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Issues and Challenges of Integrating Technology in Teaching and Learning Among Teachers in National Type Tamil School (NTTS)

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Abstract

The integration of technology in teaching and learning is a crucial cornerstone in the education world to produce competent individuals in the 21st century. Teachers play a key role in contributing to the development of technologically proficient individuals in the field of IT. However, it is found that there is a lack of integration of technology in teaching and learning mainly because teachers face various challenges in implementing technology in pedagogy. Hence, this study aims to discover teachers' challenges and issues in integrating technology in the National Type Tamil School (NNTS)'s classroom. This study adopts a quantitative research approach using a questionnaire. A total of 31 NTTS teachers from across the country participated in the study. Descriptive statistics were used to analyze the demographic characteristics of the respondents and the challenges faced by the NTTS teachers. The results of the study indicate that the level of teachers' skills and knowledge in technology is very high. However, the readiness of students and support from Parent-Teacher Association and Non-Governmental Organizations were found to be unsatisfactory. This study also suggests that school administration, Parents Teacher's Association (PTA), and the Ministry of Education should focus on the challenges faced by teachers and take various measures such as providing professional development training and facilities such as adequate access to the internet and computer facilities for both teachers and students.

Keywords: challenges, integration, technology, Tamil school, teacher

1. Introduction

Information and Communication Technology commonly known as ICT refers to the combination of tools and technological resources used to manipulate and connect with information (Kware, 2015). According to Dictionary 4th Edition, ICT encompasses the acquisition, storage, processing, and dissemination of information through computer and information technology. Information technology consists of three main components: computers, communication, and peripherals (Norasiah, 2009). These three components function together to effectively channel information to organizations for increased productivity. The first component is utilized for information storage, the second component manipulates received information and processes it into various forms, and the third component facilitates communication by transmitting information from sources to receivers. The integration of technology in Teaching and Learning serves as a primary platform to create a positive climate, particularly among teachers and students.

The formation of quality human capital, in line with the rapid development of information technology, is crucial for the long-term economic development of a country. Schultz's theory in 1961 highlighted the significant increase in investment value in the United States due to the utilization of knowledgeable human capital compared to a focus solely on physical human capital (Schultz, 1971). A quality education system ensures the socioeconomic well-being of a nation and sets an example for other countries. Many IT experts from India have received a warm reception and lucrative job offers from developed countries, including Malaysia.

The Malaysian government agrees with the statement that integrating technology ensures quality education and drives the country's economy. In line with this, the government has introduced the Malaysia Education Development Plan (2013-2025), focusing on Shift 7, which emphasizes leveraging Information and Communication Technology (ICT) to enhance the quality of learning and produce skilled and competitive younger generations capable of handling the global international market. International-standard human capital can be realized through the full integration of technology in teaching and learning. The government has allocated RM 6 billion specifically for ICT in educational initiatives under the 11th Malaysia Plan (Ministry of Education, 2015).

The integration of technology in pedagogy has effective implications and contributes to the smooth progress of education (Noraza & Ngau, 2009). Technology-infused education necessitates a transformative process in curriculum, strategies, methods, and learning materials (Zulkifli et al., 2020). This statement is supported by Spector (2020), who states that technology integration in teaching and learning processes can enhance student performance in a particular field.

1.1 Problem Statement

Educators play a crucial role in incorporating technology into teaching and learning activities to help the students understand the concepts more concretely. However, it has been discovered that there is a lack of integration of technology in teaching and learning. There are currently few studies that provide a full grasp of how teachers perceive ICT implementation

in this environment. Furthermore, it is unclear to what extent teachers are capable of efficiently and comprehensively incorporating technology into their teaching and learning process.

1.2 Purpose of study

The purpose of this study is to identify the challenges and difficulties teachers face when implementing technology in the classrooms of National Type Tamil Schools (NTTS). The researchers aim to gain insight into how teachers view the difficulties in incorporating technology into teaching and learning in the NTTS environment. In order to accomplish this, the study randomly selects NTTS educators from different states and assesses their levels of knowledge, the support they receive from their institutions, and the preparedness of their students to embrace technology in the teaching and learning process.

