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The Readiness of Preschool Teachers in Integrating 4th Industrial Revolution Skills in Classroom

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Abstract

The use of Information Communication and technology (ICT) in education enhances the quality of education in line with the Fourth Industrial Revolution 4.0 (IR4.0) as there is an increasing demanded for ICT to be used in the workplace. The Technical and Vocational Education and Training (TVET) is a program designed to prepare students for the workplace in line with the IR4.0 vision. As the demand for ICT competent workers increase, the use of ICT methods in the classrooms to cater for TVET programs are becoming more and more important. It is important that we prepare our next generation from an early stage the familiarization of technology in their daily lives. The purpose of this research is to investigate the readiness of preschool teachers in integrating IR4.0 skills in classroom. This research uses a survey distributed through social media and consisted of 302 respondents whom are preschool teachers in the Kota Kinabalu Sabah, Malaysia. The reliability of the instrument used was verified to be larger than 0.6 for each element of the instrument by calculating the Cronbach's Alpha value. A 4- and 5-point Likert Scale was used in this research. The findings from this research indicated that preschool teachers in Kota Kinabalu Sabah has a positive attitude towards the implementation of ICT in the classroom is positive (M = 3.11, SD = 1.36). The ICT skill level of the preschool teachers are high (M = 2.89, SD = 1.45). The effectiveness of ICT towards the preschoolers was at a moderately high level (M = 3.27, SD = 1.24). The frequency in which teachers faces obstacles when using ICT was at a moderate level (M = 2.44, SD = 1.28). In conclusion, this research findings shows the preschool teachers of Kota Kinabalu Sabah, Malaysia is ready to use ICT in the classroom to prepare for the IR4.0 demands.

Keywords: Readiness, Integrating, Industrial Revolution, Skills in Classroom

Introduction

Technology has been slowly integrated into our lives for the past 15 years. The most recent buzzwords flying about would be Internet of Things (IoT), Artificial Intelligence (AI), Blockchain, Quantum Computing, and much more. We are living in a world where technology has been woven into our lives and in our industry. The advancements have enriched our lives in the way we do things by saving time and energy. A study done by the Internet World

Statistics regarding the total internet users in 2018 shows that more than 4.2 billion people are actively using the internet. Watching YouTube and vlogs have become a natural way of learning for today generation. As time progresses, the way we learn things changes as well, and we must be able to keep up with the progress. Therefore, education has to be reconceptualized for the fourth industrial revolution (IR4.0). The Organization for Economic Cooperation and Development (OECD) (2019), mentioned that the biggest threat to our school systems today is not that they're ineffective or inefficient. The biggest threat is that it becomes obsolete because the world requires a different set of skills. To counter this, the Malaysian Ministry of Education has emphasized on the integration on the Technical and Vocational Education and Training (TVET) program into more schools to prepare our nation for the increasing demand of Information and Communications Technology (ICT) based skillsets in the future. According to Kannan (2019), the Malaysian Ministry of Education is committed to bring up TVET to enhance the education quality in line with the IR4.0. Since the world demands the next generation to have a stronger command of technology, schools with TVET programs need to be ready to adopt the use of ICT in classrooms at an early age. The valuable skillsets that the TVET program has to offer should be made mainstream so that more preschools will adopt this change. Malaysians Education Minister Datuk Seri Idris Jusoh said to Bernama (2017), that the core subjects for TVET should be taught at the preschool level to face the upcoming changes in the world. Datuk Seri Idris Jusoh also stated that preschools need to take action to emphasize the teaching of mathematics and science at the preschool stage. The future of the Malaysian Education system is heading towards a digital and cyber domain where new methods and skills will be needed to keep up with the growing trend. Thus, it is important that ICT is properly integrated in all our education program whether it is the vocational or non-vocational schools. Implementation of ICT is the latest phase of preschool education. The introduction of ICT in preschools has seen rapid growths because it has been proven to help teachers in performing their tasks. The initiative to push for ICT in classroom is driven by the benefits that it offers such as instantaneous information, media-rich communication and powerful educational tools.

There have been many literatures that suggest that ICT plays an important role during a child's early age. A study done by Amin, (2009), shows that young children in classrooms using ICT are more motivated and take more initiative in the classroom. Some slower children are shy to ask teachers to repeat when they do not understand the lesson with the fear of being judge by their peers. By having a classroom where each student is given their own personal computer, children can progress with their own pace. Children are also able to repeat topics which they find difficult without interfering with the progress of the entire class. According to Sandra (2013), the interactive audio and visual paired with student's ability to learn at their own pace helps them gain interest at an early age in what they are learning and subsequently understand the subject better.

