An investigation of ICT skills among Tamil language teachers in primary schools and the adequacy of ICT facilities: A quantitative study

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ABSTRACT

This research delves into an examination of the ICT skills possessed by Tamil language teachers in primary schools and assesses the adequacy of ICT facilities available at the school level. In light of the ongoing transition from traditional teaching methods to information-based strategies, the Malaysian Ministry of Education has implemented the Malaysian Education Development Plan 2013-2025 to promote the integration of ICT among teachers. This study focuses specifically on Tamil language teachers, aiming to determine whether their ICT skills align with the available ICT resources in their respective schools. The investigation highlights various challenges faced by teachers, including limited budgets for ICT, hardware constraints, lack of English training to effectively utilize ICT, inadequate support, and insufficient time allocated for ICT-related activities. Conducted as a quantitative study, the research involved a sample of 60 Tamil teachers. The findings reveal that the ICT capability of Tamil language teachers stands at a moderate level, while the ICT facilities in their schools fall short of meeting their requirements. This underscores the correlation between teachers' interest in using ICT in their teaching practices and the availability of suitable facilities to support their endeavors. In conclusion, this study emphasizes the critical role played by ICT facilities in schools in facilitating the effective use of ICT-based teaching aids, enhancing the ICT skills of teachers, and promoting an environment conducive to effective teaching and learning. Consequently, the research strongly advocates for schools to provide adequate and appropriate ICT facilities to empower teachers in making optimal use of ICT in their teaching practices.

1. Introduction

To enhance student academic interest, the incorporation of technology is essential, given its significance as a societal tool and catalyst for progress (Vesudevan, 2021). In recent years, the Teaching and Facilitation Method (TnF) involving computer technology has been introduced. The integration of computers in educational settings began in the early 1980s with the aim of playing a pivotal role in shaping the education of future generations. Contemporary technologies offer diverse methods to elevate the quality of pedagogical practices and instructional delivery. Consequently, the Malaysian Ministry of Education (MOE) has implemented various curriculum changes. Empirical evidence indicates that the utilization of technology in schools has a positive impact on student outcomes (Ismail and Khalib, 2020).

As early as 1998, information technology was introduced as an optional subject in secondary schools, marking the commencement of applying Information and Communication Technology (ICT) in education, underscoring the MOE's commitment to this initiative (Ghafar, 2000). Subsequently, the ministry has undertaken several ICT-related programs, including a computer introduction program in 1986, a computer literacy project in 1992, a computer-aided learning project (PBK) in 1994, and an education network project in 1995. These programs have been implemented in primary and secondary schools, facilitating the widespread integration of ICT in education. Additionally, the government introduced the Bestari School concept in

1999, which emphasizes the comprehensive use of ICT in administrative, teaching, and facilitation aspects. Bestari Schools are institutions restructured to equip children with the necessary skills for the Information Age, achieved through the provision of ICT facilities and equipment, and the training of proficient staff and administrators.

Recognizing the pivotal role of ICT in children's educational development, the government has implemented various ICT programs and extended their reach to other national schools. The Malaysian Education Development Plan (2013-2025) outlines the Ministry's commitment to employing ICT to enhance learning quality nationwide. This strategic vision aims to cultivate a technologically adept workforce capable of creative and critical thinking, fully prepared to engage in the 21st-century global economy, thus establishing Malaysia as a leader in ICT on the international stage.

In the rapidly evolving landscape of ICT, teachers play a crucial role in adapting their approach to student learning. They no longer merely serve as primary sources of information and knowledge impartation in the classroom but assume the role of facilitators. Teachers must possess the skill to organize the vast pool of information from various sources into structured knowledge suitable for teaching. Proficiency in teaching methods empowers educators to efficiently utilize communication technologies such as CD-ROMs, electronic spreadsheets, compact discs, word processing, audio and video transmission, computer teleconferencing, and application software to facilitate information dissemination to students. By effectively utilizing these communication technologies, the teaching and facilitation process can be significantly enhanced.

