



Exploring the Attitude and Preferences of Students Regarding Using Digital Technologies at the University Level

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Abstract

The current study aimed to explore either teachers are using technology or traditional means for teaching in their classrooms at the university level. Moreover, how many students are owning personal technological devices (Smartphones/Laptops). Which digital technologies do students prefer to use at the university level and for what purposes do students use these digital technologies in their daily life and within classrooms. In addition to this, students' attitude towards learning through digital technologies was also explored. A mixed-method approach was used and first-semester students of the Social Sciences department were conveniently selected as a sample of the study n=547. The results of the study indicated that most of the teachers were using traditional tools for teaching purposes. Moreover, 95% of students were owning personal laptops and 96% of students were having smartphones but still, most of the students (78%) were learning by using traditional tools. In addition to this, (76.2%) of students indicated that they will like to learn by using smartphones as compared to laptops. Whereas, (67.6%) students indicated that they will prefer to learn with technological tools (Smartphones and Laptops) instead of traditional tools (Book/Paper/Pen). Furthermore, most of the students (58%) often use digital technologies like laptops or smartphones within the class but very few use them for study purposes. They mostly use smartphones within the class when they felt bored, for time-pass and chatting with their friends during lectures. Furthermore, in daily life, students mostly use digital technologies for entertainment and other purposes but rarely for study purposes. It is recommended that teachers might integrate technological tools in their daily lesson plans for improving the teaching and learning process at the university level.

Key Words: Digital Technologies, Smart Phones, Laptops, Traditional tools, Purposes, Attitude, In-Class, After Class



INTRODUCTION

Teaching and learning is continuous process and with time technological innovations have transformed the whole approach of teaching and learning. In previous eras, students were used to reading books, newspapers, and the lectures delivered by their teachers because these were the sole source of knowledge. Now with the inventions of the computer and internet students are having access to vast information without the boundaries of cost and time, just they need to have any of the digital devices and an internet connection. Traditional tools of teaching are very common in developing countries like Pakistan among these tools Textbooks, paper, pen, chalk/Board marker, or blackboard/whiteboard are very common. On contrary to this, the developed countries are making various innovations in their teaching and learning strategies and tools for making the learning experience more effective and joyful for their students. Moreover, various digital learning tools have also been invented and are being used in various countries all over the world including Smartphones, Laptops, Tablets, etc (Puschel, 2012). These technologies are making learning experiences effective for students and are also easy to access for students (Zhu, Yu & Riezebos, 2016). As digital devices are making every person smart same as we can make our students smart learners by utilizing these devices for study purposes because in the traditional classroom students are solely dependent on their teachers for getting any information or solving any problem which may not enhance their skills of independent learning and they prefer to rote memorize all the information delivered by their teacher instead of searching at their own or learning by their selves. Although Pakistan is a developing country most of the students at the university level are having Smartphones or Laptops and they use them for different purposes. PTA's telecom reported that by the end of May 2019 number of smartphone users in Pakistan were reached 161.183 million which is 78.16% of the total population ("Telecom Indicators | PTA", 2020). Moreover, students are having access to digital technologies especially smartphones, computers, and Laptops. Even though almost all of the students at the university level are having smartphones and access to computers and laptops but they do not utilize those tools properly for educational purposes. The reason behind this might be that they only like digital technologies for entertainment purposes, for knowledge gaining purposes, for earning purposes but not for learning purposes. That is why the



aim of conducting this study is to explore either teachers are using technology or traditional means for teaching in their classrooms at the university level. To investigate the ownership of digital technologies/devices among university-level students. To explore which digital technologies students preferred to use at the university level. To find out the purposes for which students use digital technologies in their daily lives and within classrooms. In addition to this, students' attitude towards learning through digital technologies was also explored.

Rationale of the Study

Digital tools have been spread all over the world and they have not only lessened the distance among the peoples but also reduced the distance among students and information. A huge amount of information is available on the internet and students' can get access to that information within no time. Digital technologies have made the generation of this era smarter not only in the field of education but in every aspect of life whether it is a matter of searching someone's address or finding the best restaurant in the place.

Researchers, personally observed that most of the students are having smartphones but many of them use those either for chatting with their friends, watching videos, or playing games even in their classrooms. That is why researchers wanted to explore that which digital technologies students' preferred in their daily life and for what purpose they utilize those digital tools. In addition to this, the researcher also wanted to explore the attitude of students regarding learning through digital technologies so we can plan future educational strategies as per the preferences of the students.

