



## Effective Ways of Using Technology in Teaching

---

Surinder Kumar Mourya and Tarandeep Singh

EasyChair preprints are intended for rapid dissemination of research results and are integrated with the rest of EasyChair.

December 21, 2022

# Effective ways of using technology in teaching

Surinder Kumar Mourya<sup>#1</sup>, Dr Tarandeep Singh<sup>\*2</sup>

<sup>#</sup>*Information Technology Department, I.K.G Punjab Technical University  
Jalandhar, Distt. Kapurthala India*

<sup>1</sup>*surender.mourya1999@gmail.com*

<sup>3</sup>*tarandeepskhs@gmail.com*

**Abstract**— During last two decades, technology has evolved and is still evolving. Many people are becoming technologically adept and digital citizens. Technology is essential to the creation and exchange of knowledge in the teaching sector in the current digital era. When technology is used in the classroom, it may improve teacher knowledge and aid in the learning and motivation of the students. Social networking has been used to support teaching over the past ten years, including its integration with online games and educational content (Johnson & Germain-Froese, 2016). Technology has also demonstrated its efficacy in the classroom, serving as a source of inspiration and creating an environment conducive to real learning. But there are still drawbacks to using technology in the classroom. Students might misuse technology and easily become distracted. In addition, excessive use of technology may impair students' ability to think (Fetylyana Nor Pazilah, 2019). This study looked at the best practices for integrating technology into the classroom. It aims to identify the most efficient online platforms and technological resources that teachers can use in their line of work. For creating educational content, many of these tools are free and simple to use. The purpose of this study is to determine how much awareness there is among teachers and students at various colleges regarding the use of technology in the classroom.

**Keywords**— technology teaching, effective technological, students easily, diverted misuse, technology frequent

## I. INTRODUCTION

Technology has developed over the past 20 years and is continuing to grow into the 21st century. Many individuals are becoming technologically adept and digital citizens. Technology is essential for the provision and exchange of knowledge in the teaching sector in the era of digital transformation. Therefore, we are currently exploring how technology is used in classrooms and for teaching.

## II. REVIEW OF RESEARCH PAPERS

When technology is used in the classroom, it may increase teacher knowledge and aid in the learning and motivation of the students. Social networking has been used to support teaching over the past ten years, including its integration with online games and educational content (Johnson & Germain-Froese, 2016). Technology has also demonstrated its utility in the classroom, serving as a source of inspiration and creating an environment favourable to real learning. But there are still pitfalls to using technology in the classroom. Students might misuse technology and even become easily distracted. In addition, excessive use of technology may hinder students' ability to think (Fetylyana Nor Pazilah, 2019). This study

looked at the best practices for integrating technology into the classroom. It aims to identify the most efficient online platforms and technological resources that teachers can use in their line of work. For creating educational content, many of these tools are free and simple to use. The purpose of this study is to determine how much knowledge there is among teachers and students at various colleges regarding the use of technology in the classroom.

## III. RESEARCH QUESTIONS

1. Do teachers incorporate the use of technology in classrooms while giving lectures? If yes, how do they use technology? If not, why not?
2. Which technologies or media can be used in classrooms.

## IV. METHOD

### A. Participants

In this study, college teachers and students filled out the survey from different colleges in the Tricity of Chandigarh, Mohali, and Panchkula. For the information collection, everyone was invited to complete a questionnaire that asked them to report on their technology use in classrooms. The participants are chosen randomly and voluntarily.

### B. Instrument

The use of technical tools by teachers, the kind of tool they use, and their motivations were all gathered using a questionnaire. Thirty questions made up the teacher survey, which was broken down into five categories: the teacher's educational background, the classroom environment, the technology used by the teachers, their opinions regarding the use of technology, and factors influencing your use of technological tools. There were 18 items on the student survey.

### C. Data collection and analysis

A total of 150 teachers filled out the survey questionnaire of different colleges. Teachers were asked to fill complete the questionnaire reporting their attitudes towards the use of technology and technological knowledge. These responses were analysed through the use of percentages.