1.3 Research Objectives

The following are the objectives of the study:

a) to identify the issues and challenges faced by National Type Tamil School (NTTS). teachers from various states in integrating technology into pedagogy.

b) to evaluate how those challenges affect the teaching and learning process.

c) to create a comprehensive list of recommendations for NTTS administrators, policymakers, and educators on how to foster a technology-friendly atmosphere, raise teacher readiness, and improve the general standard of teaching and learning using technology.

1.4 Research Questions

This study is guided by the following research questions:

a) What are the main challenges and obstacles faced by teachers in NTTS when trying to incorporate technology into their teaching methods?

b) How do those challenges and issues affect the teaching and learning process?

c) What recommendations can be identified for enhancing technology integration in teaching and learning within National Type Tamil Schools on using technology for effective teaching and learning?

1.5 Significance of Study

The findings also will contribute to addressing the issues and the challenges faced by the educators all over Malaysia and also provide implications for the Ministry of Education (MOE), State Education Department, PTA, and NGOs to upgrade existing technological facilities and provide appropriate professional development training for teachers in the future. In another way, it has the potential to significantly contribute to the improvement of education within NTTS. This study also enables the teachers and the students would benefit. This enables a better comprehension of the actual situation in NTTS schools in relation to the

resources available and the limitations instructors encounter when integrating ICT into teaching.

2. Literature Review

A set of instructional abilities known as "21st-century teaching skills" are necessary for educators to succeed in the current digital age. The Ministry of Education's ability to implement the country's educational transformation, as outlined in the Malaysia Education Development Plan 2013–2025, depends on having brave and excellent teachers (Ying, L. S., & Iksan, Z. H. (2019). Computers, smartphones, and internet networks are not only playing a role in delivering information but also serving as mediums for communication between teachers and students during the implementation of remote learning (PDPR) throughout Malaysia amidst the Covid-19 pandemic. Teaching and learning (T&L) have transitioned into the virtual realm, primarily utilizing applications such as Google Classroom. Telecommunication tools have become the primary platform for T&L. Silahuddin (2015) argues that in order to improve a nation's educational quality, innovations that are directly tied to the learning process as well as features of technology development applied in education and the educational system in place in each school are essential.

This pandemic has raised awareness and changed the perspectives of teachers, parents, and students who previously believed in traditional approaches, shifting towards technology-based approaches. Many teachers have started to explore and adopt new applications such as Live Worksheets, Quizziz, Kahoot, Google Classroom, and others to conduct the lesson. According to Thannimalai & Baloh (2021), students learn in real-time using stable internet access devices, while some students have engaged in offline learning by downloading assignments using computers and smartphones and completing them within the given timeframe. According to Edeh (2019), the majority of respondents agree that the integration of technology in T&L enhances interactivity between teachers and students. Nalini and Norazah (2021) state that learning becomes more productive with the use of technological media such as videos, audio techniques, and animations, creating a more meaningful and enjoyable learning environment.

The teaching and learning process becomes increasingly challenging due to the lack of readiness among the teachers (Saifudin & Hamzah (2021). This assertion draws attention to a crucial problem in the world of education. It implies that educators may encounter increasing challenges in supporting the learning process for teachers. Teachers are less likely to use virtual learning environments because they lack the necessary expertise and abilities to manage technology-based teaching and learning (PdPR). It is clearly supported by the study of Shahfiezul & Fariza (2017) which found that this virtual learning medium is less embraced among teachers due to their lack of knowledge and skills in handling technology-based teaching and learning (PdPR). The integration of innovative teaching methods is impeded by teachers' lack of technical literacy and abilities, which could potentially negatively impact students' educational experiences.

Apart from this, there were issues discussed regarding the challenges to integrating technology among teachers in T&L as shown in Figure 1. The issues are level of knowledge, organizational support, and readiness of the students.

