

A Phenomenological Study on Teacher's View and Perspectives on Using Technology in Teaching & Learning

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Abstract

Technology has changed the conventional way of teaching and learning. Teaching with technology can deepen student learning by supporting instructional objectives. However, technology could be a distraction for students if they do not use it wisely. In addition, the emergence of new educational technologies has led to a need change teachers roles. This qualitative research study employed a phenomenological approach to focus on teachers' views and perspectives on using technology in their teaching and learning. Eight full time elementary and secondary teachers in an international school attend in in-depth, semi-structural interviews. The data were analyzed using phenomenological analysis. Findings were coded into four categories: teacher concerns, teacher's roles, teachers' perspective, and implementation. Instructional maintenance, inequalities, filtration of information, teachers' readiness and need for training have been identified as teacher concerns. Guider, facilitator, assessor and moderator were teachers' roles in international school. Finally, the reason for implementing technology in schools was beneficial and effectiveness of integrating technology in classroom teaching. The research showed that teachers who are slightly younger often use the technology in teaching and learning more than the older teachers do.

Keywords: Phenomenological study; Teaching; Learning.



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1. Introduction

The emergence of technology undoubtedly has had a vast impact on various aspects of our lives and most prominently in the education sector (Webber, 2003). Realizing this, an increasing numbers of schools have been furnishing their classrooms with various digital devices and computer labs. Many of them are gravitating towards on-line learning that is seeing transformation in the way lessons are being conducted. Technology has certainly transformed the way education is carried out, vis-à-vis an adoption of a more constructive and active approach in the teaching and learning process. Volman and Van (2001).

Furthermore, when technology is integrated cross-curricular, students will be able to acquire the various skills involved in searching and assessing information in a number of areas including skills in communication and problem solving, which are deemed necessary in the preparation of students' repertoire of knowledge acquisition (Drent and Meelissen, 2007). The use of technology has the advantage of supporting and promoting student-centered learning (Drent, 2005). This therefore impresses upon us how imperative it is for educators, learners, and education providers to equip themselves with relevant tools, knowledge and skills on the use of technology for education. In providing quality education for all, not only will it enhance student learning but will also promote cognitive behavior by stimulating their thinking, decision making, problem solving and reasoning behaviors (Grabe and Grabe, 2001).

Technology has the added advantage of supporting learners with diverse learning needs and disabilities. Obradović et al. (2015) analyzed the effects of technology on dyslexia students. Their study reveals that peer-to-peer support and collaboration with the use of technology enhances the learning outcomes of students with learning disabilities (dyslexia). With the emergence of technology, it does not only ease and support these learners but also provides an opportunity for them to further enhance their knowledge and skills, thus creating a more meaningful future; - one which would have been hardly possible without technology. Furthermore, teaching and transferring knowledge can be more effective with the use of technology when it is directed to their specific needs and competence (e.g. using visual aids for visually impaired students).

Technology is certainly an important tool in the area of teaching and learning especially in a technological era. Not only does it change the landscape by changing how teaching and learning is being conducted, but it also promotes the creation of a more capable young generation. In realizing the many benefits that technology can bring to the field of education, it would be beneficial for the education system to be altered in a way that promotes and integrates technology into the teaching and learning process.

In today's world, it is difficult to separate the influence of technology and the role it play with various aspects of day-to-day life. Technology is rapidly changing the way students learn and how instructors teach. Evolving technological developments bring in their wake new opportunities and challenges both for educators and students. A good example of technology that can help or hinder education is social networking, depending on how it is used and integrated into mainstream teaching. Social networking in the classroom brings about privacy and security concerns. It can also be used as a tool for bullying and can become a distraction to students.

However, using social networking as part of the learning process can also have its benefits. Students who are more introverted may open up and connect more with faculty and other students when they are communicating through social networking. It also affords students the opportunity to collaborate and work together in a whole new way.

College students and even school students can be easily connected to technology, including social networking, through their smartphones, laptops, and tablets. Social media in education presents college students with different benefits and detriments compared to their younger counterparts.

