

TEACHER'S READINESS ON 21ST CENTURY LEARNING APPROACH: A REVIEW

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Introduction

Due to ICT's importance in the future of education, identifying the possible challenges to integrating these technologies in schools would be an important step in improving the quality of teaching and learning. Learners need to be equipped with updated knowledge that will help them adapt to the changing world. Such knowledge leads to better communication and enhances the 21st century skills. Thus, as teacher educators, it is crucial to be sensitive to fulfill the demand of 21st century learning mean that teachers must possess the knowledge and how to best facilitate and deliver the knowledge.

Information and communications technology (ICT) is an important part of most organizations nowadays (Zhang & Aikman, 2007). In the early 1980s, computers began to be used in schools, and some scholars suggested that ICT will be an important part of education for the next generation (Yelland, 2001). The latest technology offers various methods to enhance the process of teaching and learning in the classroom. In a study conducted by Simin et. al. (2014), it is indicated that average level of the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers, high level of challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizing the effectiveness of the extent of ICT tools in supporting teaching and learning in the classroom.

Statement of the Problem

Balanskat, Blamire, and Kefala (2006) argue that although teachers appear to acknowledge the value of ICT in schools, they continue facing the obstacles during the processes of adopting these technologies into their teaching and learning process. The issue of culture shock and lack of resource to properly support or utilise a technology resource and infrastructure also plays a big role in making online learning all the more difficult for students and instructors alike (Nugroho, 2020) The Ministry of Education, Malaysia has embarked on the project "1Bestarinet" in providing a virtual learning platform in schools to enhance ICT usage among teachers. It has not been fully adopted in the teaching and learning process in most schools in the country. Only a few teachers are using ICT as teaching and learning tools (MoCT, 2003) because there are more challenges as compared to the benefits (Bingimlas, 2009).

The unexpected change from conventional way that is face to face learning to online learning has become a global issue in education system, most of academic institutions were primarily focussing

on transforming and adapting the educational content to the digital world and online teaching and learning and there were lesser not face to face and physical delivery methods. (Zhong, 2020).). The lack of resources in academic institutions, insufficient access and availability of the internet and the lack of latest technology affected the institutions' performance and students' capacity to participate in digital learning (Zhong, 2020).

Based on such situation, this study is going to investigate the challenges faced by the teachers in applying the 21st Century Learning and what would be the useful recommendation to reduce the challenges. It is hoped that by posting the issues, the situation could be improved and the teaching and learning process would be enhanced and hurdles could be handled effectively.

Research Purpose

1. To recognize the challenges faced by the teachers in applying the 21st Century Learning approach in teaching and learning process.

Research Methodology

This study is an analytical study on related topics in which the findings and results from previous researches are collected through reviewing the literature from primary and secondary sources.

Discussions and Findings from Review of Literature

i) Lack of Knowledge and Competence

Teachers' ability in utilising the ICT in teaching and learning approach has become an effective method in line with the interest of young generation in gadgets and multimedia tools. Thus, teachers need to equip themselves with knowledge on ICT as well as being able to implement and utilize suitable and effective teaching approach (Zawawi (2016). According to Nor Azilah and Zarina (1997), teachers, knowledge in ICT as compared to general knowledge should be of the same level or even more and teachers should possess the skills in applying technology in daily routine. Ibrahim & Ayub (2010) stated that the process of implementing a program of computer-based information technology proficiency among teachers is required. It is important not only to improve the effectiveness of teaching and learning but also from the administration and management of schools. Teachers' readiness in adapting the changes would determine the success or failure in teaching process although the use of ICT in teaching and learning process in Malaysia is still new compared to the developed countries.

Based on research conducted by Mohd Izham and Noraini (2007) the readiness of science teachers on all aspects is on the average level. In another research conducted by Sharifah Nor dan Kamarul Azman (2011) it is also indicated that teacher readiness towards using ICT and the facilities is also at the average level. However, the aspects of suitability of have shown a high percentage. Findings from research conducted by Siti Fatimah & Ab. Halim (2010) has shown that teachers teaching Islamic Education in primary schools in Sarawak has high and positive perception regarding the usage of ICT the the teaching and learning process. In research conducted by Melvina & Jamaluddin (2010), the result showed that the teachers teaching Bahasa Melayu in primary schools in

Sarawak have shown positive perception towards the usage of ICT in teaching and learning process. Teachers who have attended ICT courses tend to show more positive perception and more prepared as compared to teachers who did not attend any ICT courses. This is due to lack of knowledge and skills in using computers and did not have adequate information in applying ICT in teaching and learning process.