1) **Education Background:** Table 1 lists the teachers' educational backgrounds who took part in the survey. The majority of teachers hold master's degrees, and some have earned PhDs. Some have less experience teaching but more

professional experience, while the remaining only have teaching experience.

TABLE I  
EDUCATIONAL BACKGROUND

Categories	Options	Percentage
Background Education	Bachelor	0%
	Master	60%
	PhD	40%
Teaching Experience	Below 5	40%
	Below 10	20%
	More than 10	40%
Field of Teaching	Technology	50%
	Management	20%
	Finance	10%
	Marketing	10%
	Accounting	10%

2) **Classroom Facilities:** The following table show the facilities available in classrooms.

TABLE 2  
CLASSROOM SETTINGS

Categories	Options	Percentage
Facilities	Computer	80%
	Projector	100%
	Microphone	40%
	Speaker	40%
	LAN	80%
	Wifi	20%
	Whiteboard	60%
Students' use of smartphones	Yes	80%
	No	20%

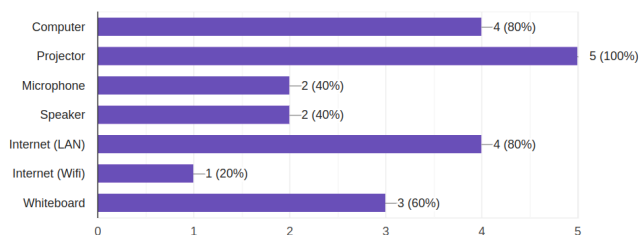


Fig. 1 Facilities available in Classrooms

The above fig shows graphically that most of the technologies like a computer with internet LAN, projectors and microphone are available in classrooms and are provided by their colleges and universities.

3) **Technological Knowledge of Teachers:** If someone knows how to use the technology and can use it, the technology is more useful. The teachers' technological proficiency is displayed in the following table.

TABLE 3  
TECHNOLOGICAL KNOWLEDGE OF TEACHERS

Categories	Options	Percentage
Teachers using technology in classrooms	Yes	100%
	No	0%
Applications used	Word	60%

Use of Online Platform	Excel	60%
	PowerPoint	100%
	Youtube	60%
	Google Drive	50%
	Google Classroom	80%
	Zoom	80%
	AWW App	20%
	Ted Talks	20%
	Microsoft Teams	100%
	Google Meet	20%

The above table shows application which is mostly used by teachers graphically. It shows that Microsoft PowerPoint is the most useful application and is used for giving presentations, Microsoft word for giving assignments and Microsoft Excel for maintaining student records.

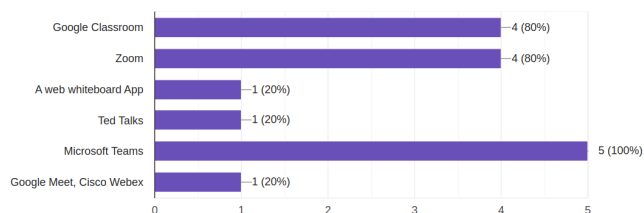


Fig. 2 Application used by Teachers

The graph above demonstrates that Microsoft Teams is the most popular online teaching platform. Teachers become more tech-savvy during the pandemic and begin using online video-conferencing tools like Google Meet, Zoom, Microsoft Teams, etc. for teaching purposes. It can be challenging to use them at first due to a variety of issues, such as limited experience with various applications or technical issues, such as a slow internet connection. Since the pandemic, technology use has increased, and the majority of teachers are currently utilizing it.

4) **Factors affected by the use of technology in classrooms:** Many factors affect the use of technology while teaching in a classroom. Some of the factors like teacher interest will increase if he/she will familiar with technology, increases teacher's skills, decreases workload, increase confidence, preparation time is more needed it will be less if one is familiar with the platform, facilities are more important (e.g., Internet, Wi-Fi, computer), more of them are support from heads of departments and teaching content.