In Malaysia, ICT has been made as a part of the National Preschool Curriculum (KSPK) in 2003. The Malaysian Ministry of Education recognizes the importance of integrating the use of ICT even at the preschool level as the benefits are very promising for the development of the students and for their future roles in the industry. Vespanathan (2015), states that the use of ICT in other first world countries have proven to create a creative and innovative environment for young children. It is important that we move towards to goal of the IR4.0 to create a smarter and more efficient world. As we move into a word dominated by technology

where our process is mostly automated, we need to prepare our future generation for this leap. This can only begin if we start with the next generation, by teaching and guiding them to not be afraid of technology. We as educators need to be ready for this wave and to be equipped with the tools and skills necessary to enhance the education system for our children. However, before we start, we must be ready even at an early stage. The purpose of this study aims to investigate the readiness of preschool teachers in the state of Sabah, Malaysia to use ICT in the classroom for teaching to prepare preschool children for the 4th industrial revolution.

Problem Statement

The Readiness sub index measures the extent to which a country has in place the infrastructure and other factors to support the uptake of ICTs. According to The Networked Readiness Index 2016, Malaysia ranks 71 out of 139 countries in terms on infrastructure readiness but ranked 30 out of 139 in terms of ICT usage. From the report, it shows that although Malaysians do not have the best infrastructures, they use ICT extensively in their lives. Readiness to use ICT in the preschool setting is of essence when teachers adopt the usage of ICT in teaching and day to day work. However, a study carried out by Chung, Ching, Melvina and Badusah (2010), shows that less than 50% of the teachers use ICT during their teaching sessions. It was found that in their study, teachers do not have the confidence to use ICT during the lesson and they lack the skills to effectively use ICT in class. They find it more of a hassle to use ICT rather than the conventional teaching methods. Before we can address the issue, we first have to understand why teachers are having doubts about using technology in their classrooms. This paper aims to design a study to find the root cause of teachers struggles in using technology in order to encourage them to use it more in their classrooms. Teachers in different states and cities faces different difficulties and therefor it is important to find a solution that works for a specific sample. At the moment, there are not many research that focuses on teachers in Kota Kinabalu Sabah, Malaysia.

Teachers are the front line in integrating ICT into our education system and will not be possible if teachers do not have the skills to teach using ICT.

The Malaysian Ministry of Education has addressed this issue and launched a program called Program Pembangunan Pendidikan Malaysia (PPPM) 2013 – 2025, which ensures that all teachers, including preschool teachers, graduating from Malaysia Teaching Collages or higher institution will have basic computer knowledge. This effort is to help improve teacher's skill when it comes to ICT. The Malaysian Government has invested a lot of funds in the education system as seen by the PPPM 2013 – 2025 initiative. This is a step-in preparing preschools with the infrastructure necessary to implement ICT in the classrooms. However, this implementation depends on the readiness of preschool teachers to adopt the use of ICT in their teaching. According to Rais, Ahmad, Saleha, and Adira (2015), lack of skill is one of the factors affecting readiness. A teacher who lack the knowledge on how to use ICT will not be able to fully utilize the facilities provided. A survey was conducted by Berni, Richard, and Bo, (2013), 53.6% of teachers stated that they do not use ICT in classroom due to lack of training provided. This causes teachers to lack confidence when using ICT equipment in class. Lack of skills when trying to use ICT in classroom might cause disruptions due to technical errors which can be frustrating and demotivating for the teachers. By understanding the level of ICT competency of the teachers, proper training can be provided to help teachers gain the skills necessary to adapt to the use of ICT in the classroom.

Having enough technical support can also contribute to the readiness of preschool teachers using ICT in classroom. A study by Ghavifekr (2016), shows that teachers give up using ICT in their teaching sessions due to lack of technical support. Chen, Chen, Lin, and Liu (2018) mentioned that preschool teachers are occupied with their jobs and do not have the time to fully understand how an ICT equipment works. It will be the jobs of the technical support to assist teachers when teachers or students face problems. According to Ghavifekr and Rosdy (2015), When there is a classful of students, each having their own personal computer, the teachers will need additional help to assist if any technical difficulties arise. According to Sua (2010), other obstacles faced by teachers in Malaysia are lack of time, and facilities. A simple way for the schools to overcome lack of facilities is to invest more into buying equipment. However, it is important to gauge how ready the teachers are before investing in additional equipment. This study will help understand the obstacles faced by preschool teachers so that necessary steps can be taken to overcome them.