Furthermore, the Malaysian Ministry of Education encourages educators to acquire the appropriate level of skills and knowledge in utilizing technology. Teachers play a pivotal role in integrating ICT during the instructional process, as it imparts a dynamic and proactive learning experience. The integration of ICT aims not only to deliver higher quality and more effective teaching but also to prepare students to meet the challenges of globalization through online learning advantages. The process of integrating ICT is an ongoing strategy that fully supports teaching, facilitation, and access to information resources.

In the current digital age, children are increasingly exposed to technology resources both at home and in their environment. They grow up in environments surrounded by digital technology, such as computer hardware, digital phones, digital watches, digital cameras, and virtual worlds. This exposure renders them familiar with and adept at using digital tools. Considering this context, it becomes imperative to effectively expose and guide children in the use of ICT through the efforts of teachers and parents. Accordingly, this study aims to assess the knowledge and skills of preschool teachers in utilizing ICT within the TnF process. The mastery of computer skills becomes indispensable for individuals aiming to engage positively, with a lack of anxiety, and a keen interest in utilizing computers. Teachers also bear the responsibility of evaluating and leveraging various computer applications to enhance the effectiveness of their teaching and work practices.

TNF is a process experienced by every individual. According to Razali et al. (2003), the teaching process is an activity that includes planning, implementation, evaluation, and feedback while the learning process is an activity that involves the mental, physical, or spiritual of a student. Both of these processes run smoothly with openness, reflectiveness, and objectivity among teachers and students. Learning will occur with changes in behavior, perception, thinking (thinking process and results), and affective (feelings, attitudes, and values). Teachers need to use various approaches, methods, techniques, and teaching strategies during the TNF process. For instance, Rahim and Mahmood (2020) suggested that teachers use an application for the better interest of the student to learn in class. These four concepts are closely related to each other even though they have different meanings. One of the approaches often used by teachers in the TNF process is an approach based on resources or materials. According to Ahmad et al. (2018), this approach emphasizes teaching aids (LA) used by teachers to facilitate students' understanding of teaching. Students admit the use of ICT during T&F Science is interesting because of ICT elements, stimulating interest and helping to learn (Shanmugam and Balakrishnan, 2019). This LA is divided into two, namely teaching materials and learning materials. Teaching materials mean materials used by teachers while learning materials mean materials prepared by teachers for students to use.

2. Literature review

Nowadays, in any 21st-century learning leveraging technology is an integral component (Zhong et al., 2022). 21st-century learning and teaching are very important for students in this era of globalization (Ponniah et al., 2018). Learning to use ICT as LA is said to be important in the R&D process. The use of ICT as LA in the field of education is not something new in Malaysia. The use of ICT has been introduced in Malaysia since the early 80s and in developed countries such as the United States since the 60s. The establishment of computer clubs in 1983 in Malaysian schools became the basis for students and teachers to use computers as one of the LA in the TNF process. This effort continues to grow after former Malaysian prime minister Tun Dr. Mahathir Mohamad made various changes in the country's education system. According to the current world circulation and the development of technology and science, education has undergone various developments and changes (Chanthiran et al., 2022). The existence of Sekolah Bestari and the Multimedia Highway Corridor (MSC) continues to advance the