5) **Teacher perception of technology:** The below table shows the different perceptions of the teachers towards the use of technology. Most teachers rate that technology is necessary for teaching and thinks that digital technology can help students in learning.

TABLE 4  
TEACHER'S PERCEPTION

Perceptions	Rating	Percentage
Level of your technology literacy	1	20%
	2	60%
	3	0%
	4	0%
	5	20%

Technology is necessary for teaching.	1	20%
	2	0%
	3	0%
	4	0%
	5	80%
Digital technology can help in the learning of students.	1	20%
	2	0%
	3	0%
	4	0%
	5	80%

6) **Devices used by Students and teachers:** The following figure show graphically the most used device by students and teachers.

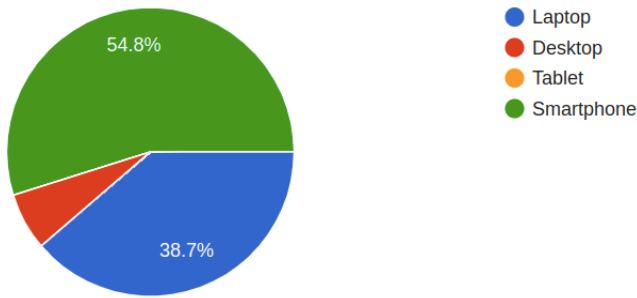


Fig 3 Most used devices

7) **College awareness for online learning:** The following chart shows the rating given by teachers and students to their college regarding the awareness of technology for online learning.

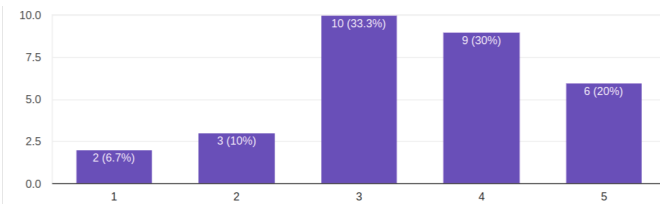


Fig 4 College awareness for online learning

8) **Things students like about online learning:** Students like to use technology while learning. Technology helps in describing topics with graphical examples and animation, these animations and PPTs can be shared with the students to repeat the topic again and again. Classes through online mode make liked by students because of flexible timing, no pressure, learning from their comfort zone, more safety at home, no disturbance from other classmates, one to one talk, doubts can be easily cleared, and cost-friendly as it decreases the transportation expenses, concept clearance and can learn advanced topics.

9) **Things students dislike about online learning:** Students like the online classes but some of the things which are not liked by them. Some problems like network issues cause internet and audio problems, less face to face interaction with teachers, low motivation, occasionally non seriousness, sitting in front of a laptop for a too long period causes eyes problems, and also bad for practical things.

10) **Student's satisfaction in using technology:** The following fig shows how much students get satisfied by using technology while learning.

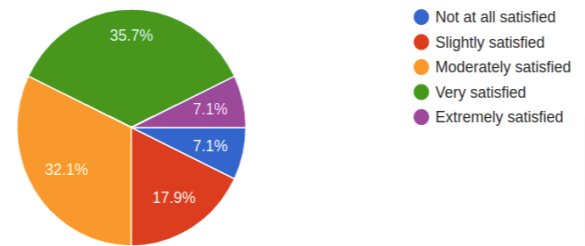


Fig 4 Students satisfaction

11) **Importance of technology in Teaching and Learning:** The following chart shows either technology is important or not while learning or teaching.

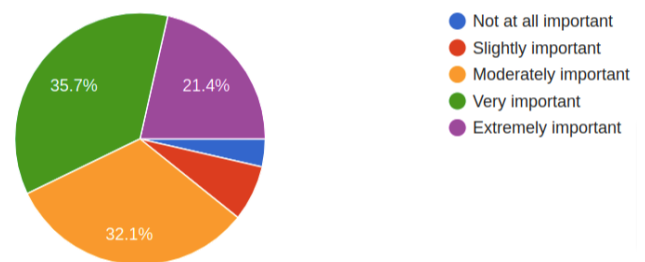


Fig 5 Importance of technology

12) **Importance of face to face communication:** The following fig shows either face to face interaction is important or not while learning or teaching along with the technology.

