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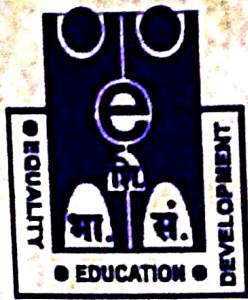
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Usage of Digital Media in Teaching and Learning

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Abstract:

In this age of globalization, technology is a vital factor to consider. Technological advancements will unquestionably have a greater impact on the education industry than any other. Traditional teaching is basically focused on textbooks, whereas modern teaching methods involve hands-on experience. Students' learning is meaningful when they are involved and use innovative technologies to explore more. Digital media plays a very significant role in teaching. National education policy 2020 also emphasizes the creation of virtual labs where students can practise theoretical knowledge and make course content available in different languages. In addition, it acknowledges the importance of technology in empowering teachers, bridging the language gap between teachers and students, constructing digital libraries, and assuring greater educational success. This is also useful for obtaining SDG 4 goals. During the pandemic, digital media was a tool that helped teachers with delivering lectures and evaluations. It made teaching more flexible and interesting. With the help of digital media, students can explore knowledge in various fields. It includes various software, web pages, digital videos, electronic documents, and electronic books. This also raises the curiosity level of students, which makes them more active. Teachers must be aware of digital tools so that they can be used easily in the classroom. This paper reflects on whether teachers know about various digital tools and their advantages; how they use digital tools in their subjects; and what types of problems they face while using such digital tools. A survey was administered to 100 teachers (who were teaching primary students to postgraduates) to study the usage of various digital tools in teaching and learning. The data was collected through a Google form (online). The study revealed that teachers use various digital tools during the teaching-learning process and find difficulty in using some tools. The lack of knowledge and skills to use such digital tools is a big barrier. Therefore, teachers must learn how to use such tools, and training should be given so that they can use such tools while teaching and make learning interesting. This study is beneficial to stakeholders, including administrators, students, teachers, parents, and developers of digital tools.

it is difficult to understand how this would fit into our current teaching procedures or how we might establish a commercial model around it. "How are your skills and talents changing over time?" "What can we do to help you satisfy these needs?" Not only certificate or degree as a reward for creative young."

Review of Related Studies

Verma Vaibhav and Verma Rishabh did a study on teachers in 2022. They found that putting digitalization into practice in the education field can lead to a bright future if practical problems are solved.

Singhal, S.K. et.al. (2021) conducted a study on the Impact of ICT-based tools on Teaching-A Case Study on the Learning System. The study sought to determine whether technology-enhanced learning tools are significantly beneficial in improving conceptual clarity and, as a result, student performance in class.

Ming-Hung Lin et.al. (2017) highlighted that digital learning had impact on learning motivation than traditional teaching, furthermore it had effect on learning outcomes.

Becta (2004) found that the reason of unavailability of ICT resources may be teachers don't have personal access, the hardware isn't good enough, the resources aren't set up right, or the software isn't right.

Objectives Of The Study

The following are the objectives of the study-

1. To study technical knowledge among the teachers.
2. To study the use of technical knowledge in teaching by teachers.
3. To study the problems faced while using technology in teaching.
4. To suggest the implementation of digital media in teaching.

Sample Selected For The Study

The sample is randomly selected from Gurugram, Haryana. The study has been conducted on 100 teachers.

Tools Employed For The Study

The following tool, used for collecting data:

1. Self-developed questionnaire on "Knowledge of teaching and technology"

Design Of The Study

The present study used a descriptive survey which aims to find out the knowledge of teaching and technology. Using an online Google form, the information was collected at random from 100 teachers.

Procedure

The data for the study has been collected from the questionnaire. A Google form was circulated to teachers which contained the following details related to teaching and technology:

1. Technology Knowledge
2. Content Knowledge
3. Pedagogical Knowledge
4. Knowledge of technological content and pedagogical knowledge

Introduction:

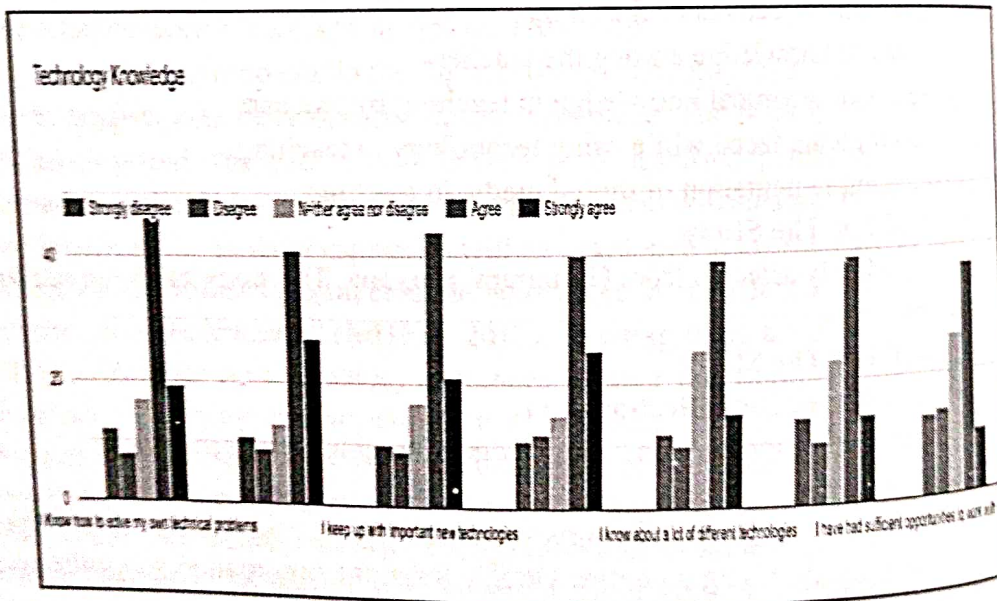
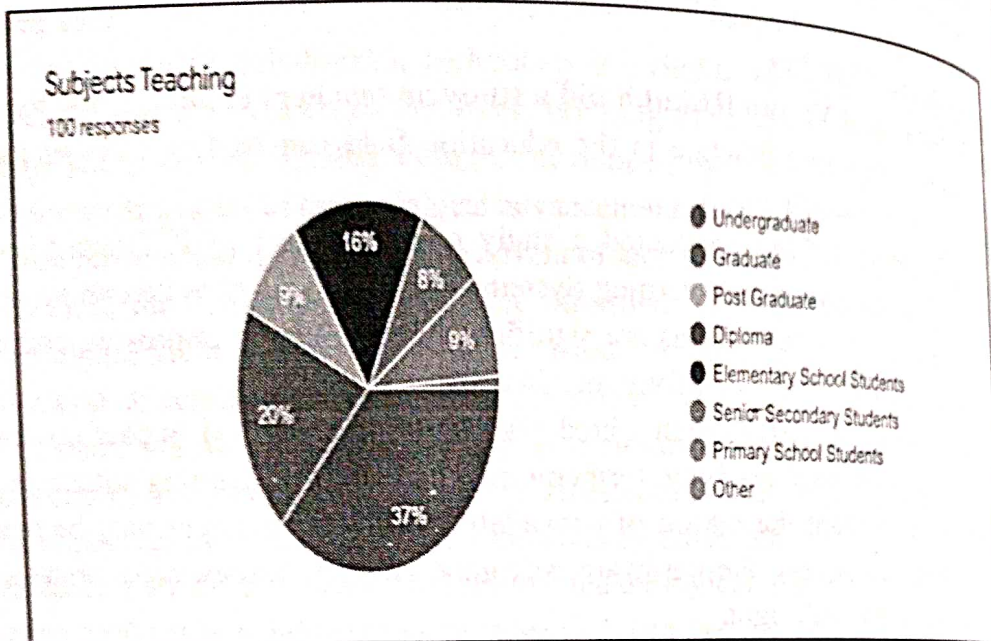
In the age of globalization, technology is a vital factor to consider. It has intruded more deeply into the domain of our lives, bringing the rest of the world closer to our doorstep. The notion of "Global Village," developed by Marshal McLuhan, has become more relevant as a result of technological advancement. It has resulted in a significant shift in the way information is received. The advent of technology has had a positive impact on every area of the human experience. The informed, efficient, and critical use of ICT requires digital literacy and competencies. These capabilities are significant due to the digitalization of content (Sharma, 2010). Education, which is one of the most important areas of one's life, has been transformed as a result of the explosion of technological breakthroughs. In a similar vein, technological advancements will unquestionably have a greater impact on the education industry than on any other. Since the advent of new media in the latter part of the twentieth century, technological innovation has flooded the education sector with a deluge of knowledge and data that has become overwhelming. In addition to expanding learning beyond the four walls of the classroom, it is making waves in the education sector thanks to its unique attributes.