Malaysian education system. All parties, especially educators, need to join hands with the Malaysian Ministry of Education (MOE) in achieving Vision 2020, which is to make Malaysia a developed country capable of facing the challenges of the world in all fields, especially in the field of education (Ismail et al., 2018). To achieve this goal, various efforts have been and are being made by the government together with the Ministry of Education and Culture to foster a culture of ICT among educators. To develop for students to aid their understanding and learning, more efficient ICT-based personalized packages need the teacher to master (Kasmin et al., 2019). Therefore, the skills of teachers need to be further improved and adapted to the needs of the current ICT era. Teachers should use a variety of teaching methods for the TNF process in all subjects, especially in innovative language teaching. In ICT, technology is a system that makes it easier for people to meet their needs and information is data that is compiled from various sources. Communication means a process that sends and receives information. Knowledge and skills about the application of ICT in education can improve teaching methods. The development of human capital and the use of ICT have become two important matters explained and given focus in the Third Long Term Plan Framework (RRJP3) and the Education Development Master Plan (PIPP) 2006-2010 (MEM, 2006). The Malaysian Education Development Plan 2013-2025 introduced by the MoE has set the goal of utilizing ICT in R&D. Correspondingly, the ministry strives to take advantage of ICT to improve the efficiency of education delivery. With that, the application of ICT in TNF is very important to attract a student's interest. ICT can be applied in all subjects including language subjects. Accordingly, the subject of Tamil is one of the compulsory subjects for students of the Tamil Primary School (TPS) and an elective subject for students at the secondary school level. This subject is planned and formulated like other subjects that contribute toward building a good, balanced, and harmonious person intellectually, spiritually, emotionally, and physically which is in line with the National Education Philosophy (FPN). Therefore, Tamil language subjects also need to be taught using ICT provided by the Ministry of Education and Culture. For that, teachers should have ICT skills to handle ICT materials and use ICT in Tamil Language TNF. According to the dictionary of DBP (2002), skill has been given the meaning of a person's competence and cleverness to do something. According to Luan (2002), ICT skills can be categorized into two, namely content and tasks. The content categories are related to word processing, electronic spreadsheets, electronic databases, electronic presentations, and the Internet. The second category is related to basic operations, manipulation, and design. The use of LA allows students to more easily understand the content of the lesson and the teacher can deliver the lesson more simply and effectively. Smeets (2005) thought that teachers need to create a good learning environment in the classroom so that learning using ICT can support effective TNF. The use of computer technology has changed the role of the teacher from an informant to a counselor, facilitator, advisor, mentor, guide, and intermediary to students. ICT has been taught as a subject in some schools while it is used as a teaching aid in most schools. The use of ICT in R&D can provide a good effect when used wisely. The use of ICT in TNF not only attracts students' attention, but it is also able to motivate students to continue to focus on their studies. The integration of ICT in education can take several forms such as information and computer networks, digital content, Internet sites, multimedia, and others (Alazam et al., 2013). According to Harun and Tasir (2003), various electronic media tools and ICT facilities such as computers, multimedia applications, and the Internet have been integrated into schools to make teachers' teaching more effective. Use of computers from the point of view of Internet technology, teachers use Internet facilities to find teaching materials while the teaching and facilitation process is at a good level. The technological knowledge and skills found among teachers prepare them to use ICT in teaching practice. With that, Alazam et al. (2013) conducted a study to determine the level of ICT skills and the use of ICT in the classroom among technical and vocational teachers in Malaysia. Data for this study were collected using a questionnaire involving 329 technical and vocational teachers. The findings of this study show that teachers' ICT skills are at a moderate level and most of the teachers who participated in this study are moderate ICT users in classroom teaching. The study that used this questionnaire found that teachers have basic ICT skills at a high level. Most of the teachers involved in Kaur and Hussein's (2014) study use some software in school work. among them, MS Word, MS Excel, MS Access, MS PowerPoint, and existing software. Only 26 percent and 16 percent of teachers are less skilled and unskilled in computer use. Qing et al.'s (2010) study of 210 chemistry teachers in Xi'an as a whole was found to have moderate competence in the use of ICT. Their efficiency in the use of ICT is between high and moderate with a mean of 2.51 (SP=2.69). They are found to be efficient in installing programs, using printers, presentation software, virus removal, and so on. The study of Al-Zaidiyeen et al. (2010) showed that Jordanian secondary school teachers are proficient in the use of the Internet, word processing, CD-ROM, and presentation software (PowerPoint). However, teachers are not skilled or less skilled in the use of e-mail and spreadsheet programs. Ching and Badusah (2010) surveyed the attitude of 105 Malay teachers who teach in primary schools in the Bintulu division towards the use of ICT in teaching. The findings of the study show that the knowledge and skills of Malay teachers are still at a moderate level. Study participants had the skills to surf the Internet to get the information needed to prepare teaching aids for TNF easily without having to read books. Alazzam et al. (2012) conducted a