Situations would be improved if teachers have adequate knowledge to maximise the use of ICT in the classroom. It would be an innovative method to improve the effectiveness of teaching and learning process. According to Hassan & Kamisan (2010), knowledge and attitudes towards computers are affected by the frequency of computer use, the more often a person uses a computer, knowledge level will also rise. Teachers who are less skilled in producing electronic teaching materials would not achieve an effective delivery of knowledge. They may encounter a number of difficulties.

The lack of implementation of the technologies is due to the teacher themselves, where most of the teachers feel reluctant towards the new system or application introduced by the Ministry of Education. Honey and Moeller (1990) stated that there are several reasons that caused teachers to be reluctant towards using the technologies. Firstly, the teachers are having personal fears and inhibitions (Trucano, 2005). Deryn (2001) supported this and by saying that most of the teachers have some feels that can be referred to 'technophobic' which is reluctant to adopt change. This is because the teachers that have technophobic always having problems while using the technology. Besides that, there are teachers who are still used to the examination-oriented style which make them reluctant to use technology in their lesson. Peter (2010) stated that the teacher feels that they do not have to change their teaching method since all of their students achieve a good grade in their examination. Many teachers are not confident in using a wide range of ICT resources which can affect the lesson if the teachers still insist on using it.

Several studies indicate that lack of access to resources, including home access, is another complex challenge that prevent teachers from integrating new technologies into education. Various research studies showed several factors for the lack of access to technology. In Sicilia's study (2005), teachers complained about how difficult it was to always have access to computers. A teacher would have no access to ICT materials because most of these were shared with other teachers. Empirica's (2006) European study found that lack of access is the largest barrier and that different challenges to using ICT in teaching were reported by teachers, for example a lack of computers and inadequate material. Hence, lack of teacher competence may be one of the strong barriers to integration of technology into education. It may also be one of the factors involved in resistance to change.

ii) Limited Technical Support

Without both good technical support in the classroom and whole-school resources, teachers cannot be expected to overcome the obstacles preventing them from using ICT (Lewis, 2003). In Sicilia's study (2005), technical problems were found to be a major barrier for teachers. These technical barriers included waiting for websites to open, failing to connect to the Internet, printers were not functioning, malfunctioning computers, and teachers having to work on old computers. According to Gomes (2005), ICT integration in teaching needs a technician and if one is unavailable the lack of technical support, it could also be one of obstacles. Toprakci (2006) found that the lack of technical

support was one of two significant barriers to ICT integration in science education in schools and might be considered “serious”.

Science teachers would agree to introduce computers into teaching, except that they believe they will encounter problems such as technical service or hardware problems (Almohaissin, 2006). It has been argued that whatever kind of technical support and access teaching staff have and whether they have vast experience or are novices to the profession, technical problems would generate barriers to the smooth lesson delivery by teachers.

iii) Lack of Effective Training

According to Balanskat et al. (2006), inadequate or inappropriate training leads to teachers being neither sufficiently prepared nor sufficiently confident to carry out full integration of ICT in the classroom. Providing pedagogical training for teachers, rather than simply training them to use ICT tools, is an important issue (Becta, 2004). Cox et al. (1999) argue that if teachers are to be convinced of the value of using ICT in their teaching, their training should focus on the pedagogical issues. The results of the research by Cox et al. (1999) showed that after teachers had attended professional development courses in ICT they still did not know how to use ICT in their classrooms; instead they just knew how to run a computer and set up a printer. They explained that this is because the courses only focused on teachers acquiring basic ICT skills and did not often teach teachers how to develop the pedagogical aspects of ICT.

iv) Limited Time

Several studies indicate that despite having competence and confidence in using computers in the classroom, teachers still make little use of technologies because they lack the time. A significant number of researchers identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers’ use of ICT in their teaching (Al- Alwani, 2005; Becta, 2004; Sicilia, 2005). According to Sicilia (2005), the most common challenge reported by all the teachers was the lack of time they had to plan. Becta’s study (2004) also indicated that the problem of lack of time exists for teachers in many aspects of their work as it affects their ability to complete tasks, with some of the participant teachers specifically stating which aspects of ICT require more time. These include the time needed to locate Internet advice, preparing lessons, explore and practice using the technology and dealing with technical problems, and receiving adequate training.

Conclusion

It is hoped that this study could benefit the academics, the school administration as well as educational policy makers regarding the implementation of ICT in the teaching and learning process despite the challenges and obstacles. It is important to gauge how teachers perceive this innovation and its efficacy as a tool for enhanced teaching and learning. It is also hoped that this review would help the related parties to be aware of the challenges in facing the fast development of technology and be more prepared in facing the 21st century approach specifically regarding the use of ICT in education in Malaysia. More studies should be conducted on how to address the barriers and challenges faced by teachers in using ICT tools in teaching and learning.