Learning to innovate in the digital world is not easy. Education and training must evolve in tandem with developments in the workplace. The National Policy on Education (1986) emphasized "the need to use technology to improve quality of teaching. Teacher participation in the digital content development process will catalyze its broad-based usage in the classrooms". "Teacher capacities will be developed in instructional design, selection and critical evaluation of digital content, and strategies for effective use of digital content to enhance student learning" (MHRD, 2012). Exciting trials are already underway—but are they sufficient? As technology continues to alter the workplace, the need for new approaches to learning and development is becoming increasingly critical. There were many experts who were skeptical about the ability of education in a college or university to respond quickly enough in this situation. According to some, the role of a college degree will evolve as well as the workplace changes and that its value may even fall as a result of this transformation. Fortunately, both institutions and industry are fostering new ideas and developing new products. The participants discussed the characteristics, effectiveness and recent innovations. They also agreed that while some firms are willing to experiment with new methods of developing talent, navigating through the available possibilities can be difficult and time-consuming. The rapid growth of the gig economy makes it more difficult and more interesting to come up with new ideas.

Our higher-education system is more than two decades behind the times. An entirely new set of institutions and programmes must be established, with ownership and management shared equally by educators, businesspeople, and industry leaders. Lifelong learning challenges universities. While individual faculty members are excited.

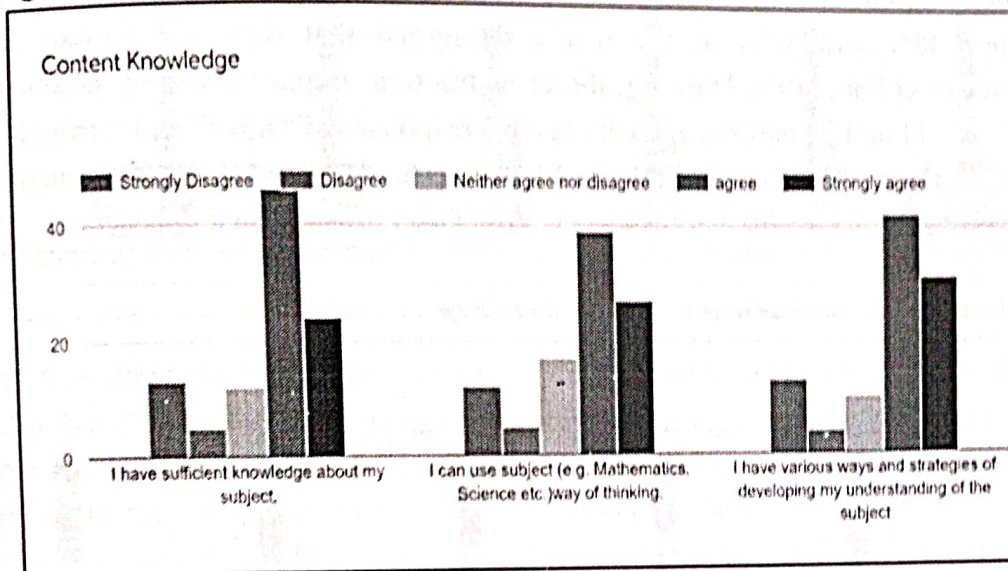
5. Technology, Pedagogy, and Content Knowledge Analysis and Interpretation of Data

