ICT: Development, Challenges and Obstacles among Preschool Teachers

Azlinda Husin, Nor Mashitah Mohd Radzi, Mohd Hafiz Md Hanif
Faculty of Education, Sultan Idris Education University, 34000 Tanjung Malim, Perak
Malaysia
Email: Azlinda_husin@yahoo.com

Abstract
Nowadays, the use of Information and Communication Technology (ICT) in the teaching and learning process among preschool teachers is not something new. ICT is widely used and is very helpful in assisting teachers in their teaching and learning activities. In addition, the use of ICT among preschool children will give very positive impacts and produce children who are creative in their daily lives. The use of ICT is also useful provided that preschool teachers have the skills, attitude, and knowledge of its implementation in classrooms. Though now the National Preschool Standard Curriculum has included the element of technology, teachers must know that the use of ICT among preschool children is very important. The use of ICT in teaching is also a creative teaching method. The use of ICT among preschool teachers can be evaluated from the aspects of skills, knowledge, attitude, and facilities provided which influence the teachers' motivation. This has also led to the issue of how far ICT has benefits the teaching, though ICT has been acknowledged widely by academicians. This study aims to investigate the readiness and the mastery of ICT among preschool teachers to integrate ICT in the teaching and learning process of preschool children.
Keywords: Motivation, Preschool Teachers, ICT, Obstacles, Challenges, the use of ICT

Introduction
The use of Information and Communication Technology (ICT) among preschool teachers is one of the most important elements across the curriculum to develop the quality of preschool teaching. The element across the curriculum is designed to build self-esteem among preschool students. The use of ICT as one of the classroom teaching materials to assist the process of teaching and learning. This is due to the fact that using ICT in classrooms does not only assist the teaching method but also improves the teaching quality of preschool teachers. The advancement in education is obviously influenced by the use of Information and Communication Technology (ICT). In the context of education, the use of technology does not only assist tasks of administration and management, but also has a great potential as a tool to enrich the teaching and learning environment almost for all subjects. This type of technology should be fully utilized by teachers to produce an output which fulfils the demand of the community. By using technology tools, the teaching and learning environment will be more interesting and has great potential to improve the quality of teaching and learning.

Multimedia is part of the ICT which has the ability to combine multiple media such as texts, voice, image, animation and videos in certain software's to transform it into more practical and interesting technology Medias for the teaching and learning.

Preschool teachers have important roles in the implementation of the government policy in using of ICT in the classroom because at this stage, children need early exposure towards the use of ICT so that its use can be very beneficial. The use of ICT is in line with the 1996 Education Act which involved early childhood education aged four to six years old. This 1996 Education Act has also stated that the program is aimed to develop the children's potential from the aspects of physical, emotional, spiritual and intellectual so that children can grow up to be more balanced and harmonious. Preschool education is very important in building the basic skills of literacy and numeracy among students. Preschool education has also been extended to the development of students' psychology and through social interaction, the aspects of mental, emotion, social and spiritual among students can be stimulated. Conducive preschool environment is important for the development of personality, psychology and intellectual among children. In Malaysia, the preschool education is provided by the public and private sectors, and it is hoped that the private sectors can play their bigger roles to improve the quality of preschool education.

A creative teachers know how to make conducive classrooms, most likely pasca COVID -19, education system are changing to from traditional to ICT method. Thus will encourage preschool teachers to increase their skills, knowledge and improve positive attitudes using ICT in the classroom.