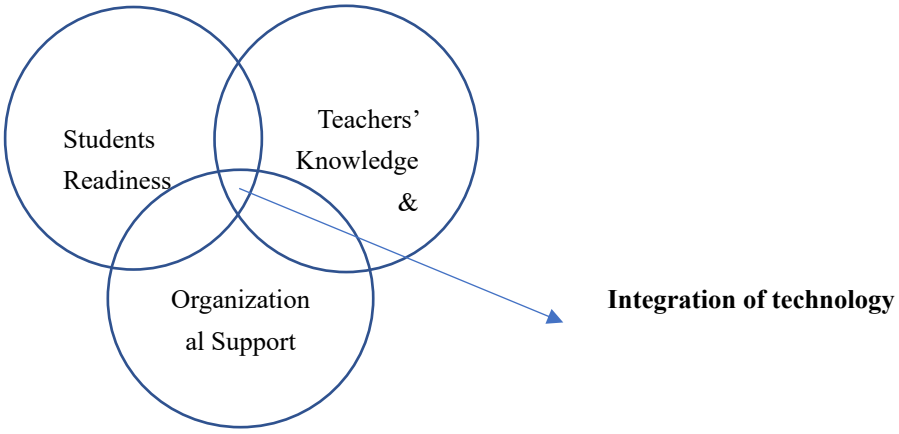

Figure 1. Challenges to Integrate Technology among Teachers in T&L

The first challenge is the level of knowledge of teachers. According to Shanmugan & Balakrishnan (2018), teachers need to have knowledge not only in the use of technology but also in handling software and hardware. Therefore, teachers need to adapt to changes and developments in current technology related to pedagogy, as well as those unrelated to teaching. Teachers need to adapt to the changing landscape of education and employ teaching methods that are suitable for students' needs to facilitate their understanding of the topics taught (Iywon & Nasri, 2020). A study by Norhiza (2016) showed that many teachers do not use computers in PDP, and this statement is supported by Suzlina Hilwani (2015), who stated that Malay language teachers with high knowledge do not use technological tools. An educator needs to have knowledge and skills in applying technology in teaching to foster deeper learning understanding. Teachers also need to be prepared and equipped to use technology regardless of the circumstances.

Subsequently, teachers require strong support from the Ministry of Education (MOE), State Education Department (JPN), District Education Office, Parent-Teacher Association (PTA), and NGOs in integrating technology. The PTA needs to collaborate with school administrators and NGOs to equip schools with technology-infused infrastructure. According to Aslan et al. (2016), school administrators need to manage professional development training to enhance teachers' skills and knowledge in ICT for effective T&L. The government needs to improve the education system by providing equal technological facilities in both urban and rural areas (Iywon & Nasri, 2020). Wahid (2015) also states that the PTA needs to play a role in creating a harmonious atmosphere. The PTA needs to advocate for the welfare of students, teachers, and schools in preserving education. In 2020, the YTL Foundation provided free smartphones to B40 students to facilitate remote learning.

Next, students' readiness also needs to be emphasized in integrating technology into

pedagogy. A study conducted by Kavisha (2021) found that students' readiness in using the Google Classroom application was at a moderate level. Teachers must allocate time to guide students using applications such as Google Classroom to facilitate learning activities. During the home-based learning implemented from 2020 to 2021, the Google Classroom application served as the main medium for pedagogy. The MOE has urged every school and teacher to conduct online learning using Google Classroom starting from April 1, 2020, to prevent learning gaps (Fatin, 2020). Teachers face challenges in using this application with students, as most students do not have internet access or computers and smartphones to attend online classes.

3. Methodology

According to Mishra & Koehler (2006), quality teaching and learning can be achieved through the integration of three components: pedagogy, content, and technology. Teachers must integrate technology based on these three components, encompassing seven technology-related elements. According to Shanmugan & Balakrishnan (2018), integrating Technological Pedagogical Content Knowledge (TPACK) in pedagogy makes the process more enjoyable and meaningful, and it enhances student achievement and transforms teachers' perspectives on integration. Various studies integrating technology in learning have demonstrated improved student.