Objectives of the Study

The objectives of the current were to:

1. Explore either teachers are using technology or traditional means for teaching in their classrooms at the university level.
2. Investigate the ownership of digital technologies/devices among university-level students.
3. Explore which digital technologies students preferred to use at the university level.



4. Investigate the preferences of students regarding the usage of traditional tools or digital technologies for study purposes at the university level.
5. Explore the purposes for which students utilize digital technologies in their daily life at the university level.
6. Examine the purposes for which students utilize digital technologies in their classrooms at the university level.
7. Explore the attitude of students regarding learning through digital technologies at the university level.

LITERATURE REVIEW

The utilization of digital innovations in the education system is now getting popular and many countries all over the world are planning innovative ways of teaching and learning for improving their standards of education (Akturk, Izci, Caliskan, & Sahin, 2015). Moreover, Information and Communication Technology (ICT) is not only improving the learning of students but also the teaching strategies of instructors as well. Furthermore, these technological innovations have made the concept delivery easy and effective (Amro., 2015). In addition to this, the learning experiences of students can also be improved by utilizing digital devices in effective and creative ways (Attuquayefio & Addo, 2016). The most recent digital teaching strategies are e-learning and m-learning which have facilitated the teaching and learning processes through its flexibility and accessibility (Alzaza & Yaakub, 2011).

Digitalized or Computerized learning system is replacing conventional educational techniques progressively and continuously (Amro., 2015). It not only replaces a pen with a tablet but involves the development of completely new plans and strategies for the successful implementation of this modern learning approach (Alzaza & Yaakub, 2011). In early times, oral communication and memorization were the basic means of education and overtime humans started utilizing different surfaces including, sand, leaves, stones, etc. for learning purposes until paper, pen, textbooks, and blackboards has been invented (Boser, Palmer & Daugherty, 1998; Salisbury, 2007 & Kern, 2015). Moreover, today in most of the developing countries' traditional approach of



teaching (lecture method) is common and at the university level, both whiteboard usage and screens with projectors are the major tools for lecture delivery.

Smartphones and Laptops are the most common digital devices in the modern era. As per the report, the average usage of mobile phones or smartphones in the UAE is a little above the world average (Xanthidis, Al Shamsi, Al Bloushi & Xanthidou, 2019). The increase in ownership of the device, in particular smartphones, provided considerable flexibility in selecting those devices for specific tasks which subsequently resulted in a sharp rise in ownership of the device (Cassidy et al., 2015). In addition to this, research shows that percentage of American university students owning a smartphone and laptop was 95 percent whereas, 30 percent have Smartphones, Laptops as well as Tablets (Brooks & Pomerantz, 2017). It has been analyzed that the number of smartphones and laptops in the American variety community is considerably higher.

Students are owning digital devices but either they prefer to learn from those digital devices or conventional media such as paper is a point of consideration. As per Kohut, Doherty, Dimock, and Keeter (2012) screen reading is increasingly common among the general population, particularly for specific reading purposes. Same as, students prefer to use e-books or digital means for particular tasks relating to learning and reading as compared to paper books moreover, as per research study students spent more time while reading through electronic books or means as compared to non-electronic means (Daniel & Woody, 2013). Furthermore, another research study indicated that for reading purposes most students preferred Tablets as compared to textbooks (Martin-Beltrán, Tigert, Percy & Silverman, 2017). Moreover, researches proved that students preferred digital learning devices because they helped them in learning new concepts efficiently and effectively and also improved their grades and understanding of course material (Selwyn, 2008; Edmunds, Thorpe, & Conole, 2012; Andrew et al., 2018). In contrary to this, a research study indicated that print form of reading has been supported by 92% of students in five countries including Germany, the US, Japan, Slovakia, and India because as per their opinion they concentrate well while reading in print form (Baron, Calixte & Havewala, 2017). Moreover, another research study has shown that students still value paper-based readings and prefer to read printed materials rather than to read them from a computer which means that paper-based materials are still significant academic tools (Davidovitch, 2017).