Malaysia Education Blueprint
The 1996 Education Act which was approved has given a significant change to preschool education. Preschool education has been included in the National Education System. The Act has given the emphasis on the preschool education for children aged 4-6 years old. The change in the policy shows the Ministry of Education has always put the effort to maintain and improve the quality of preschool education. The National Preschool Curriculum is designed as an effort to align and improve the quality of preschool education. It has been the standard reference documents to all kindergarten entrepreneurs as stated in the amendments of the 1996 Education Act (Preschool Education). An effective early childhood education requires universal, well-designed, and able to meet the current needs of students. The National Preschool Curriculum includes all the universal aspects needed for the development of the children: language and communication, cognitive development, spiritual and moral, socioemotional, physical and creativity and aesthetics. The National Preschool Curriculum emphasizes on the components of Language and Communication as an effort to develop the students' language literacy, interaction, and communication skills as well as build students' self-confidence to face various challenges in the globalization world. The effectiveness of its implementation depends on implementers who really understand and appreciate and can implement the curriculum as desired. Therefore, the Ministry of Education has prepared the Preschool Curriculum Syllabus as a support document to assist teachers and kindergarten entrepreneurs to implement the curriculum effectively.

One of the elements in the Malaysian Education Blueprints 2017 guidelines is the national education philosophy, the government desire to produce balanced and harmonious citizen in the aspects of physical, emotion, spiritual and intellectual, thus, produce balanced human

capital in all aspects of life. One of the human capitals is the integrations of information and communication technology in the classroom.

This desire will not be achieved if there is no effort from all parties involved such as preschool teachers, parents, and students themselves. The preschool education refers to the 1996 Education Act which is the education program for students aged 4 to 6 years old (Ministry of Education, 2013). This program and its activities follow the preschool curriculum guidelines based on the National Education Philosophy, approved by the Minister under Section 22. The aim of the preschool education is to develop the overall potentials of the children in the aspects of physical, emotional, spiritual, intellectual, and social through a safe and productive learning environment as well as fun, creative and meaningful activities. Thus, this will also develop skills and self-confidence towards the current situation, overcome challenges and become responsible when children are enrolled in primary schools later (Curriculum, 2010).

National Preschool Standard Curriculum (NPSC)
The National Preschool Standard Curriculum is a document designed as the guidelines towards the implementation by the Malaysia Ministry of Education to ensure all the policies are implemented based on NPSC which was revised in 2017. The emphasis is given on various fun teaching and learning approach. In addition, NPSC also emphasizes the overall and integrated potential development of students aged four to six years old in the aspects of physical, emotional, spiritual, intellectual, and social through safe and productive learning environment as well as fun, creative and meaningful activities. This is to develop skills, form positive self-concept among students in preparing them to face challenges and able to follow the next learning. The rearrangement of NPSC framework is conducted as an effort to reinforce the preschool curriculum in line with the National Education Philosophy. In NPSC 2010, it is stated that preschool teachers need to master the knowledge and skills based on technology which is also introduced to students and taught through the support of Science and Technology. At the same time, teachers need to vary their teaching and learning approaches and techniques Jain (2017) also (Sharifah & Kamarul., 2011). As preschool teachers, the knowledge of technology and skills which relate to learning approaches and techniques is very essential to deliver the classroom teaching and learning. The knowledge of technology is very essential among preschool teachers. This knowledge includes the use of technology and its sources to be integrated with effective teaching methods.
The National Preschool Curriculum is the standard reference document which needs to be followed and used by all kindergartens all over the country. This standard reference document has set the parameter and the minimum teaching and learning content which need to be implemented by all kindergartens. At the age of 4 to 6 years old is the formative stage in the development of a child. Therefore, this curriculum is designed with the aim to nurture students' overall and integrated potentials from the aspects of mind and creative development, nurturing value practices based on religion and moral, emotional strengthening and stability, and physical productivity in preparation to live in a community and towards the formal education of primary school. This desire can be achieved by emphasising on the approach of playing while learning which is flexible, informal, safe, comfortable, and fun. Teachers and kindergarten entrepreneurs need to plan and implement preschool activities which encourage nurturing of social skills and disciplined behaviours. Students are guided to have the awareness towards self, family, environment, and country so that they become responsible citizens and contribute towards the development of the country.

Development of the use of ICT among preschool teachers
In the developed countries such as America and Europe, computers have been considered as an agent capable of developing the learning potentials and skills among preschool students. Same goes to Malaysia, the use of ICT among preschool teachers has been implemented in the National Preschool Standard Curriculum 2010 KSPK (2010) which includes Education Technology; however, amendment was done to NPSC in 2017 in which ICT is made as one important element across the curriculum. This has led to introducing smart schools and the use of VLE Frog (Hajar & Kuligari, 2017).