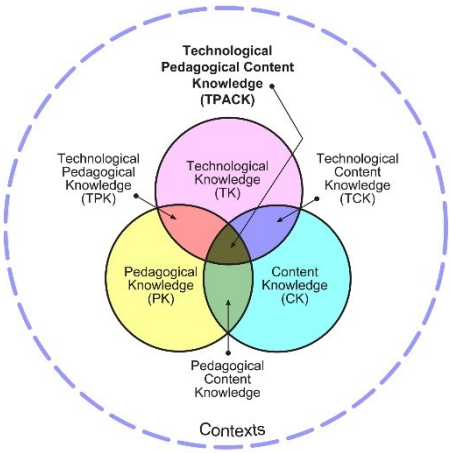

Figure 2. Integration of TPACK in Teaching

3.1 Research Design

This study utilized quantitative data and involved descriptive analysis. The researchers selected a random sample using convenience sampling, which consisted of new and experienced NTTS school teachers. A total 31 respondents who were teaching at Tamil National Type Schools from several states participated in the survey.

3.2 Research Instrument

A questionnaire was used to collect the responses from respondents. The questionnaire was adapted from the McKenzie questionnaire from 1999 and translated from English to Malay, consisting of 5 sections to collect demographic data as well as data on teachers' levels of knowledge, organizational support, and student readiness in integrating technology in teaching and learning activities. The questionnaire utilized a five-point Likert scale and comprised four sections: Section A covered demographic information, Section B assessed teachers' levels of knowledge and skills, Section C evaluated teachers' readiness, Section D examined organizational support, and the final section focused on student readiness from teachers' perceptions.

The school principal and assistant principal reviewed and validated the questionnaire to ensure clarity and prevent confusion. To collect the data, the questionnaire was prepared using the Google Forms application. The Google Forms link was distributed individually and in groups via WhatsApp.

Data were analyzed using the SPSS system to determine the levels of knowledge, readiness, organizational support, and student readiness based on mean and standard deviation. Findings were presented using percentage and frequency in the form of a table.

3.3 Validity and Reliability of the Instrument

The instrument used in the study was sent to the school principal and assistant principal for review and validation to avoid any confusion. This process was also aimed at ensuring the instrument's high validity. Table 1 below shows the reliability values of the questionnaire instrument used for the brief survey. Cronbach's Alpha test was employed to calculate the reliability and validity of each item provided. The table shows that item 1st indicates excellence, 2nd item indicates good, and 3rd item indicates moderate. The Cronbach's Alpha value indicates that all items can be used because of their high value.

Table 1. Validity and Reliability of Instrument

Aspects	Cronbach Alpha	No Of Items	Description
Skills and Knowledge and Readiness of Teachers	0.915	5	Excellent
Teachers' Readiness	0.594	5	Moderate
Organizational Support	0.813	4	Good
Pupils Readiness	0.838	5	Good

4. Results and Discussion

4.1 Demographic Characteristics

The demographic information obtained in this study is in terms of gender, race, academic

year, course of study and internet accessibility as shown in Table 2.

Table 2. Demographic Analysis of the Respondents

Demography characteristic		Frequency	Percentage (%)
Gender			
Male		8	25.8
Female		23	75.2
	Total	31	100
Teaching experience			
6-10 years		7	22.6
11-15 years		6	19.4
16-20 years		11	35.5
>20 years		7	22.6
	Total	31	100
States			
Johor		3	9.7
Kedah		4	12.9
Negeri Sembilan		2	6.5
Pahang		2	6.5
Perak		3	9.7
Selangor		17	54.8
	Total	31	100
Education qualifications			
Degree		22	71.0
Master		9	29.0
	Total	31	100

Table 2 shows demographic data for teacher respondents. For the frequency of male teachers, it indicates 8, while female teachers are 23, the total is 87.1%. The data shows that 87.1% of teachers began teaching in the 2000s, while 3.2% were in the 1980s, and 9.7% were in the 1990s. The highest percentage for teaching experience is 35.5%, with a frequency of 11 teachers. Only 22.6%, which is 7 teachers, have teaching experience between 6-10 years.