Paper-based materials or traditional tools of teaching are still preferred by students which highlights a point that if students are satisfied with traditional tools of teaching then what is the attitude of the students towards learning from digital technologies or devices. Previous research indicated that students are having a positive attitude towards innovations and digital technologies in terms of their various advantages in improving online or web-based learning experiences. Furthermore, the attitude of students towards technology and the influence of mobile technology are closely related to each other. A research study conducted by Agarwal and Ahuja (2013) indicated that student-teachers are having a positive attitude towards learning through ICT. Moreover, Davis, Bagozzi and Warshaw (1989) Technology Acceptance Model (TAM) highlights that individuals' personal beliefs regarding any device or system is having a greater impact on its usage for example if a person is believing that mobiles are dangerous for them then they will try to use it less or not eager to use it for daily life or educational purposes.

The education sector in Pakistan is not completely ready to leave the traditional tools of teaching and accepting the new trends of the digital world but still, Pakistan is making efforts in improving its education sector and now some schools, colleges, and universities can utilize digital tools of teaching (Karim, 2009). Many of the educational institutes in Pakistan are putting their efforts to equip their classrooms with projectors and computers or laptops and also making their halls computerized or fully equipped with technology (Jan, 2016). Moreover, as per a recent survey, 78% population of Pakistan is having Smartphones and digital devices which can be used for educational purposes but the point here is that for what purposes do students' use digital technologies in their daily lives, what are their preferred tools for learning either digital or traditional and what are the attitudes of the students regarding using digital technologies for learning. By reviewing the existing literature, it has been analyzed that there are studies in the international context that explored students' preferences and attitudes about digital technologies but their responses are varying that is why it is needed to be explored more. Moreover, specifically in Pakistan as per my little knowledge no study has been conducted to answer the questions which were explored in this article.



METHODOLOGY

Research Design

For this study researcher used both quantitative and qualitative research designs for data collection. The questionnaire was used for the quantitative part and interviews were conducted for the qualitative part to get in-depth views of the participants. Furthermore, descriptive design was used for reporting quantitative analysis and thematic analysis was used for reporting qualitative analysis.

Population & Sampling

For the current study, 1st-semester social sciences students of public universities of Islamabad were the population of the study. The total number of students registered in the social sciences department in public universities of Islamabad was 8659. According to the higher education commission, the total public universities of Islamabad are 15 and four universities were picked up conveniently for data collection. The target population of the study was $N=5463$.

The sample of the study was selected by using the convenience sampling technique by using Cohen Manion and Morrison (2007) table for determining sample size. According to that table sample size for the current study was $n=547$.

Research Instrument

Researcher adapted questionnaire developed by Matthew Andrew, Jennifer Taylorson, Donald J Langille, Aimee Grange and Norman Williams (2018) for collecting quantitative data which was regarding Youth's most preferred digital technologies and their attitude towards learning through Digital Technologies within Pakistan. Whereas, for the Qualitative part of the study researcher used a self-developed interview guide consisting of five questions.

For checking the reliability of the instrument researcher picked 60 social sciences students for the pilot study and Cronbach alpha was calculated the value obtained was 0.86 which is a good reliability value.



DATA ANALYSIS

For analyzing the quantitative data, descriptive statistics were used and percentages were calculated because it was an exploratory study. Whereas, for analysis of qualitative data thematic analysis was done by following manual transcription and axial coding.

RESULTS

Quantitative Data Analysis

The questionnaire was used to get students' responses regarding ownership of digital devices, Classroom usage of digital devices, and students' preferred learning tools. For analyzing the quantitative part of the study researcher used descriptive statistics design and analyzed the results by obtaining percentages. The details of the results are mentioned as under:

Table 1 *Percentage of Device Ownership Among University Level Students (n=547)*

N	Laptops (%)	Smartphones (%)
547	95.4	96.4

As per the values mentioned in the above table, 95.4% of the students from the study sample were having personal Laptops whereas, 96.4% of students were having Smartphones at the university level. It has been indicated from the above results that at university level maximum of the students were having both Laptops and Smartphones but the percentage of students having Smartphones is slightly higher.

Table 2 *Usage of Learning Tools Within Classroom (n=547)*

N	Books/paper (%)	Laptops (%)	Smartphones (%)
547	78.0	7.2	14.8



The above-mentioned values are indicating that the percentage of students who mostly used Books/Paper within the classroom for learning is 78.0% whereas, 7.2% of students used Laptops and 14.8% of students used Smartphones. It has been analyzed from the above table that commonly at the university level in Pakistan teachers were using traditional means of teaching (Book/Paper) as compared to Laptops and Smartphones in their classrooms.