The detailed analysis of collected data is as follows-

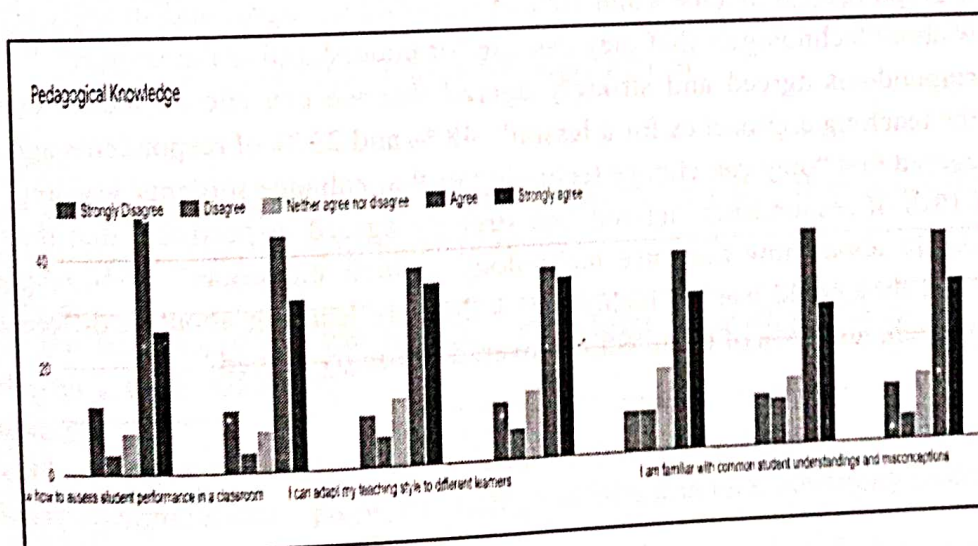


The above graph reveals the knowledge about technology among teachers. The responses among the teachers indicated that 46% of respondents "agreed that they know how to solve their own technical problems, whereas 19% strongly agreed". Approximately 41% of respondents agree that they can learn technology easily, whereas 27% strongly agree. It was found that 44% and 24% of respondents agreed and strongly agreed that they keep up with important new technologies. The graph indicated that 40% and 25% of teachers agree and strongly agree that they frequently use technology. 39% of respondents agree that they know about a lot of different technologies, and 15% of respondents strongly

agree with it. The graph indicated that 39% and 14% of respondents agreed and strongly agreed that they have technical skills and need to use technology. It was indicated that “37% of teachers agreed that they have had sufficient opportunities to work with different technologies, whereas 10% of respondents strongly agreed with it”.

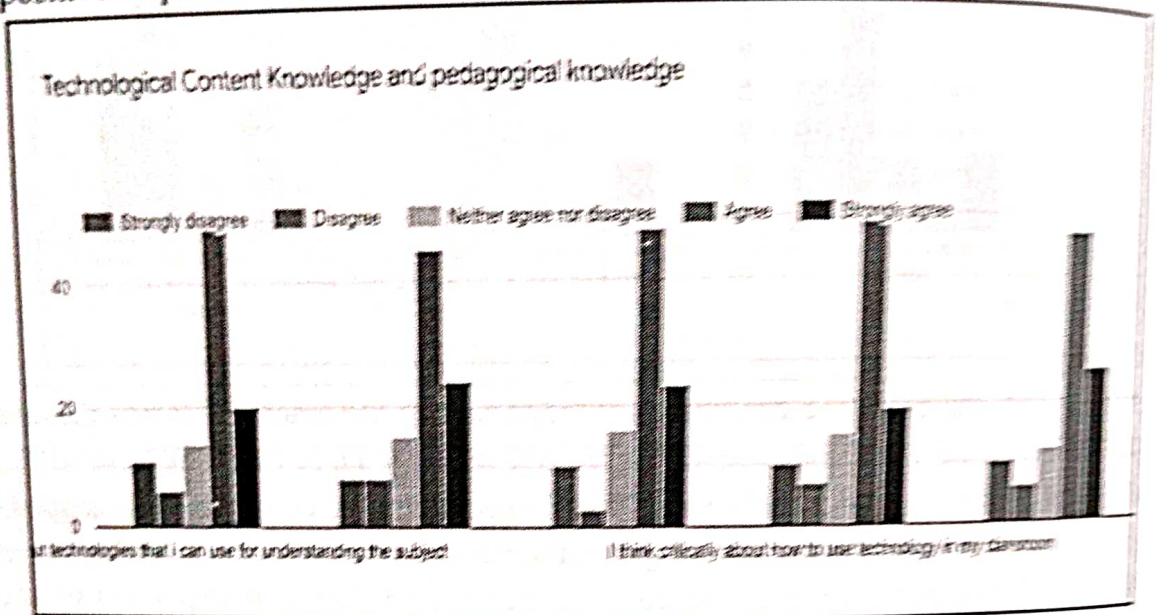


The above graph indicates the content knowledge among the teachers. It was discovered that (46 and 26 percent) of respondents “agree and strongly agree that they have sufficient knowledge about their subject. 39% and 27% of respondents agreed or strongly agreed that they can think in terms of subjects” (e.g., mathematics, science, etc.). It was discovered that (42 and 35 percent) of teachers agreed that they have different methods and strategies for developing subject understanding.