From this, we can conclude that all respondents are experienced teachers. The data also shows that many teachers are from Selangor state, which is 54.8%. All respondents have the highest academic qualification at 100%, and 9 teachers, which is 29.0%, have a master's degree. The data indicates that many respondents have more than 10 years of teaching experience, and all respondents are graduates.

4.2 Levels of Skills and Knowledge of Teachers

Table 3 illustrates the level of skills and knowledge of teachers in integrating technology in teaching and learning.

Table 3. Level of Skills and Knowledge in Integrating Technology in T&L

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
B1	I always strive to stay up-to-date with new technologies related to teaching.	2 (6.5%)	4 (12.9%)	5 (16.1%)	13 (41.9%)	7 (22.6%)
B2	I can use PowerPoint, videos, Word, and Google Classroom	3 (9.7%)	4 (12.9%)	4 (12.9%)	13 (41.9%)	7 (22.6%)
B3	I can troubleshoot and maintain malfunctioning computers.	5 (6.5%)	9 (16.1%)	11 (19.4%)	4 (41.9%)	2 (16.1%)
B4	I can use tools such as GC, Paddle, Kahoot, Quizizz, Wordwall, and Live worksheet to create assignments.	2 (6.5%)	5 (16.1%)	6 (19.4%)	13 (41.9%)	5 (6.1%)
B5	I am able to solve problems related to applications.	4 (12.9%)	9 (29.0%)	10 (32.3%)	4 (12.9%)	9 (29.0%)

Referring to table above, Item B1 indicates that 64.5% of respondents agree and strongly agree that teachers constantly equip themselves with new technologies related to PDP. Similarly, 64.5% agree that teachers are skilled in using PowerPoint, videos, and Google Classroom. Only 19.4% of teachers agree that they are able to maintain computers. Therefore, this data implies that schools, as well as the Ministry of Education (KPM), State Education Departments (JPN), or District Education Offices (PPD), should organize computer maintenance workshops for teachers. Additionally, 74.2% of teachers face challenges in solving application-related problems. According to Vinathan, T. A. (2016), the lack of guidance on advanced or high-tech tools can also be a burden and problem for teachers who are not skilled in using ICT. To address these challenges, teachers need to undergo professional development training. Mahmud, R., & Ismail, M. A. (2010) also emphasize it is necessary to identify teachers, particularly those who are older and typically have more teaching experience, and offer them specialized training programs in the form of workshops and various forms of ICT courses. According to Farooq, M. U. (2016), educators must be adequately equipped with knowledge and skills in utilizing ICT because, in the future, students might attend school with laptops instead of traditional textbooks. Jamil et al. (2012) proposed Continuous Professional Development (CPD) and in-service training (In-Service Education and Training, In-SeT) are crucial elements for upholding teacher professionalism in Malaysia. Overall, this data provides an overview that teachers' skills and knowledge are at

a high level.

4.3 Teacher's Readiness

Table 4 illustrates the teacher's readiness in integrating technology in teaching and learning.

Table 4. Teachers' Readiness in Integrating Technology in T&L

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
C1	I always integrate technology.	2 (6.5%)	5 (16.1%)	7 (22.6%)	13 (41.9%)	4 (41.9%)
C2	I use technology resources only during observation	3 (9.7%)	5 (16.1%)	6 (19.4%)	15 (48.4%)	2 (6.5%)
C3	I frequently browse the internet to gather information for teaching activities purposes	0 (0.0%)	6 (19.4%)	4 (41.9%)	12 (38.7%)	9 (29.0%)
C4	I seldom use technology resources due to time constraints. I frequently assign tasks to students through GC (Google Classroom).	3 (9.7%)	1 (3.2%)	6 (19.4%)	21 (67.7%)	0 (0.0%)
C5	I frequently assign tasks to students through (Google Classroom).	1 (3.2%)	6 (19.4%)	6 (19.4%)	17 (54.8%)	1 (3.2%)