References

- Al-Alwani, A. (2005). *Barriers to Integrating Information Technology in Saudi Arabia Education* (Doctoral Dissertation), University of Kansas, Kansas.
- Albirini, A. (2006). Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computers & Education* (pp. 47, 373-398).
- Almohaissin, I. (2006). *Introducing computers into Saudi Arabia secondary school science teaching: Some problems and possible solutions*. Unpublished paper.
- Balanskat, A., Blamire, R., & Kefala, S. (2006). *A review of studies of ICT impact on schools in Europe*. European Schoolnet.
- Becta. (2004). *What the research says about using ICT in Geography*. Coventry: Becta.
- Beggs, T. A. (2000). Influences and barriers to the adoption of instructional technology. *Proceedings of the Mid-South Instructional Technology Conference*. Murfreesboro.
- Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, Science and Technology Education*, 5 (3), 235-245.
- Chung, Hui Ching, Melvina dan Jamaludin Badusah. (2010). Sikap guru Bahasa Melayu terhadap penggunaan teknologi maklumat dan komunikasi (ICT) dalam pengajaran di Sekolah-sekolah rendah di Bintulu, Sarawak. *Jurnal Pendidikan Malaysia*. 35(1): 59- 69.
- Cox, M., Preston, C., & Cox, K. (1999). What factors support or prevent teachers from using ICT in their classrooms? *Proceeding of the British Educational Research Association Annual Conference*.
- Dawes, L. (2001). *What stops teachers using new technology?* In M. Leask (Ed.), *Issues in Teaching using ICT* (pp. 61-79). London: Routledge.
- Empirica (2006). *Benchmarking access and use of ICT in European schools 2006: Final report from Head Teacher and Classroom Teacher Surveys in 27 European countries*. Germany: European Commission.
- Ghavifekr, S., & Wan Athirah, W. R. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science*, 1(2), 175-191.
- Ghavifekr, S., Ahmad Zabidi A. R., Muhammad Faizal A. G., Ng Y. R., Yao M., & Zhang ,T. (2014). ICT integration in education: Incorporation for teaching & learning improvement. *Malaysian Online Journal of Educational Technology*, 2(2), 24-46.

- Hassan, J., & Kamisan, S. N.. Halangan terhadap penggunaan komputer dan ICT di dalam pengajaran dan pembelajaran (P&P) di kalangan guru di sekolah menengah kebangsaan luar bandar di daerah Kulai Jaya, Johor. N/A, 1–10. (2010).
- Ibrahim, N., Wong, S. L., & Ayub, A. F. M. (2011) Sikap terhadap Komputer di kalangan Pelajar ICT Tingkatan Empat. *Jurnal Teknologi Pendidikan Malaysia*, 1(1).
- Özden, M. (2007). Problems with science and technology education in Turkey. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(2), 157-161.
- Pelgrum, W. J. (2001). *Obstacles to the integration of ICT in education: results from a worldwide educational assessment. Computers & Education*, 37, 163-178.
- Prestridge, S. (2007). Engaging with the transforming possibilities of ICT. *Australian Educational Computing*, 22(2), 3-9.
- Sharifah Nor Puteh dan Kamarul Azman Abd Salam. (2011). Tahap kesediaan penggunaan ICT dalam pengajaran dan kesannya terhadap hasil kerja dan tingkah laku murid Prasekolah. *Jurnal Pendidikan Malaysia*. 36(1), 25-34.
- Sicilia, C. (2005). *The Challenges and Benefits to Teachers' Practices in Constructivist Learning Environments Supported by Technology*. Unpublished master's thesis, McGill University, Montreal.
- Suriana, Ismail (2012) *Kesediaan Guru Terhadap Pelaksanaan Mata Pelajaran Reka Bentuk dan Teknologi (RBT) Sekolah Rendah Di Malaysia*. (Unpublished Master Thesis), Universiti Tun Hussein Onn Malaysia.
- Toprakci, E. (2006). Obstacles at integration of schools into information and communication technologies by taking into consideration the opinions of the teachers and principals of primary and secondary schools in Turkey. *Journal of Instructional Science and Technology(e-JIST)*, 9(1), 1-16.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46, 186–204.
- Zhong, B. L., Luo, W., Li, H. M., Zhang, Q. Q., Liu, X. G., Li, W. T., & Li, Y. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *International journal of biological sciences*, 16(10), 1745–1752. <https://doi.org/10.7150/ijbs.45221>