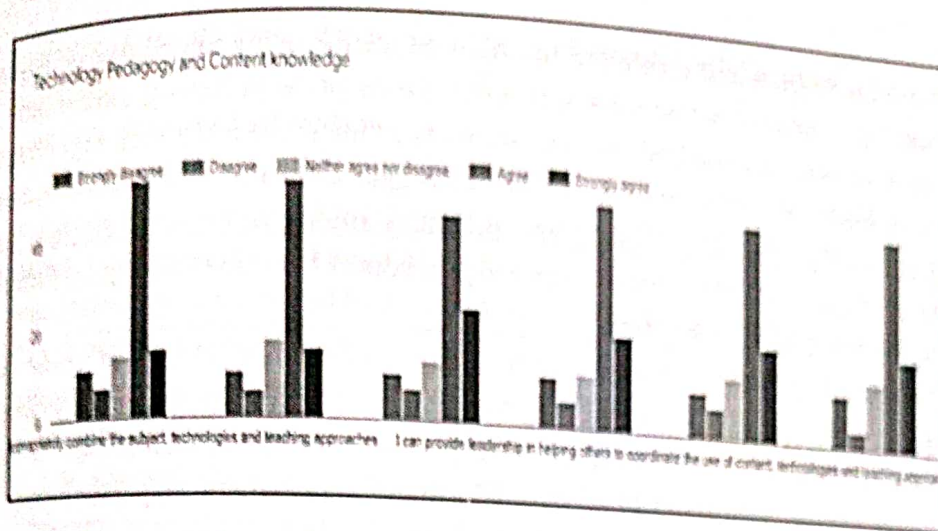


This graph revealed the pedagogical knowledge among the teachers. It was found that 48% of respondents agreed, with 27% strongly agreeing, that they were aware about how students performance is evaluated. Also, 44% of teachers gave responses as “agreeing, and 32% strongly agreed that they can adapt teaching based upon what students

currently understand or do not understand". It was also revealed that (37 and 34 percent of teachers who responded "agreed" and "strongly agreed" on the adaptation of teaching style to different levels of learners. Whereas 36% and 34% of teachers, respectively, agreed and strongly agreed that they can evaluate students' learning through different techniques. 38% and 30% of the teachers" agreed that they use various teaching approaches as collaborative learning, direct instruction, inquiry learning, problem-based learning", etc. 41 and 27 percent of teachers gave responses of "agree" and "strongly agree" about where they are doing correctly and incorrectly. 40% and 31% of the people who gave positive responses said that they knew how to set up and run a classroom.



The above graph reveals that 49% and 20% of respondents "agree and strongly agree that they know about technologies that they can use for understanding the subject". 48% and 24% of respondents agreed and strongly agreed that we can choose technologies that enhance the teaching approaches for a lesson". 48 % and 23 % of respondents agreed and strongly agreed that "they can choose technologies that enhance students' learning". Also, 49% and 19% of respondents "agreed and strongly agreed respectively that they would think critically about how they use technology in their classroom". 47% respondents "agreed" that they could use the technologies they are learning about in different ways when they teach, and 25% of those who answered "strongly agreed".



This graph is about teaching pedagogy and content knowledge among teachers. The graph indicated that 53% of the teachers gave a response of "agree that they can teach lessons that appropriately combine the subject, technologies, and teaching approaches, with 15% strongly agreeing". Approximately 52% of teachers opted to "agree that they can teach lessons effectively when they combine literacy, technology, and teaching approaches, while 15% strongly agreed". 45% agreed that they can choose "technologies to use in their classroom that improve what they teach, how they teach, and what students learn, while 25% strongly agreed". 50% of those who agreed that "they can use strategies that combine content, technologies, and teaching methods that they have learned and are familiar with, and 21% strongly agreed". It was further indicated that 48 and 21 percent of teachers' selected responses "agree and strongly agree that they can provide leadership in helping others to coordinate the use of content, technologies, and teaching approaches in the classroom". Also, 48% of those who agreed that they could use technology to improve the content of their lessons, and 21% of them "strongly agreed".

Findings:

Objective 1:

Majority of the teachers (65%) have technical knowledge and they themselves solve their technical problems. They learn technology easily.

Objective 2:

Most of the teachers (65%) use technical knowledge in teaching. They use different technologies in their classroom.

Objective 3:

The problems faced by teachers are related to internet, e-content, cost of e-content, insufficient equipment like laptops, technological infrastructure, electricity problems etc.

Objective 4:

The suggestions are as follows:

1. Innovation and experimentation in use of media in education:

Using technology as a catalyst for innovation. As students develop in their education, officials, educators, faculty, families, and students themselves must

collaborate to plan and create the future of education using innovative pedagogy and technology. Several schools have recently taken pride in having classrooms where innovative teaching methods engage students in interactive learning experiences that address real-world concerns. However, the bigger challenge is the massive change in innovation that impacts thinking and practices among learners. Changing practices entails not only modifying structures and procedures but also fostering an entirely new culture among all stakeholders.