The data above shows the level of teacher readiness in integrating technology in T&L. 54.8% of teachers agree and strongly agree that teachers integrate technology in T&L. Additionally, 67.7% of teachers frequently browse the internet to obtain information for T&L purposes. 58.8% of teachers also frequently assign tasks through Google Classroom to students. This indicates that half of the 31 teachers are always ready to integrate technology in teaching and learning activities. However, 67.7% of teachers agree that they rarely use technological resources due to time constraints. According to Shamsuddin et al. (2021), many respondents are unable to integrate the VLE Frog platform due to multiple tasks and the limited time allocated for weekly lessons as determined by the Ministry of Education Malaysia. Time allocation and workload pose challenges for teachers to integrate technology in T&L. According to Jafar et al. (2022), a survey was conducted by National Union of Teaching Profession (NUTP) among 9,328 school staff across the nation revealed that 69% of the respondents were working in stressful environments. Von der Embse, N., & Mankin (2021) said the stress experienced by teachers can have a direct impact on teaching and learning activities. Some teachers also believe that the traditional "chalk and talk" approach is easier and allows for quick information delivery. According to research conducted by Joseph et al. (2021), a portion of public school teachers show little interest in acquiring new technology. 4.8% of teachers also agree that teachers only use technology during observations by

administrators, State Education Departments or District Education Offices. In this regard, administrators must ensure that teachers do not integrate technology solely for performance evaluation purposes, but rather, technology integration should become a teacher culture to develop intellectually and rational students.

4.4 Organizational Support

Table 5 Illustrates the readiness of students in integrating technology in T&L.

Table 5. Organizational Support to Integrate Technology in T&L

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
D1	The school provides internet facilities.	5 (16.1%)	12 (38.7%)	2 (6.5%)	8 (25.8%)	4 (41.9%)
D2	The school provides an adequate number of computers for student use.	4 (12.9%)	16 (51.6%)	4 (41.9%)	5 (16.1%)	2 (6.5%)
D3	The PIBG (Parent-Teacher Association) always assists in providing technological equipment to students.	4 (12.9%)	11 (35.5%)	5 (16.1%)	9 (29.0%)	2 (6.5%)
D4	Receiving support from NGOs in purchasing technological equipment for T&L purposes.	4 (12.9%)	11 (35.5%)	7 (22.6%)	7 (22.6%)	2 (6.5%)

Based on the data, only three organizations have been selected for this study. 61.3% of teachers disagree or partially disagree that the school provides internet facilities. Additionally, 77.4% of teachers disagree or partially disagree that the number of computers available for student use is sufficient in the school. 64.5% of teachers also do not support statement D3, where the Parent-Teacher Association (PTA) consistently assists in providing computers or smartphones to students. Teachers disagree or partially disagree with statement D4, which states receiving support from non-governmental organizations (NGOs) in purchasing technological equipment for T&L purposes. Not all schools can be equipped with facilities such as LCD projectors and computer labs for the use of the school community (Rosnaini Mahmud & Mohd Arif Ismail, 2008).

Based on this data, the researcher finds that organizational support, whether from schools, PIBG, or NGOs, is at a low level. Zhao et al. (2002) propose that the effective incorporation

of technology in educational environments is dependent on the interdependent elements of educators, educational institutions, and technology. This poses a significant challenge for teachers to implement technology-based T&L, particularly in rural and remote areas.

4.5 Students' Readiness

Table 6 illustrates the organizational support for teachers to integrate technology in T&L.