Table 3. *How often Students' Use Digital technologies within Classroom (n=547)*

Statement	Agree (%)	Disagree (%)
I Often Use Digital Technology Like Laptop or Smartphone within Class	58	42

As per the values mentioned in the above table, it has been indicated that the percentage of students who showed their agreement towards the statement “I Often Use Digital Technology Like Laptop or Smartphone within Class” was 58% whereas the percentage of students who showed disagreement towards the same statement was 42%. It has been analyzed from the above results that the percentage of students who use digital technologies like laptops or smartphones was higher as compared to those who do not use digital technologies.

Table 4 *Students' Preferences Regarding Learning Tools (n=547).*

Statement	Agree (%)	Disagree (%)
I want to learn by using books/paper/pen	32.4	67.6
I want to learn by using laptops	56.8	43.2
I want to learn by using Smartphones	76.2	23.8

The values in the above table is indicating that 67.6% of respondents showed their disagreement with the statement “I want to learn by using books/paper/pen” whereas, 56.8% of



respondents showed their agreement with the statement “I want to learn by using laptops”. In addition to this 76.2% of the respondents showed their agreement with the statement “I want to learn by using Smartphones”. It has been analyzed from the results that the majority of the students wanted to learn by using smartphones and Laptops as compared to Books, Paper or Pen.

Table 5 Attitude of students towards learning through digital technologies (n=547).

Statement	Agree (%)	Disagree (%)
I enjoy learning about the use of new kinds of technologies	82.2	17.4
Learning about Technology will also help me in my studies	87.4	12.6
Learning about Technology or technological devices will help me in getting future Job	86.2	13.8

The values present in the above-mentioned table is indicating that 82.2% of respondents showed their agreement with the statement “I enjoy learning about the use of new kind of technologies” and 87.4% of respondents also showed their agreement with the statement “Learning about Technology will also help me in studies”. In addition to this, 86.2% of respondents showed their agreement towards the statement “Learning about Technology or technological devices will help me in getting future Job”. It has been indicated from these results that respondents were highly agreed with all of the three statements which means that they were having a positive attitude towards digital technologies and learning through digital technologies.

Qualitative Data Analysis

Structured interviews were conducted to get responses from the respondents regarding the purposes of using Digital technologies and the attitude of students towards learning through



technology-based tools or devices. Five questions were asked from the respondents and after getting responses researcher transcribed that information word to word and thematic coding was done. Following is the detailed analysis of structured interviews.

In response to the question, For What purposes do you use smartphones in your daily life? The majority of the respondents said that they use smartphones for entertainment purposes because through the internet they can get access to every entertainment site which helps them in overcoming their boredom. Moreover, participants also responded that they use smartphones for watching movies, dramas, and videos. The majority of them also said that they use their smartphones for playing games anywhere for passing their time without getting bored. In addition to this, respondents also said that they use their smartphones most of the time for making social connections by utilizing applications like Facebook and WhatsApp.

One of the respondents said that:

“Most of the time I use my smartphone for chatting and texting my friends by utilizing Facebook and WhatsApp which are best and cheapest applications for everyone”

The majority of the respondents also said that they use their smartphones for photo capturing, editing, listening to songs, tracking location, and getting and spreading information. Moreover, some of the respondents said that they use smartphones for solving daily life problems by watching online videos. One of the respondents said that:

“I like watching videos online by using my smartphone because there are many video tutorials and hack videos through which we can easily solve our daily life problems”

In response to the question, for what purposes do you use your Smartphone within the class? Most of the respondents said that they use their Smartphones for texting their friends and playing games during boring lectures because teachers usually focus on lecture delivery but not on the engagement of students due to which they use their phones during class. Moreover, students also said that in boring classes they, again and again, track time by using Smartphones to check after how much time the lecture will end. One of the respondents said that:

“During the boring lecture, I check notifications on my phone, sometimes text my friends and Do Swipe Up and Down on my Social media posts”



In contrary to this, some of the students said that they use their Smartphones in class for searching information online, for finding meanings of words by using a dictionary, and for recording teachers' lectures during class. In addition to this, some of the students also said that they use Smartphones for solving in-class problems by using the internet and for capturing videos during presentations for self-reflection. Whereas, one of the respondents said that:

“We are not allowed to use Smartphones within the class and if we do and get caught we pay fine”

In response to the question for what purposes do you use your laptop most of the time? Some of the respondents said that they use laptops mostly for study purposes, for making notes by utilizing the internet. In addition to this, most of the research participants also responded that they use the laptop for making PowerPoint presentations and assignments. Research participants also responded that they use laptops for drafting letters, Applications, and for doing research work. In Contrary to this, most of the respondents said that they use laptops most of the time for playing games because they enjoy playing games on the big screen of laptops. They also said that they use laptops for Socializing on Facebook, Twitter, watching movies, Online videos, and Listening to Songs. One of the respondents said that:

“It is not easy to bring laptop everywhere because of their big size that is why she prefers to use a Smartphone instead of a Laptop”

Another respondent also said that:

“I do not use a laptop and I use to do all of my work on my Smartphone”

In response to the question for what purpose do you use your laptop within the class? All of the respondents said that they use Laptops within the class for making and presenting their work through PowerPoint Slides. They also said that they use laptops for making assignments and searching study relevant materials sometimes Moreover, they also said that laptop is not much used in traditional classrooms because they do not have much to do with it. Teachers do not involve them in any kind of activity for which laptop utilization is required that is why most of the time they do not bring laptops within the class. One of the respondents said that:

“I only bring my laptop within a class during classroom presentations”



In response to the question Do you think technology can help you learn? if yes then how and if no then Why? The majority of the respondents said that Yes Technology can help them in learning if teachers and students both can utilize it properly same as teachers are utilizing technology in foreign countries like Japan and USA. One of the respondents said that:

“Teachers should use smartphones within the class for learning purpose because most of the students like to use smartphones”

They also responded that Technological tools like Smartphones are the best way of accessing vast knowledge within no time by sitting at any place. Students can now get access to thousands of sites relevant to one keyword just by doing a single click on a laptop or Smartphone. Moreover, they also said that students can do independent learning if they utilize technology-based tools properly, virtual learning and online learning are common now a day but for getting benefits of these services students are required to utilize technology-based tools properly and positively. Respondents also said that teachers must utilize technology-based tools within class especially smartphones and laptops instead of lecture methods because they feel boring in long lectures. One of the respondents said that:

“If teachers plan lectures effectively by utilizing technology properly then students can learn better because in traditional long lectures they lose their attention within the class, nod their heads and pretend like they are listening to teacher but in actual they do not”

Some of the respondents also said that students can utilize video learning tutorials properly for improving their learning. These tutorials can help students for improving their concepts and every student can watch them by utilizing their laptops and smartphones. One of the respondents said:

“I watched online learning tutorials on my laptop while preparing for my exams and it improved my concept clarity and I stopped doing rote memorization”

In addition to this, some of the respondents also said that various online learning websites are available through which students can learn material and also get help for making their assignments and presentations. They also said that now thousands of books are available online which are free of cost and we can utilize those for improving our learning. Some of the respondents



also said that now various learning apps are also available which are free of cost, easy to download on smartphones, and can be utilized for learning purposes.

Findings:

- Most of the students (78%) were using traditional tools including Book/Paper/Pen for learning within the class. It is indicated that teachers are using traditional means of teaching instead of technological devices at the university level.
- The majority of the students (95% and 96%) at the university level were having their Smartphones and Laptops. Teachers can plan their lessons effectively and allow students to use these technological devices within the class for learning purposes.
- The majority of the students (76.2%) indicated that their preferred tool for learning purposes is smartphones as compared to laptops because they are easy to carry. Whereas, some participants also indicate that they wanted to learn by using laptops also but their teachers normally use traditional tools of teaching within the class.
- Most of the students (67.6%) indicated that they will prefer to learn with technological tools (Smartphones and Laptops) instead of traditional tools Book/Paper/Pen.
- Most of the students (58%) often use digital technologies like laptops or smartphones within the class but very few use them for study purposes.
- The majority of the students' (82%) indicated that they want to learn about new technologies that will help them in their education.
- Results of the current study also highlighted that within daily life majority of the students use smartphones and laptops for entertainment purposes, Watching movies, playing games, making social connections, Photo capturing and editing, Listening to songs, Tracking location, Getting and spreading information, Making assignments, drafting letters and doing researches.
- Most of the students responded that they use Smartphones within the class for reducing their boredom and for entertainment purposes.
- Few of the respondents also said that they use Smartphones and Laptops for study purposes, for problem-solving, and for searching information within the Class.



