survey was conducted through the online platform to avoid infection of COVID-19. The respondents included groups of undergraduate and postgraduate students from different university backgrounds. Since the data of this study only focused on the students with the accessibility to the online survey, the data somehow is not precise enough to describe as our survey does not reach out to other students without internet access to answer the survey. Additional research could broaden the sample size to include more students' involvement. Future investigations are essential to validate the conclusions drawn from this study.

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