Table 6. Readiness of Students in Integrating Technology in T&L

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
E1	Student has a smartphone or computer at home to complete the classroom task.	2 (6.5%)	17 (54.8%)	5 (16.1%)	7 (22.6%)	0 (0.0%)
E2	Student can operate a computer or laptop without assistance	2 (6.5%)	6 (19.4%)	2 (6.5%)	11 (35.5%)	10 (32.2%)
E3	Student knows how to use Word or PowerPoint.	0 (0.0%)	5 (16.1%)	5 (16.1%)	13 (41.9%)	8 (25.8%)
E4	The student consistently creates and submits assignments through GC	0 (0.0%)	10 (32.2%)	10 (32.2%)	7 (22.6%)	4 (12.9%)
E5	Student has internet connectivity at home.	0 (0.0%)	8 (25.8%)	14 (16.1%)	7 (22.6%)	8 (25.8%)

Referring to the table above, 77.4% of teachers disagree or partially disagree with statement E1, which states that students have smartphones or computers at home to complete assignments in Google Classroom. 67.7% of teachers agree individually that students can use laptops without assistance and can handle word processing or PowerPoint to complete tasks. Although students know how to use technology, they face challenges in accessing internet facilities to complete assignments. This statement is supported by E5, where 71% of teachers disagree or partially disagree. 64.5% of teachers also disagree or partially disagree that students always create and submit assignments through Google Classroom. Most students living in rural areas do not have internet facilities to complete tasks. According to Nurul Ain Zulkifli (2010), rural schools often face constraints such as a lack of facilities and infrastructure that are not as good as urban schools. They also have to share smartphones with their parents to complete assignments. UNICEF's study in 2020 reveals that 9 out of 10 children use mobile phones as tools for online teaching and learning, while 8 out of 10 children lack access to computers. This factor becomes a barrier for teachers to integrate technology in pedagogy. This statement is strongly supported by Tan, K. H., and Jong, B. (2021) studies, where students find it challenging to do homework that is assigned online due to the restricted internet connectivity in rural areas in Sarawak. Therefore, the government needs to take the initiative to provide free internet facilities and one computer per family to

the B40 group. Mohd Azizee has stated that teachers, in turn, need to consider how to overcome issues related to internet access, the absence of smart digital devices, and students' attitudes to ensure the smooth and effective continuation of online education (Bernama, 2020). Students and parents also need to be exposed to the use of Google Classroom and how to handle computers and complete assignments using word processing or PowerPoint applications.

5. Conclusion and Implication

The integration of technology in pedagogy can create meaningful learning experiences to develop a digitally literate and competitive generation in the era of globalization. Integrating technology into the classroom can help students have more profound and engaging learning experiences. Teachers can construct interactive and multimedia-rich classes that appeal to diverse learning styles, encouraging a greater comprehension of the subject matter, by employing digital technologies. Teachers must overcome challenges and constraints in integrating technology in pedagogy. Teachers should be creative and innovative in technology integration. It is critical to provide pupils with digital literacy skills in a society characterized by globalization and rapid technological innovation. This involves the capacity to efficiently use technology, evaluate online material critically, and communicate in a digital world. Such abilities are essential for kids to compete and succeed in today's global environment. The success of this generation in the future lies in the hands of every teacher. Every organization needs to take appropriate steps to overcome the challenges in technology integration. Not just educational institutions, but also PTAs, NGOs, and parents, must work together to aid teachers in integrating technology. This includes providing access to technology, professional development, and developing a culture that encourages educational innovation.

This study has implications for future research, focusing on addressing each challenge and proposing steps to overcome technology-related challenges. Future research should seek to identify specific obstacles that teachers encounter when adopting technology and to provide concrete methods and techniques for overcoming these challenges. This continuous research will aid in the refinement and improvement of technology integration into education.

In conclusion, integrating technology into the classroom is a challenging but very promising endeavor. In order to get the maximum benefits, obstacles must be overcome, educators must be encouraged to be creative and innovative, and educational institutions and teachers must work together.

6. Limitation of Study

This study does not include all types of schools in Malaysia; rather, it is limited to Tamil schools and exclusively targets a certain community. Future study on this topic needs to be prioritized.

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Authors contributions

Kanageswary Thumbarayan conceived and designed the study, collected, and organized the database, and performed the analysis. Dr. Fathiyah Mohd Kamaruzaman and Dr. Marlissa Omar co-wrote the manuscript, overlooked the writeup of the whole article, and contributed to manuscript revision. All authors read and approved the final manuscript.

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