study to identify attitudes, skills, and obstacles in the use of ICT for teaching Tamil in secondary schools in Selangor. This study involved 179 secondary school Tamil teachers from 10 districts of Selangor. The findings of his research show that teachers have high skills in the use of ICT materials such as computer operation, Internet, e-mail, and ICT hardware while having moderate skills in the use of computer software. Baharuldin et al. (2019) conducted a study on barriers to the use of computers and ICT in TNF among teachers in rural national secondary schools in Kulai Jaya district, Johor. A study involving 87 teachers from three rural secondary schools showed that the teachers' skill level in using computers and ICT was still at a moderate level. Time factors, attitude factors, training factors, and convenience factors are among the obstacles that have been identified in the study. Bakar et al. (2008) argued that the factor of ease and accessibility of the use of ICT in schools is the main factor that affects the success of the use of ICT in the TNF process. A study of 176 science teachers in schools in the education district of Yanbu, Saudi Arabia to find out the factors that prevent science teachers from using ICT was conducted by Alwani and Soomro (2010). The study shows that infrastructure and resource factors are the main factors that prevent teachers from using ICT during TNF with the highest mean score followed by staff progress and policy and support. Teachers also face problems in terms of lack of budget specifically for ICT, lack of hardware, lack of English training to use ICT, lack of support, and lack of sufficient time for activities related to ICT. Adeosun (2010) conducted a study to find out the development of ICT in education policy in Nigeria, efforts to implement ICT, and the availability of ICT equipment in schools. The study also identified teacher knowledge and teacher experience as well as ICT use practices at the basic education level. A study involving 351 teachers found that lack of time was the main obstacle to integrating ICT in schools, followed by the lack of infrastructure. This factor of lack of time is seen in two ways, namely the lack of time for some teachers to engage in training in the use of ICT as a form of professional development and the lack of teaching time to use ICT.

3. Problem statement

The subject of Tamil is one of the compulsory subjects for TPS students and an optional subject for pupils at the secondary school level. Pupils study Tamil subjects for six years in primary school and five or six years in secondary school and two years in pre-university level, which is the Sixth Form. However, students' weaknesses in Tamil subjects often occur even though various efforts have been taken by teachers during TNF sessions. According to Halili and Suguneswary (2017), Tamil teachers in secondary schools still use conventional methods when teaching Tamil. The level of competence in Information Communication Technology also must be highly skilled to make sure productivity in their

teaching (Bulan and Martin, 2022). The use of conventional methods in teacher-centered Tamil TNF does not attract students' attention and is boring. This is compounded when there is a lack of implementation of practical activities given by the teacher. Rahimipour (2021) had done a study on language teaching in Teacher Training Centres. The less attractive LA used by the Tamil teachers and the negative attitude of the teachers made it quite difficult for them to change their teaching style. Tamil teachers feel comfortable with a teaching style that involves traditional methods. Tamil teachers do not try to use ICT-based LA in the TNF process when they have a negative attitude toward ICT materials (Halili and Suguneswary, 2017). Among the reasons why Tamil teachers do not use ICT materials in Tamil Language and TNF are the lack of ICT skills and the lack of ICT facilities in schools. Osman (2015) found that school teachers are usually burdened with many school tasks and this scenario can reduce their focus on the main task. The teacher's role as a motivator and the student's role as an active learner needs to be further improved to make sure the learning and facilitating can be done well based on the 21st Model of Learning (Ponniah et al., 2018). Tamil teachers need to have skills in the use of ICT in line with the Ministry of Education and Culture's efforts to provide various infrastructures such as computer labs and Internet access in schools. Some Tamil teachers do not have skills in the use of ICT (Alazzam et al., 2012). Unsatisfactory teacher skills in ICT cause teachers to be unable to use ICT materials such as CD-ROM, Internet, laptop computers, and so on. Tamil language teachers can maximize the use of ICT in Tamil Language TNF with high skills (Alazzam et al., 2012). Only teachers who have ICT skills try to use ICT materials in their teaching. Teachers who do not have ICT skills do not try to find interesting LA and are negative. According to Pelgrum (2001), the government's efforts will not be successful as long as teachers do not have ICT knowledge and skills. Although Malaysia has a long history in the use of technology in the classroom, research results show that teachers still do not optimize the use of technology. The use of ICT among teachers was found to be still relatively low. One of the factors that prevent teachers from using ICT in TNF is the lack of ICT facilities in schools. The usability factor (PU) is also a motivator for teachers to show a positive attitude toward the use of ICT (Thannimalai et al., 2022a). The current learning in Malaysia suggested using technology that is useful for teaching and facilitation (Said et al., 2015). With that, it is clear that skills are important for a teacher to use ICT in TNF. Teachers need to equip themselves with various knowledge and skills in using ICT. The use of ICT can be done when the school is equipped with various ICT facilities. However, previous studies have shown that Tamil language teachers do not have ICT skills and face problems in terms of ICT facilities in schools. Therefore, this study was conducted to find out the