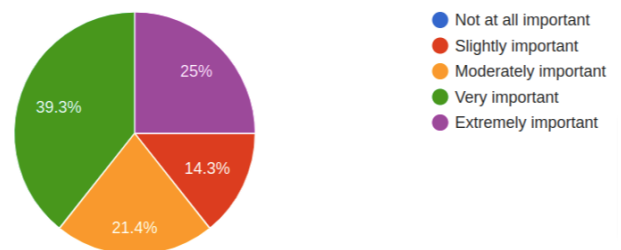


Fig 6 Importance of face to face interaction

#### IV. CONCLUSIONS

After the analysis of the survey and research we find that technology is very important in classrooms or in online learning like during the pandemic. Technology can enhance the way of teaching and learning in different ways by utilising a graphical representation of the working of any model. For using technologies one needs to know about them. A lack of technological knowledge can reduce the efficiency of the teachers. During the pandemic, offline college classes are not possible so the use of technology has been boosted and teachers started taking online classes. Students like the online

classes because of different benefits but there are some difficulties also. Teaching can be enriched by adopting the technology, for daily use and especially for practical things for example in Computer Science practical knowledge is also more important. by providing regular 5-10 min assignment which uses any technology that will help a student to learn something new in day to day life. Teachers need proper technical guidance and training to use them efficiently during teaching. In the future, more new technology will be introduced which are more efficient than the current time. For improving the teaching skills by using technology, colleges and universities need to organise half-yearly or quarterly training sessions. These sessions will be more helpful.

#### V. REFERENCES

- [1] Almekhlafi, A. G. (2006). The effect of computer-assisted language learning (CALL) on United Arab Emirates English as a foreign language (EFL) school students' achievement and attitude. *Journal of Interactive Learning Research*, 17(2), 121–142.
- [2] Adcock, L., & Bolick, C. (2011). Web 2.0 tools and the evolving pedagogy of teacher education. *Contemporary Issues In Technology and Teacher Education*, 11(2), 223-236.
- [3] Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education*, 11, 71-80.
- [4] Johnson, M., Riel, R., & Germain-Froese, B. (2016). Connected to learn: Teachers' experiences with networked technologies in the classroom. *Canadian Teachers' Federation*.
- [5] Fetylyana Nor Pazilah, Harwati Hashim \*, Melor Md. Yunus. Using Technology in ESL Classroom: Highlights and Challenges. *Faculty of Education, Universiti Kebangsaan Malaysia, Selangor, Malaysia*
- [6] Khaled Suleiman Omer Abaker. Learning Language With Technology Out Of Classroom Self-Organized. ( *Journal of English Language Teaching and Applied Linguistics*) Volume 8, No. 1, January 2022 Page. 49-61
- [7] Atipat Boonmoh, Thidaporn Jumpakate and Sodsai Karpklon. Teachers' Perceptions and Experience in Using Technology for the Classroom. *Computer - Assisted Language Learning Electronic Journal(CALL-EJ)*, 22(1), 2021, 1-24
- [8] Gautam Kumar, Gulbir Singh, Vivek Bhatnagar 3\*, Rajeev Gupta, and Sushil Kumar Upadhyay. Outcome of Online Teaching-Learning over Traditional Education during Covid-19 Pandemic. Volume 9, No.5 September- October 2022 *International Journal of Advanced Trends in Computer Science and Engineering*.
- [9] Lan Li, Eric Worch, YuChun Zhou and Rhonda Aguiton. How and Why Digital Generation Teachers Use Technology in the Classroom: An Explanatory Sequential Mixed Methods Study. Volume 9 Number 2 Article 9. *International Journal for the Scholarship of Teaching and Learning*.