It is important to be able quantify all the problems mentioned above in order to fully understand and tackle the problems faced by teachers. As early education is of vital importance, it is important to address this issue even at preschool level. By overcoming these issues, it will be a step towards properly helping preschool teachers integrate IR4.0 skills in their classroom.

Therefore, this study aims to addressed:

- What is the teachers' attitude towards the use of ICT in the classroom?
- What is the level of skill for preschool teachers to use ICT in the classroom?
- How effective is the use of ICT in the classroom?
- What are the obstacles faced by teachers during the use of ICT in the classroom?

Research Methods

In order to satisfy the objectives of this paper, a quantitative study was held. The purpose of this study is to understand the attitude, skills and perception of preschool teachers. According to Lee (1992), since this study analyses the thoughts and opinions of preschool teachers using a Likert Scale, a quantitative approach is used. The primary reason why this methodology was chosen because this paper generates numerical data to support this paper finding which a qualitative research method is not suitable to be used. From the data obtained from a quantitative study, mathematical data can be used to justify the findings of this study and be compared with other studies. Quantitative data were gathered using a 4 and 5-point Likert Scale Questionnaire. The questionnaire was constructed based on study regarding teacher readiness to use ICT in classroom done by other researches. The questions were taken from verified researches and government sectors and have been proven to be reliable. The questionnaire was constructed with the objective of the paper in mind and the questions were picked to answer the research questions. To get a good representation of the population, a large sample size is required, thus, an efficient way to obtain and tabulate data is required. In order to ease data collection and to encourage the use of technology, the research forms were created with Google forms and distributed using social media such as Facebook, Whatsapp and Telegram. The research aims to understand the readiness of preschool teachers in Kota Kinabalu, Sabah Malaysia regarding the integration of ICT in their classrooms, therefore the targeted population are the preschool teachers in the area. The form was only distributed to preschool teachers located in the area and is one of the

prerequisites for filling out the form aside from being a preschool teacher. This ensures reliability in the acquired data. Based on a list obtained from the Ministry of Education, the number of preschool teachers was approximated to be 500 preschool teachers. In order to accurately represent the population to a confidence level of 99% and error margin of 5%, a sample size of at least 286 respondents is necessary. Sampling method used for this study was Convenience Sampling.

According to Etikan, Abubaka, Musa, and Alkassim (2016), convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher. This method of sampling was chosen because of its simplicity and enables data to be collected in a short period of time. Although convenience sampling has had its criticism about not properly representing the population, its ease and quick approach makes it favorable for this research. This methodology of data construction and collection was designed to ensure data is easily collected and analyzed. Based on the population size and the nature of the research, this methodology is suitable to address the research objectives.

Research Instrument

Research instrument gives a way to collect, measure, and analyze data related to the subject. This study uses a 4 and 5-point Likert Scale Questionnaire to quantify the readiness of preschool teachers to use ICT in the classroom. The research instrument was constructed to answer all the research questions and was adapted from the Teacher Questionnaire on the use of ICT (2015), by Izham and Noraini (2007). The questionnaire consists of 46 questions and separated into 5 sections which includes the respondent's information, Teachers attitude towards using ICT, Teachers skill towards ICT, Benefits of using ICT and Obstacles faced when using ICT in classroom. Each section targeted to answer the research questions. The pilot study was carried out with colleagues and friends who worked at nearby preschools. By doing the pilot study with people who are known, this allows the pilot study results and feedback to be obtained much quicker. A sample size of 30 was chosen to verify the reliability of the instrument used. To verify the reliability of the instrument, the Cronbach's Alpha Value was calculated. The Cronbach's Alpha value varies for different research requirement. According to Keith Taber (2017), a Cronbach's Alpha value of 0.7 or more is acceptable. The alpha value for each section of the questionnaire are all larger than 0.7, indicating a reliable research instrument.

Table 1 –
Cronbach's Alpha value for each section

Title	Alpha (α)
Teachers attitude towards using ICT	0.7838
Teachers skill towards ICT	0.8049
Benefits of using ICT	0.7137
Obstacles faced when using ICT in classroom	0.7351

Research Results

This section presents the results obtained from the actual study. A total of 302 participants who were preschool teachers in Kota Kinabalu Sabah, Malaysia took part in the survey. The data that was collected through google forms was exported as a worksheet for calculations. The results will be presented based on the different sections of the questionnaire.