ICT skills possessed by Tamil teachers which are available in schools.

This study has two objectives in conducting the study. The following are among the objectives of the study:

1. To study the ICT skills of Tamil language teachers.
2. To review the ICT facilities provided at school levels.

This study has several implications. Although this study only involved four Tamil language teachers, the findings of this study can guide parties, directly and indirectly, involved in Tamil Language TNF. The findings of this study provide a true picture of the ICT skills possessed by secondary school Tamil teachers. At the same time, the findings of this study can also explain the ICT facilities available in secondary schools. With that, the Ministry of Education and Culture can identify ICT skills possessed by teachers and the infrastructure available in schools. With that, the Ministry of Education and Culture can provide several ICT workshops that can help teachers to improve their ICT skills. In addition, the MoE can also provide infrastructure if there is a shortage of materials related to ICT. The Ministry of Education and Culture can also understand the actual situation in schools and include appropriate TNF activities according to existing skills and infrastructure in the activity book prepared by the Ministry of Education. The Ministry of Education and Culture can also join forces with schools to provide ICT facilities such as software and workshops related to ICT for all teachers.

4. Method

This study is quantitative in nature. Quantitative methods are the process of collecting and analyzing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to a wider population. In this study, the researcher used a survey form for quantitative research and to obtain data from the study sample. The selected subjects were asked to complete a prepared questionnaire that included all appropriate issues of teachers and technology. The multiple choice and Likert scale formats were selected for simplicity in scoring and data management. Instrument development is the prepared questionnaire including all appropriate issues of teachers and technology.

5. Results and discussions

5.1. Part A: Sociodemographic

Table 1 shows that the questionnaire was divided into two categories which were personal details and the second part is the question developed by myself about the skills and facilities of ICT. The questions of personal details were age, education, salary, and

subject taught. The validity and reliability of the questionnaire are to validate the accuracy and validity of the questionnaire, the content is reviewed by a panel of experts. The study sample answered the survey form based on a list of questions prepared in advance. A total of 60 Tamil teachers who teach in secondary schools in the district of Klang, Selangor have been involved in this study. A purposive sampling technique was used to select the study sample. Purposive sampling is a group of subjects who have certain characteristics only selected as research respondents. The selected sample needs to have the knowledge and the specific purpose of the study, namely ICT skills and ICT facilities available in the school. This clearly shows that not all study samples in the population were selected as study samples. All the selected study samples have a specialization, that is a certificate, diploma, or bachelor's degree in Tamil language subjects, and have experience teaching Tamil language subjects for more than 15 years in secondary schools.

5.2. Part B: ICT skills and facilities provided at the school

Table 2 discusses the findings of a study on ICT skills possessed by secondary school Tamil teachers. The teachers who were interviewed admitted that they had some skills related to ICT. This study found that teachers have ICT skills in terms of software, Internet, websites, and ICT equipment such as computers and laptops. There is also a Tamil teacher who admits that he has good skills in using ICT materials. However, some teachers also admit that they have simple skills in handling ICT materials. In terms of ICT skills, teachers have only moderate skills and they are not very skilled in using ICT. Some teachers admit that they can use basic software related to ICT. He can use PowerPoint, excel, and word processing, i.e. Microsoft Word and designing software. For example, you can use PowerPoint, excel, word, and designing software such as InDesign and teachers can also use it well. Some Tamil teachers claim that they can use the Internet. Tamil language teachers were found to have skills in using the Internet in line with the development of the age of technology. The use of the Internet among teachers is also in good condition. Tamil language teachers are found using the Internet for various purposes.