2. Literature Review

Teacher perspectives on the use of technology is crucial in ensuring that student learning takes place. It is proven that a teacher's attitudes, beliefs and knowledge about technology integration enables more students-centered learning within the classroom environment. This shows that technology serves as a tool to transform teaching where students would be helped to learn the content, and this in turn would both complement and enrich the curriculum, while reinforcing skills amongst students. Based on the research conducted by Ertmer *et al.* (2012), the majority of teachers agree that the most influential part of technological integration represents the internal factors that shape their own beliefs and attitudes. The teachers have also received a lot of support from online professional learning networks, their school's administration and technological team in addition to motivation and engagement from their fellow peers. Technology therefore primarily assists teachers in pedagogical change by providing a platform which also serves as a tool of implementation for student - centred learning.

Although the majority of teachers have a positive attitude about technology, but external barriers such as hardwares, softwares, training, personal development and support can influence the extent of the actual usage of technology in their teachings. Therefore, in order to have teachers implement technology in their classrooms, these external barriers should be addressed and taken into consideration. Institutional and personal factors also play an important role in the continuous use of technology in teaching after the professional development of the teachers have been conducted (Kafyulilo *et al.*, 2015). The implications of professional development for technology integration not only initiates the development of knowledge and skills, but also has a long term impact on the teachers, especially when given support by the school management.

However, Professional development should be effective in order to achieve the effectiveness of technology use in the classroom and schools have been successful at the "infrastructure level with more than 90% of schools providing access to computers and the Internet" (Lu and Overbaugh, 2008). Yet devices such as desktop computers, Smart Boards, Ipads, laptops, document cameras, digital projectors, and mobile computer carts, as instructional tools have "not yet progressed much beyond using technology for creating teaching materials". The need for professional development has increased because accountability requirements for technology integration and educational outcomes have continued to increase (Gaytan and McEwen, 2010). Instructional technology professional development evaluation: Developing a high quality model. *The Delta Pi Epsilon Journal*, 52 (2), 77-94. Retrieved from ERIC). A study conducted by Davidson *et al.* (2014) suggested that participants wanted training on the effective use of technology as an instructional tool, however, it was a challenge when it came to providing teachers with adequate knowledge on how to use technology with curriculum. Therefore, factors such as providing hands-on activities, continuous long-term learning, having self-reflection, and building peer relationships need to be emphasised in order to achieve effective professional development in the use of technology for teaching and learning in the classroom. (DeSantis, 2012).

(It cannot be disputed that certain scales exist measure balancing needs in our life. As in the Chinese communities, they believe in the "Yin-Yang" effects, so does the issue on teacher's perspectives on using technology in teaching and learning. There are of course, advantages mentioned in using technology to teach and learn. On the other hand, opinions to the contrary exist on this subject.

According to the (Texas Education Agency, 2006), today's students have grown up using technology, and teachers must integrate technology to meet the needs of 21st century students who are better known as *digital natives*. Most current students are already proficient technology users who collaborate with others, to engage in learning activities, to watch movies, and to research information. "Students live their lives with and through the aid of technology, while schools have generally remained largely print-based and are lukewarm in integrating technology" (Ikpeze, 2009). Therefore, it has become a great challenge for educators to teach using high technology in a class, as students are more capable of handling them compared to teachers. Teachers who recognize the ancillary benefits of technology integration in critical thinking and problem solving have a compelling reason to utilize

technology in the classroom (Kingsley, 2007). Even so, when technical problems arise while a class is in the progress, it could still cause much discomfort to the educator.

However, an interesting finding from a study is that, when it comes to learning, students are “not so savvy surfers”. The report notes that, all the teachers interviewed indicated that their students loved working – and playing – with smartphones, iPods, iPads, computers and networked devices of all kinds. But they also agreed that simple access to networked technologies has not made their students better learners. In spite of the fact that young people demonstrate a facility with online tools, many students lack the skills they need to use those tools effectively for learning. There is also a real propensity on the part of students to take what they find online as “given”. Steeves and Valerie (2012)

Teachers in the study identified several obstacles to integrating technology into learning including the following (as cited in Couture and Murgatroyd (2012):

- a) Internet filters and bans on personal digital devices such as tablets and smartphones
- b) Pressure to teach technical skills instead of digital literacy skills
- c) Potential for digital technologies to cause disruptions in the classroom [this was one of the findings of the 2010 CTF teacher survey on cell phones in the classroom]
- d) Shortage of professional learning opportunities on technology integration

In terms of academic readiness, to progress in school, students need to have strong foundational skills upon which to build new knowledge. Teachers assess a student’s academic readiness in order to determine the appropriate level and pace of instruction. Students are noted to vary in their digital readiness and that, as a result, educators should not assume that all students have the requisite digital (citizenship) skills to succeed in a flexible learning environment.