- Most of the students were having a positive attitude towards learning through digital technologies.
- Most of the students want their teachers to use digital technologies within the class.

DISCUSSION

The aim of conducting this study was to explore either teachers' are using technology or traditional means for teaching in their classrooms at the university level. To investigate the ownership of digital technologies/devices among university-level students. To explore which digital technologies students preferred to use at the university level. To find out the purposes for which students use digital technologies in their daily lives and within classrooms. In addition to this, students' attitude towards learning through digital technologies was also explored.

Results of the study indicated that the majority of the teachers at the university level are using traditional tools of teaching instead of technological tools. These results are akin to the study of Karim (2009) which indicated that traditional approaches of teaching are still common in Pakistan even though we are still under the process of equipping our educational institutes with technological tools.

The researcher took the responses of students regarding ownership of digital technologies/devices including Laptops and Smartphones, results of the study indicated that the majority of the students at the university level in Pakistan are having both Laptops and Smartphones but the percentage of Smartphones is slightly higher. These results are akin to the study of Brooks and Pomerantz (2017) which highlighted that the ownership of Smartphones and Laptops is quite higher among university-level students.

Results of the study also indicated that currently most of the students at the university level are learning through traditional tools of teaching including Book/Paper/Pen but they do not like to learn through these tools. The reason behind this might be, for students these tools are quite boring and do not involve their active participation. These results of the study are unique as no such research study has been conducted in Pakistan before. Moreover, it is also indicated that students



preferred digital technologies especially smartphones for learning purposes as compared to traditional tools including Book/Paper/Pen and they want to learn through Smartphones in the future. It might be because students believe that by learning through smartphones they will get engaged and involved in learning activities which might reduce their boredom and improve their learning. These results of the study are contrary to the existing research conducted by Andrew et al., (2018) the results of this study indicated that students preferred Book/Paper/Pen for learning as compared to digital devices including Smartphones, Laptops, and Tablets.

Results of the study also highlighted that most of the students were agreed that they usually use digital technologies including Smartphones and Laptops within the class but as they said they use traditional tools for learning it raised a question that for what purposes they use these digital technologies within the class. It might be possible that they use these technologies for reducing their boredom within the class by utilizing these devices for entertainment purposes. These results are akin to the research studies which indicated that most of the students used Smartphones during lectures but the number of students utilizing digital technologies for study purposes or taking notes is quite less (Douglas, Angel & Bethany, 2012; Gorra & Bhati, 2016).

Results of the study also indicated that the majority of the students usually use digital technologies either for reducing their boredom or entertainment purposes whereas, some of them responded that they use these technologies for searching information, problem-solving, making presentations, or study purposes within their classrooms. The results which highlight that students use digital technologies within the class for reducing their boredom or entertainment purpose is unique as students usually avoid accepting this reality.

Results of the current study also highlighted that within daily life majority of the students use smartphones and laptops for entertainment purposes, Watching movies, playing games, making social connections, Photo capturing and editing, Listening to songs, Tracking location, Getting and spreading information, Making assignments, drafting letters and doing researches. This purpose can also be converted into educational purposes through proper planning and effective utilization of digital technologies.

Results of the study also indicated that the majority of the students at the university level are having a positive attitude towards learning through digital technologies because as per their



opinion digital technologies and learning about new technologies will not only help them in education but also improve their skills and aid them in getting future jobs that is why they want their teachers to utilize digital technologies including Smartphones and Laptops for study purpose at the university level. These results are similar to the existing study of Agarwal and Ahuja (2013); Brooks and Pomerantz (2017) which indicated that students are having a positive attitude towards learning through digital technologies because it helps them in enhancing their knowledge and skills.

Recommendations

- Most of the students were having digital devices so teachers may plan their lessons by using those digital devices for engaging students within the class.
- Teachers may involve students in independent learning by utilizing digital technologies.
- Teachers may enhance the use of digital technologies for learning purposes to reduce students' boredom within the class.
- Teachers may arrange seminars for students regarding various authentic knowledge-gaining websites and applications which students can use for learning.

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