Technology advancement and the digital revolution must not come at their expense. We cannot allow the digital divide to grow as technology improves; innovation will be worthless if this gap persists. However, technology is enabling pupils to access instructional materials in many areas where they previously would not have been able to.

2. **The Future of Learning: Every Learner Everywhere, Any Time:**

How technology is breaking down barriers to digital learning Technology can assist all students, but it will need a widespread shift in mindset and behavior. Unicef reported a year ago that due to school closures in response to COVID-19, more than one billion children were at risk of falling behind academically (Unicef, 2021). Since then, educational institutions have evolved, installing technology that allows teachers and students to communicate outside of the classroom, increasing positive influence technology has had on education over the last few decades. With the reopening of schools, educational institutions are building on the digital foundations that have already been set, assisting in the resolution of concerns identified in the UNICEF report. Home-based learning is discouraged when there is a lack of resources like personal computers, laptops, etc., and access to learning materials.

3. **Connectivity and engagement:**

All stakeholders around the globe showed tremendous enthusiasm and adaptability to technology as they transitioned to remote learning. Technology enabled students and instructors to stay connected, engaged, and motivated during this transition. Engagement tools that expand the classroom outside of a physical place, videos, animations, multimedia, and game-based learning are some of the more sophisticated collaborative tools. Digital learning materials can be provided, and technologies such as Microsoft Teams, Zoom, Google Classroom, etc. can be used in mass to communicate.

As physical participation is shifting towards hybrid learning, therefore, it is critical to guarantee that the sense of belongingness and connectedness that is evident in physical participation is maintained. Students now have access to a wide range of digital sources and applications that help learners learn at their own pace. By addressing a variety of demands, accessible technologies as a whole are also assisting students with impairments in reaching their full potential. When a creative effort is put into a remote learning environment, the possibilities for learning are

endless. Using the best edtech, teaching can be made to fit the needs of each individual student.

4. **Learner-centered education:**

Educators are wrapping learning environments around the interests of students by re-envisioning learning spaces—not only by shifting chairs and tables, but also by using numerous physical and virtual locations in and outside of schools. The learning experience can be tailored to the needs of a specific child, with the possibility to alter future classes based on how they interact with it. The classroom can be interactive and interesting when students are engaged in different activities.

5. **Technology in education:**

In a world where instructors are stretched thin, it can operate as a force multiplier. Teachers who use resources to guide their views and plans are better able to respond to challenges, develop new teaching strategies, and improve their skills instantaneously. This data-driven classroom benefits more than just kids. In a world where instructors are increasingly stretched thin, technology can operate as a force multiplier. Teachers can now communicate with students more efficiently and effectively using various tools and apps such as group chats, video meetings, voting, and document sharing. For example, to improve reading fluency, which works in multiple languages, and technology helps teachers to give insight as they assess recordings of students' readings to offer further improvements.

6. **Usage of social media in education:**

When students work, upcoming events and their achievements can be circulated on websites to promote the event with the help of digital tools. Teachers can use various blogs and share them with their students to develop critical thinking skills. Social media is considered an effective tool to share knowledge among learners, such as WhatsApp, Telegram, Facebook, etc. A knowledgeable and experienced teacher can give guidance to their students so that they learn and get in touch with recent advancements in the subject and lead to digital citizenship among them.

Conclusion:

The use of digital media is growing day by day, and young learners are using various media while learning all over the world. Young people have grown up in a world filled with digital images, messages, symbols, and music, which has penetrated their lives (Al Jenaibi, Badreya). In today's classroom, technology is critical to student achievement. Students and professors should both receive training in order to be able to use a variety of technologies while imparting knowledge in the classroom, in order to support digital learning in the classroom. It adds to the overall interest of the educational atmosphere. Bloggers and educators must be encouraged to develop blogs and share knowledge across a variety of media. Incentives should be provided to promote blended learning and flipped classes. Technology should be promoted among educators at all levels, including high schools, colleges, and universities, to facilitate communication with students and parents. In situations where a teacher employed multiple technologies and customized during

classroom communication, such as delivering lectures, preparing content, mind mapping, evaluation, etc., students showed good responses and took an interest in the subject (Wahid L.). The use of digital media while teaching has shown a positive effect on the students' engagement in learning and achievement. In order to cultivate students' intellectual abilities, the higher education authorities should provide them with a platform to do so (Ansari et.al. 2020).

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