3. Methodology

3.1. Participants

The participants for this study comprised of full time teachers from the secondary and primary school divisions of Help International School – HIS Primary and Secondary. The teachers had worked for at least one complete year. These teachers were selected for the study as they were all colleagues who were enrolled in the MED 603 class and would therefore facilitate an ease in the distribution of questionnaires. These participants were also familiar with the perspectives on using technology in Teaching and Learning in the classroom.

3.2. Sample Characteristics

In order to collect data from the subjects of the study, the researcher used the Stratified sampling procedure. The researcher divided (stratify) the teachers at Help International School based on certain specific characteristics (e.g. gender and years of teaching); however since the teachers were all females the, researcher didn’t use simple random sampling and as such, so there was no sample from each subgroup of the population (example females and males).

3.3. Data Collection

Data collection was done by hand rather than by email in order to ensure that the response rate was satisfactory for the required data analysis. More so, informed consent and verbal acceptance to participate were obtained from the participants. The researcher guaranteed that responses would remain anonymous since they would not be linked to the identity of any participant.

8 primary and secondary teachers participated in this study. Questionnaires were distributed to teachers in the group taking the MED 603. The researcher distributed the questionnaires. The respondents were also provided with detailed instruction on how to complete the questionnaires and return the same to the researcher. The questionnaire used an anonymous method to ensure the confidentiality of the respondents and to reduce the likelihood of obtaining biased responses.

3.4. Data analysis

The data collected from the survey questionnaire was analyzed to achieve a conclusion. All respondents were female taking the MED course 603 so the sample was very limited. From the table we can see that majority of the respondents always used technology in their class for teaching. In the Help International School, teachers often used the I-Pad or Mac projector. Younger teachers that were the ones who always used technology in teaching and learning whereas the older teachers only used it once in a while.

Table-1. (Profile of Study Participants)

Participants	G	Age	Academic Qualification	Years teaching	Subject teaching	Technology used in the classroom	Average students/class
T1	F	50+	Masters in Admin Edu	15	BM, Agama	Once in a while	25
T2	F	32	MBA	9+	Maths	Always	25
T3	F	50+	MBA	14	Maths	Once in a while	15
T4	F	38	Degree	12	English	Once in awhile	10
T5	F	33	Degree	9	Bahasa Malaysia	Always	25
T6	F	26	Degree	3	Mandarin	Always	25
T7	F	28	Degree	2	English, IPC, Math	Always	25
T8	F	39	Degree	2	SEN	Always	1:1

4. Results and Findings

The data obtained in the study were gathered under two main themes based on the related literature and within the scope of the open-ended questions directed to the teachers regarding technology use. These themes were determined as “concerns teachers have about the use of Technology in the classroom” and “students’ perspectives towards the use of technology” and were supported with direct quotations regarding the themes. While direct quotations were used regarding the teachers’ views, the teachers’ names were kept secret and coded.

4.1.1. Concerns Teachers Have About the Use of Technology in the Classroom

4.1.2. Access and Availability

Teachers pointed out that the insufficient technical support at school does affect the usage of technology in classroom teaching. For instance, the unstableness of WiFi connection and the functionality of projectors, interactive whiteboards and Apple Tv. One of the teachers mentioned:

“Sometimes, whenever we are prepared in delivering a lesson with the aid of technology, there could be always a possibility of not having stable WiFi connection. We have no choice but to come out with alternatives to conduct the lesson...” (T5)

4.1.3. Inequalities

Another frequently mentioned concern was the disparities between students who have access to digital gadgets such as computers and iPads at home and those who do not.