They can be said to frequently use the Internet for school assignments. Also, the Internet can be said to be used by teachers to search for information on the Internet. Teachers use computers mainly for administrative matters as a teacher. In addition, teachers also admitted that they have the skills to surf the web. They browse the website to get materials related to TNF. Teachers browse many websites related to learning and TNF. They find TNF materials for school and can also surf websites well. Teachers use the website to find LA related to Tamil Language TNF. Some teachers admit that they

browse the MOE website and VLE frog recommended by the MOE. Next, the teachers who were interviewed were also found to have moderate skills in handling ICT-related equipment. Teachers can use ICT materials such as computers, LCDs, and laptops for TNF. In addition, the teacher also stated the use of ICT equipment. He stated that this ICT material is often used by him for school administration purposes.

Table 1: Percentage and frequency of respondents based on demographics

Demographics data (N=60)	Score	
	Frequency	Percent
Age		
18 – 24 years old	12	20
25 – 31 years old	24	40
32 – 39 years old	16	26.6
40 – 46 years old	8	13.3
Education status		
Certificate	20	33.3
Diploma	25	41.6
Bachelor's degree	15	25
Gender		
Male	34	56.6
Female	26	43.3
Race		
Malay	17	28.3
India	40	66.7
Chinese	3	5
Other	0	0
Religion		
Islam	17	28.3
Christian	0	0
Hindu	40	66.7
Buddha	3	5

Table 2: ICT skills and facilities provided at the school

Item (N=60)	Frequency		Percentage	
	Yes	No	Yes	No
1. My skill level in the use of ICT is good as it can be said that I can use all basic computer software and ICT well	33	27	55	45
2. My level is lower than excellent	32	28	53	46
3. I can use basic technology skills	33	27	55	45
4. I have moderate skills in technology	33	27	55	45
5. I can use the software well	33	27	55	45
6. I have skills in using the Internet in line with the development of technology	33	27	55	45
7. I can use Internet facilities	33	27	55	45
8. Technology facilities such as computers and the Internet are available at school	32	28	53	46
9. I am free to use technical equipment and the internet at school	32	28	53	46
10. Teachers and students are encouraged to use technology during teaching and facilitation sessions	32	28	53	46
11. CT materials such as computers, LCDs, and laptops for TNF are provided	32	28	53	46

5.3. ICT facilities in schools

The findings of the following study show the ICT facilities available in Tamil teachers' schools according to the survey form. The results of this study are discussed from the aspect of computer lab facilities, ICT equipment, and Internet facilities. The teachers who answered the survey form have admitted that the ICT facilities available in their respective schools are less than satisfactory. The selected school has ICT facilities but the facilities can be said to be in moderate condition. All schools indeed have ICT facilities shared by the Ministry of Education. But the shared facilities are not enough. All the Tamil teachers interviewed admitted that their school had a computer lab. This computer lab facility has been provided by MoE to all schools. Some schools have ICT rooms that are used by teachers and students. Next, the teachers have also admitted that their schools have ICT equipment facilities. There are ICT materials such as computers, printing, OHP, speakers, and so on in the computer lab and the ICT room. Although, computer labs and ICT rooms have ICT materials the condition of ICT materials is said to be unsatisfactory. Currently, the MoE has provided Internet facilities in all schools. The convenience of the Internet has been acknowledged by the teachers who were interviewed. The teachers stated that their schools were equipped with Internet or wifi facilities. However, the Internet facilities available at the school are said to be in satisfactory condition. There are also Internet facilities in the laboratory and there are special Internet zones for the use of teachers and students in this school so that they can surf the Internet to help students and teachers learn and teach.