In 2008/2009, NPSC was reviewed. The National Preschool Standard Curriculum (NPSC) designed was used starting from January 2010. NPSC is designed by emphasising the content standard and learning standard need to be known and able to do by children aged four to six years old. The content standard and learning standard are based on knowledge, basic skills and values in the six learning elements. The NPSC learning elements include (a) communication, (b) spiritual, attitudes, and values, (c) humanity, (d) science and technology, (e) physical development and aesthetics, and (f) self-esteem. Curriculum NPSC is a modular curriculum; a curriculum in which its content is organised and delivered in sections or units known as module. There are two types of modules: core module and themed module. The core module includes subjects such as Malay Language, English Language, Chinese/Tamil Language, Islamic/Moral Education and Mathematics. The themed module is an integrated module which include all the six elements of learning and elements of creative, critical and innovative. The Themed Module is designed based on issues in daily life/events of children. Preschool teachers are encouraged to use ICT in teaching and learning across the curriculum. ICT approach is used to assist the teaching and learning process, find information, interacting with materials for self-learning and with peers and enrich the learning experiences. To ensure the success of this plan, the Ministry of Education has supplied all preschool classes with computers and software to be used by preschool students (Lim, 2007).

The widely use of ICT has included education field as well. ICT can be defined as anything that enables us to find information or communicate with each other (Nuraimi & Fariza, (2017) and Bolstad, 2004). The use of ICT in the process of teaching and learning refers to ICT being used wholly, planned, and suitable to develop the process of efficiency and effectiveness (KPM, 2001). Apart from this, from the perspective of early childhood education, the use of ICT is more to the basic use of ICT including software and hardware of computers (laptop, desktop), audio, digital camera and video camera, software and creative and communication materials, the internet, printing, interactive stories and devices, as well as other sources (Rohidah, 2015) and (Bolstad, 2004; Corr, 2006).

Importance of ICT to Children
The use of variety of methods in learning such as constructivist method is more effective in creating active learning and encouraging children to enhance the knowledge and skills of computers Robiah & Sakinah (2007) either Sandra, et.al (2013) and diversifying learning methods to preschool students.

The use of ICT in classroom learning has provided more space for the implementation of constructive teaching and active learning. The integrations of ICT has also proven to give positivity impacts to preschool children for self-preparation Rahman et.al., 2013). Children

are the assets to the country in which they will inherit life and harmonious nation in the future, in line with the National Philosophy to produce harmonious and balanced citizens in term of physical, emotional, spiritual, and intellectual (Nik, , 2010). Personal development and intellectual ability of preschool children must be structurally and systematically developed so that they grow up as individuals who are able to master the concept of learning more effectively. In addition, indirectly this will produce children who are able to think creatively and skilful in solving problems. Therefore, the use of ICT among children cannot be taken lightly. Preschool teachers are very important individuals as the instructional application technology, which is information and communication technology, they bring a new paradigm shift in education and have been an important need in the teaching and learning of the 21st century (Fatimah, 2017). Instructional technology means a teaching method which uses technology tools as the facilitation to teachers so that the planned teaching aims can be achieved easily, thus, brings various changes and improvement in education particularly on teachers' TnL (Supramaniyam, 2015). This is in line with the Malaysia Ministry of Education (MOE) policy which always ensure teachers get the benefits of ICT not only at the management level but also the application of ICT in the TnL process to the maximum possible level. The continuous application of ICT as teaching aids in TnL can also ecourage students to be creative, thus, develop the quality of learning in classrooms (Ruuhina, 2018; National Preschool Standard Curriculum and Assessment, 2017).