“Students from low income families will not be able to own digital gadgets, therefore, they are unable to complete certain tasks assigned by the teachers...” (T4 and T7)

4.1.4. Teachers’ Readiness and Need for Training

Teachers provided evidence of the importance of the efforts in-school to promote professional development in integrating information technology into classroom teaching. The professional development days held and the flexible mentor type training available at the school was viewed as being very important by the teachers interviewed. A teacher said that:

“You know, some of the teachers refused to step out of their comfort zone in integrating technology to their lessons as it seems complicated hassle in doing so...” (T1)

Two of the teachers stated that:

“Teachers are not ready and not well-equipped with knowledge and skills in using technology to enhance teaching and learning in their classroom.”(T1 and T2)

“The school should provide us sufficient support and training to ensure the teachers are competent in implementing lessons with the use of technology..” (T3)

4.1.5. Filtration of Information

Teachers recognised that sometimes students are overwhelmed with the large amount of information available from the internet, therefore, teachers should always physically present to guide students in obtaining the right information.

“There are 25 students in a class, therefore, teachers have the responsibility in moderating and filtering the information that the students accessing in the internet. Teacher’s presence is viewed as one of the important elements in using technology in classroom teaching as the students cannot be left or ignored with digital gadgets alone...” (T2 and T4)

4.1.6. Teacher's roles in technology integrated classroom Guider

Another role of teachers in technology integrated classroom teaching is guider. Teachers will need to model and demonstrate the 21st century skills such as, critical thinking and problem solving in authentic learning. However, students need to be lead and guided in how to utilise technology as an aid to foster their skills and knowledge in learning. A teacher suggested that:

"Teachers are the ultimate role model and guidance to all students on how to effectively use technology in classroom teaching. Especially for students from lower primary, they need clear instructions and demonstration in using technology such as computer or iPads in completing a particular task..." (T1)

4.1.7. Facilitator

The roles of teachers has dramatically changed over the decades. Due to the technological advances, there is an understandable impact on teaching profession as a whole.

One of the teachers pointed out that:

"The role of teachers today is becoming more of a facilitator rather than a teacher. There is a call for teachers as facilitators in any of the student-centred and technology integrated learning environment today as the learning involves process of collaboration, communication and cooperation. Students are not spoon-fed but assisted and facilitated in constructing their own knowledge..." (T2 and T3)

4.1.8. Assessor

In the technology integrated classroom, teachers can easily track the learning progress of students. With the presence of technology advances such as quiz generator website, teachers can assess students' understanding towards a particular topic. Quiz and games could be the tools which act as the informal assessment. Some of the teachers said that:

"After teaching the students a certain topics, I conduct quizzes with the use of an app in their iPads to assess their understanding. Based on their scores, teachers can identify students' learning progress..." (T5)

Another teacher added that:

"In Year 4, teachers have been using Google Classroom as a tool in assessing students' understanding. Teachers can easily access into the students' account and monitor their scores and progresses..." (T2)

4.1.9. Moderator

Teachers' presence in the technology integrated classroom is viewed as the most important element as teachers are responsible in moderating students' learning as well as the information they receive from the internet.

"Teachers are called to be responsible in ensuring that the students can only access into appropriate information that enhances their learning..." (T4)

4.1.10. Technology Issues From Students' Perspective

Another important and related point to the usage of technology in teaching and learning process is arising issues or views among the students towards the usage. Technology does make the teaching and learning process, however, it involves readiness from both teacher and students. One of the teachers stated:

"Students readiness is very crucial. If the lesson or topic is exciting, they will love, be interested and ready to use it, but if it is not, they will find it boring. Using technology in not something new for urban children, therefore, excitement is needed to spark their interest towards something that they have been using everyday in their life..." (T4)

Other teachers stated:

"Those students in rural area or come from less affordable family, may have difficulties in operating and using the technology as they have lack of skills and knowledge about it. Therefore, teacher's presence is important to mentor or facilitate the students in searching the correct content at a correct page..." (T3)

"Some students are unable to do the given task online or by using technology due to some circumstances or regulations set by parents at home about technology usage. For example, some students may attend school after a long weekend without completing his or her homework. The commonly given reason is not having a laptop because their parents are away or not at home or no Internet connection at home..." (T7)

4.1.11. Reasonability of Implementing Technology in Teaching and Learning

Implementing technology in classroom enhances the process of teaching and learning to make sure that the students get the fullest amount of content from the subject and topic. It needs to be used correctly, moderately and frequently to make the process exciting and meaningful for everyone at every stage. Two language teachers stated:

"Using technology in teaching Mandarin is very beneficial and arouse their interest towards the subject. For most of the students in my school, Mandarin is not their first language, so, technology does help to equip my teaching during the lessons. From my observation, students managed to grab at least 50% from the taught topic..." (T6)

"In teaching Bahasa Malaysia, I get them engaged to the lesson by allowing them to use IPAD to make research or do quizzes. It create an interactive learning and also, create a competition among the students to do the best and gain more scores. It is more effective and support paper-less environment created by the school too..." (T5)

Two teachers added:

By creating a competition using technology in the lesson, it help and also force the students to think and provide the answers. With teacher's presence to recap the content of the lesson, I believe that both teacher's presence and technology is important in teaching and learning. (T2)

"Technology becomes both tool and also reward. When working with Special Education Needs (SEN) students, technology helps to enhance their attention span towards the given task. Interactive activities with colourful pages, animations and sounds keep them on task. On another situation, technology becomes a reward for a child upon completing his task, where he is allowed to use iPad to look for information about anything that he is interested in. In this situation, such student will not only eager to completing his given task to get a chance to use IPAD, but also gain extra knowledge in an area that will increase his general information too..." (T8)

On the other hand, a teacher said:

"The effectiveness and reasonability of implementing technology in teaching and learning depends on the subject and topic itself. In teaching Islamic Studies, students manage to get the basic idea about taking ablution from videos that has been showed to them. However, teacher's presence is also needed to model the process. From my observation, students get most of the content not just from technology, but from teacher's modelling and facilitating..." (T1)

At the end of this section, all teachers agreed to the benefits of implementing technology in teaching and learning with a few additional suggestions. Technology itself is not important, however it depends on the nature of the subject. It is beneficial by using moderately. Technology caters many different learning styles and prepares the students for the 21st century. Since the world is changing, the usage of it is necessary to go along with the current flow.

Table-1. Main Findings of the Study

Main Theme	Categories	Subcategories	Concepts
Teachers' views and perspectives on using technology in Teaching and Learning	Concerns teachers have about the use of Technology in the classroom	Instructional Maintenance	Connection stability/the functionality of technology tools.
		Inequalities	SES of students
		Teachers' readiness and need for training	Teachers are not comfortable to use technology / the need training
		Filtration of information	Teachers have the responsibility to filter the information available in internet.
	Teacher's roles in technology integrated classroom	Guider	Teachers model and demonstrate appropriate attitudes using technology
		• Facilitator	Teachers facilitate and coach students in learning with aid of technology.
		• Assessor	Teachers assess students' understanding.
		• Moderator	Teachers ensure the students receive appropriate information.
	Students' perspective towards technology integration	• Students' readiness	The availability of technology tools for students
	Reasonability of Implementing Technology in Teaching and Learning	• The beneficial and effectiveness of integrating technology in classroom teaching	It highly depends on the nature of the subjects

5. Discussion

This study explored the importance of emerging technology in a school setting and reviewed teachers' view and perspectives on using technology in teaching and learning. The findings provide data obtained from the research study of teacher's perspectives about using technology in the classroom, teacher's role in technology integrated classroom, students' perspective towards technology integration and reasonability of implementing technology in teaching and learning.

The results of the study are broken down into a few subcategories for a more detailed identification of the main issue for this discussion. According to our analysis of the findings, teacher is playing multiple roles while integrating technology in the classroom. Teacher is a guider/model in demonstrating appropriate attitudes using technologies; a facilitator and coach for learning aid in technology; an assessor and moderator to ensure students receive appropriate information and have understanding in technology. Hence, some teachers are concerned about the use of technology in the classroom as they have to constantly maintain the technology tools and the stability of the connection and have

the responsibility to filter information in the internet. Report shown that some teachers are therefore not comfortable to use technology in the classroom because it burdens the teacher with extra workload. Moreover, teachers are required to attend training and courses to be up-to-date with the rapidly developed technology which also overload a teacher. Therefore, Table 1 can be concluded as teachers understand the importance of technology and the benefits of integrating technology in the classroom, however it is highly depends on the nature of its subject. In addition, “Technology will not be used, and certainly will not be used well, unless teachers are trained in the use of technology:

Despite the key questions that have been analyzed, the following questions do not have answer during the group discussion:

Q1. How technology is useful in a classroom setting and what services that it provides?