6. Discussion

The study's overarching results indicate that Tamil teachers possess fundamental ICT skills, encompassing the utilization of various ICT components such as software, the Internet, websites, and ICT equipment like computers and laptops. Recognizing the significance of ICT skills for educators, their proficiency in this domain presents opportunities for embracing innovative teaching practices. These opportunities include leveraging interactive content, offering personalized assignments, and providing diverse materials and activities tailored to meet the distinct needs of students. By effectively incorporating ICT, teachers can foster enhanced engagement and tailored support to optimize student learning experiences (Ismail and Khalib, 2020). In this study, the teachers have only basic skills from the aspect of using PowerPoint, excel, and word processing (Microsoft Word). The findings of this study are in line with the study of Baharuldin et al. (2019) who found that the skill level of rural high school teachers in Kulai Jaya, Johor in using computers and ICT was at a moderate level. The findings of the study also show that

teachers have skills in using the Internet. Tamil language teachers use the Internet for TNF purposes and also for administrative purposes. They were found to be proficient in using Internet applications for email purposes, accessing information, and browsing websites. Next is the teacher's skills in using the website. The findings of the study show that teachers have skills in using various websites. The study participants used the website to find Tamil TNF materials. The findings of the study also clearly show that Tamil teachers use the MOE website and VLE Frog. The findings of this study are in line with the opinion of Baharuldin et al. (2019) who stated that the Ministry of Finance has invested billions of ringgit to implement the concept of virtual environment learning using the VLE Frog application. MOE also provides various infrastructures to make this learning concept a success. ICT facilities in schools are important for an educator to use ICT in the TNF process. The findings of Baharuldin et al. (2019) study found that the convenience factor is one of the factors that prevent teachers from using ICT in TNF. However, the findings of this study as a whole in terms of facilities are at a less than satisfactory level. Teachers were found to be less satisfied with the facilities available in their respective schools even though all schools have computer lab facilities and ICT rooms. The teachers have admitted that the facilities in terms of materials available at the school are also less than satisfactory. The problem of ICT facilities can prevent a teacher from using ICT in TNF. This can be seen from the studies of Alwani and Soomro (2010) and Adeosun (2010). The findings of the Alwani and Soomro (2010) study showed that infrastructure and resource factors are the main factors that prevent teachers from using ICT in TNF. The findings of Adeosun's (2010) study also showed that lack of time and lack of infrastructure are factors that prevent teachers from using ICT. Thannimalai et al. (2022b) also showed that there is a positive outcome in the use of ICT in the Tamil language TnF in the classroom between teachers in urban and rural areas. The findings of the study also show that the schools studied have Internet facilities. However, the Internet or wifi available at school has had problems in terms of speed. This should be avoided so that teachers can use the Internet without any interruption. The findings of this study are also supported by the study of Abdullah et al. (2013) which showed that one of the main problems and weaknesses that hinder the use of ICT is limited Internet access. According to Bakar et al. (2008), the Internet is a channel of knowledge that can be used to obtain information and new ideas related to a matter.

7. Conclusion

As highlighted in Sapian et al.'s (2021) statement, the call for ICT-based education holds significant importance for the rural population, particularly the younger generation, as it can significantly contribute to enhancing their living standards. It is crucial to recognize that the quality of education provided to the rural population has a direct impact on the Malaysian government's efforts to foster the development of rural areas. The study's findings reveal that the Tamil language teachers involved in this research exhibit a moderate level of ICT skills. While these teachers possess some proficiency in specific aspects related to ICT, the overall results indicate that their overall ICT skills remain at a moderate level. This fact is noteworthy given the current era of advanced technology, as there are still educators who possess only modest ICT skills.

Moreover, the study identifies unsatisfactory ICT facilities in the schools where the participating teachers work. These educators have pointed out weaknesses in the availability of ICT materials and internet access. Such shortcomings act as barriers to the effective integration of ICT in Tamil Language Teaching and Facilitation, demanding prompt resolution. To address these challenges, teachers should make concerted efforts to enhance their ICT skills actively. Additionally, stakeholders, including the Ministry of Education and school authorities, must take a proactive role in organizing various ICT-related training courses for teachers and ensuring schools have access to optimal ICT facilities.

Failure to take appropriate measures and initiatives by the Ministry of Education and Culture might result in Tamil language teachers lagging behind and being left out in terms of ICT knowledge, particularly concerning skills and effective utilization of ICT in TNF. Therefore, it is imperative to undertake more comprehensive follow-up studies employing diverse methodologies, such as quantitative, design, and development approaches, to gauge the acceptance and adoption of ICT in Tamil language TNF, aligning with the ever-changing technological landscape.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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