The use of ICT is important as it provides benefits to teachers, especially preschool teachers. ICT has many benefits to preschool teachers. Atan & Andrew, 2010; Nuraimi & Fariza, 2013; Sharifah & Kamarul. Z, 2011, stated that the use of ICT does not only facilitate the preparations of teaching aids and shows the improvement is terms of their generic skills but also improves the quality of teaching among preschool teachers to be more effective. In addition, ICT makes the teaching and learning process more interesting and more effective compared to traditional-based teaching.

Challenges of Using Information and Communication Technology in the Teaching and Learning among Preschool Teachers
The explosion of technology is blooming nowadays which leads to the use of ICT in education has given many benefits (Johan, 2010). The use of ICT is something very beneficial to all, especially to preschool teachers. It does not only assist the management tasks but also help children to generate creative ideas in facing the real world.
In the application and implementation of education policies, particularly preschool education, there are challenges or obstacles need to be overcome, this includes the use of ICT itself among preschool teachers. This might be because it involves skills, knowledge about attitude as well as the facilities provided. Other than this, the obstacles in the aspects of playing method in preschool education is due to teachers' understanding towards playing using technology is lacking.
Sharifah and Aliza (2012); (2013), in their study have stated that the method using ICT in the process of teaching and learning is very suitable to be used to generate minds from childhood. Although studies have indicated that there is improvement in the aspects of students' cognitive with the use of information technology in the process of teaching and learning, problem of difficulty as well as the inefficient use of information technology still exists in schools. The public assumption stating that if there are software and hardware provided in schools, the use of information technology will happen automatically is less accurate because

one of the determinants of success or failure is teachers. There are several challenges faced by teachers in the application of information technology in the process of teaching and learning.

Obstacles in the use of information and communication technology in the process of teaching and learning among preschool teachers

The use of ICT is convenient to the world of education. This convenience has benefitted preschool teachers because indirectly it assists preschool teachers to improve the quality of classroom teaching and learning. ICT has also benefited preschool teachers. Atan & Andrew, 2010; Nuraimi & Fariza, 2017; Sharifah & Kamarul. , 2011, stated that the use of ICT not only facilitates the preparations of teaching aids and shows the improvement is terms of their generic skills but also improve the quality of teaching among preschool teachers to be more effective In addition, ICT makes the teaching and learning process more interesting and more effective compared to traditional-based teaching.

In preschool education, teachers must use various activity methods which are suitable for self-development, ability, talent and interests of students. Teachers need to conduct activities which involve students actively so that learning becomes more meaningful, effective and fun. Those activities need to be planned and organized carefully and systematically to ensure every student gets equal opportunities as well as gains various real learning experience as individuals', the whole class or in groups. The use of information and communication technology in the process of teaching and learning as one of the ways to improve the effectiveness of preschool teaching and learning. Children nowadays are the computer generation (Papert, 1996). Technology can play an important role in the process of teaching and learning program among children (Haugland & Wright, 1997). ICT offers new approach to learn and master new skills. Therefore, children need to be exposed to ICT in a meaningful way. If ICT is not fully integrated into the curriculum as a whole, it can leave negative effects on children's creativity (Haugland, 1992). Because of this awareness, in 2002 ICT programs KPM (2003) for preschools are given the priority and has been made as an important element in which it is not only considered as a component in the National Preschool Curriculum but also the use of ICT in teaching and learning approach has become the priority.

Conclusion

The use of ICT among preschool teachers have given positive impacts in the education world, especially among preschool students. This is because the early exposure to children gives positive impacts on their preschool life.

Preschool education programs have to be suitable to children's development so that they can stimulate thinking, build positive attitudes and good manners, develop fitness and health towards optimum productive potentials. Therefore, the preschool education curriculum focuses on the children's development as a whole, balanced and integrated. Flexible learning approach and comfortable, safe and cheerful learning environment can encourage the sense of curiosity, adventure and exploration as well as give new experiences to children.

Therefore, it is hoped that preschool education programs can be the basis to produce students who are confident, high ambitions, endurance, fighting spirit, persistent and capable of self-change. All the basis built within students contribute to the progress of family, community, nation and country.