Q2. Limitation to this study (HELP library in house campus resources)

Q3. Teacher’s view or perspective on ICT (reflection/ conclusion)

Question 2 identified the limitation of integrating technology in school which evidences are recorded in 3 categories: Readiness for ICT use, Teaching and learning approaches and age restriction. Our major findings of this study is that all of the teachers that participated in this study are locals where they graduated from local schools which the education blueprint of Malaysia is much different comparing to other education system in Malaysia. Throughout teachers’ academic studies at local schools, technology was not introduced, therefore using technology in the classroom is not a trend.

5.1. Readiness for ICT use

As mentioned of the contrast between Malaysia’s education blueprint with other education system for example, Cambridge system at HIS, technology is not a mainstream at local schools even till today. Students from local schools barely use technology in classroom, so does the teachers. Therefore, experiencing the “real computer use” are restricted, reason being schools do not have sufficient funds in supporting technology, also because they are following the Malaysia education system based on blueprint. However, some students and teachers who considered themselves late in adopting new technologies mentioned that social media and games as their initial applications. Their first experience were exciting and yet frustrating as in the early 90’s, analogue phone lines prohibited simultaneous phone calls and internet use. More negative experiences such as malfunctioning floppy disks or internet connections via a slow modem were mentioned as well. All these factors caused most teachers who graduated from local schools are non-ICT minded.

5.2. Teaching and Learning Approaches

The gathered data shows that the use of technology is not implemented in the local schools, teachers pointed out that the insufficient technical supports at school affect the usage of technology in teaching and learning. The mindset and perspectives of a teacher regarding integrating technology in school set as a barrier for them to delivering a lesson using technology in the classroom, reason being is their teachers did not use technology in their classroom and, therefore, teachers refused to step out their comfort zone in integrating technology in their classroom. Another common barrier for teachers to using technology is the lack of professional development to solve technical errors and not much support has been given. Thereafter, technology will certainly not be used well.

5.3. Age Restriction

Most of the teachers who participated in the discussion are aged almost 30 to 30+. They find it overwhelming to attend technical courses because their knowledge and accessibility towards technology are limited. To understand the usage of Smart Boards, digital projectors, document cameras, and integrating technology and instruction became a burden to the teachers. Another aspect of the barrier is that most of the teachers have families to take care of, and they are not willing to spend extra hours to attend trainings on effectively using technology.

5.4. Reflection: (Q3) Teacher’s view or perspective on ICT

90% of the of the participants of this case study believe technology plays an important role in advancement of teaching and learning process. Though the participants are national mainstream schoolers who had very little exposure to information technology in school, they have shown a great interest in the use and collaborating of information technology in classroom setting. In this discussion, teachers have identify issues about the use of technology in the classroom as well as their expanded roles to improve the effectiveness of its use. Tools provided by information technology for interactive classroom and collaboration enhances teaching and learning process. Teacher centred learning has changed to be teacher - student centred learning process. A teacher is not only an instructor but a guide, facilitator, assessor and moderator. Even though participants of this case study accepted the use of technology in classroom, they do have some concerns over the access and availability of information technology, readiness and misuse of information technology. Teachers need to plan and monitor the use of technology in class to be effective and useful.

6. Conclusion

Our discussion on teacher's view and perspectives on using technology in teaching & learning shows that teachers do accept that the use of technology has changed the conventional way of teaching and learning into collaborative and interactive classroom environment.

Diverse learning styles and special need students are benefiting from the use of electronic gadgets which accommodate their needs on an individual basis. Teachers find many useful resources in the internet in planning and delivering their lessons. Availability of many sort of apps in the web provides a chance for the students to extent their attention span and retention of information. Google classroom is used to post the classwork and homework is widely used in Help International School. Teachers can easily monitor and assess each student's understanding and knowledge in each different topic.

Technology has changed and modified teaching and learning process in Help International School. Though it is not applicable to all areas of subject or topics as technology itself cannot replace teacher who reinforces the use of technology. Without the teacher's supervision technology is not safe for students to use due to many concerns over the filtration of the information perceived from the internet.

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