The success and effectiveness of implementation on certain curriculum depend on the understanding and appreciations of classroom implementers. Nevertheless, implementers

can tailor the content of a curriculum to the environment and situation. Implementers also need to have the knowledge about children's psychology, aware of children's differences in terms of ability, interest and background as well as sensitive towards the current changes and development in education. Thus, enable teachers to conduct the process of teaching and learning based on practices which suit the development of students (ABP).

ICT approach is used to assist the process of teaching and learning, find information, interaction with self-learning materials and peers; and enrich the learning experiences.

References

Ahmad, E., Baharom, M., & Nasrah, M. (2007). Peranan Multimedia di dalam Pembelajaran Kanak-Kanak. *Seminar Kebangsaan JPPG 2007: Teknologi Dalam Pendidikan, 18-20 November 2007, Hotel Royal Adelphi,* Seremban.

Bolstad, R. (2004). The role and potential of ICT in early childhood education A review of New Zealand and international literature .*New Zealand Council for Educational Research*

Corr, A. C.(2006). Children and Technology: A Tool for Child Development. *The National Children's Resource Centre*

Kementerian Pelajaran Malaysia. (2016). *Kurikulum Standard Prasekolah Kebangsaan.*Bahagian Pembangunan Kurikulum.

Kementerian Pendidikan Malaysia. (1996). *Akta Pendidikan.*

Lee, B. N. (2013). Sekolah Pendidikan Dan Pembangunan Sosial Universiti Malaysia Sabah. *Seminar Pendidikan Sejarah dan Geografi 2013* (UMS, 29 – 30 Ogos 2013) 106

Norijah, M., Haslina, H., & Nor, M. Z. A. (2016).Tahap kesediaan Pengintegrasian Teknologi Maklumat dan Komunikasi (ICT) dalam Pengajaran Terhadap Murid-Murid Pra Sekolah : Satu Tinjauan.

Namiha, Y., & Suziyani, M. (2019),Tahap Pengetahuan dan kemahiran Guru Prasekolah dalam Mengintergrasikan Teknologi Maklumat dan Komunikasi (TMK) di Bilik darjah.*e-prosiding Persidangan Antarabangsa Sains Sosial dan Kemanusiaan 2019 24-25 April 2019 Kolej Universiti Islam Antarabangsa Selangor.eISBN:978-967-2122-71-5*

Robiah & Sakina. (2007). ICT dalam Pendidikan: Prospek dan Cabaran dalam Pembaharuan Pedagogi. Pendidikan *Jurnal Pendidikan 32 (2007) 139-152*

Sandra, R., Abu Bakar & Norlidah. (2013).Penggunaan ICT Merentas Kurikulum Standard Prasekolah Kebangsaan (KSPK) : Tinjauan Di Prasekolah Kementerian Pelajaran Malaysia. *Jurnal Kurikulum & Pengajaran Asia Pasifik - Oktober 2013, Bil. 1 Isu 4*

Sharifah, S. A. (2009). *Aspek Keselamatan Taman Permainan Kanak- kanak.DP. Jilid 9, Bil. 1/2009*

Sharifah, P., & Kamarul, A. S. (2011). Tahap Kesediaan Penggunaan ICT dalam Pengajaran dan KesannyaTerhadap Hasil Kerja dan Tingkah Laku Murid Prasekola*h,* J*urnal Pendidikan Malaysia 36*(1), *25-34*

Ting, K. S., & Woo, Y. L. (2005). Penggunaan ICT Dalam Proses Pengajaran Dan Pembelajaran Di KalanganGuru Sekolah Menengah Teknik Dan Vokasional: Sikap Guru, Peranan ICT Dan Kekangan / Cabaran Penggunaan ICT. *Seminar Pendidikan 2005,Fakulti Pendidikan UTM 15 Okt. 2005*

Yahya, O., & Roselan, B. (2015). Aplikasi Komputer Dalam Pengajaran Bahasa : Penguasaan Guru dan Kekangan dalam Pelaksanaan. *1st International Malaysian Educational Technology Convention.*