Teachers Attitude towards Using ICT

The table below shows the response for this section. The numbers indicate the how much the respondents agree with the statements where 1 indicates strongly disagree, 2 indicates disagree, 3 indicates no opinion, 4 indicates agree, and 5 indicates strongly agree.

Table 2:
Teachers Attitude Towards Ict

Item	***n*(*f*)**				
	1	**2**	**3**	**4**	**5**
Teachers are interested to learn different ICT Applications	24 (7.9%)	44 (14.6%)	12 (4.0%)	167 (55.3%)	55 (18.2%)
ICT improves teaching	44 (14.6%)	77 (25.5%)	5 (1.7%)	156 (51.7%)	20 (6.6%)
Teachers enjoy using ICT in classrooms	22 (7.3%)	20 (6.6%)	40 (13.2%)	150 (49.7%)	70 (23.2%)
ICT helps improve communications between teacher and student	112 (37.1%)	40 (13.2%)	23 (7.6%)	83 (27.5%)	44 (14.6%)
Teachers will recommend their friends to use ICT	88 (29.1%)	22 (7.3%)	20 (6.6%)	151 (50.0%)	21 (7.0%)
Appreciates books more than the use of ICT	140 (46.4%)	78 (25.8%)	23 (7.6%)	42 (13.9%)	19 (6.3%)
Teachers find it hard to master ICT	23 (7.6%)	152 (50.3%)	15 (5.0%)	98 (32.5%)	14 (4.6%)
ICT makes finding new information easier	15 (5.0%)	14 (4.6%)	9 (3.0%)	231 (76.5%)	33 (10.9%)
Teachers are proud with their ICT knowledge	47 (15.6%)	77 (25.5%)	10 (3.3%)	123 (40.7%)	45 (14.9%)
Mean (M)	**3.11**				
Standard Deviation (SD)	**1.36**				

From the table above, the average response of the preschool teachers *(M = 3.11, SD = 1.36)* responded that they agree with the use of ICT in classroom indicating a positive attitude towards ICT. The mean of 3.11 out of a 5-point Likert scale shows that the result has a positive inclination toward teachers having a positive attitude.

Teachers Skill towards Using ICT

The table below shows the response for this section. The numbers indicate the level of skill where 1 indicates low, 2 indicates medium, 3 indicates high, and 4 indicates very high.

Table 3 –
Teachers skill towards ICT

Item	***n*(*f*)**			
	1	**2**	**3**	**4**
Use Microsoft Word to Create Text	10 (3.3%)	13 (4.3%)	123 (40.7%)	156 (51.7%)
Use E-mail to communicate	16 (5.3%)	45 (14.9%)	167 (55.3%)	74 (24.5%)
Take and Edit photos	11 (3.6%)	35 (11.6%)	167 (55.3%)	89 (29.5%)
Use Microsoft Excel	33 (10.9%)	89 (29.5%)	106 (35.1%)	74 (24.5%)
Use Microsoft Excel to plot a graph	66 (21.9%)	82 (27.2%)	106 (35.1%)	48 (15.9%)
Use Microsoft Power point to create a slide with animations	33 (10.9%)	90 (29.8%)	127 (42.1%)	52 (17.2%)
Mean	**2.89**			
Standard Deviation	**1.45**			

From the table above, the average response of the preschool teachers *(M = 2.89, SD = 1.45)* responded that they have a high level of skill when it comes to using ICT. The mean of 2.89 out of a 4-point Likert scale shows that the result has a strong positive inclination toward teachers having a high skill towards the usage of ICT.

Benefits of Using ICT

The table below shows the response for this section. The numbers indicate the how much the respondents agree with the statements where 1 indicates strongly disagree, 2 indicates disagree, 3 indicates no opinion, 4 indicates agree, and 5 indicates strongly agree.

Table 4 –
Benefits of ICT

Item	*n(f)*				
	1	**2**	**3**	**4**	**5**
Children pay more attention in class	10 (3.3%)	30 (9.9%)	2 (0.7%)	150 (49.7%)	110 (36.4%)
Children are more interested in the teachings	20 (6.6%)	30 (9.9%)	50 (16.6%)	131 (43.4%)	71 (23.5%)
Children require less help during the lesson	50 (16.6%)	91 (30.1%)	110 (36.4%)	31 (10.3%)	20 (6.6%)
Children understand what is being taught	15 (5.0%)	15 (5.0%)	221 (73.2%)	20 (6.6%)	31 (10.3%)
Children remember what was taught	10 (3.3%)	30 (9.9%)	171 (56.6%)	40 (13.2%)	51 (16.9%)
Children disturb the class less frequent	90 (29.8%)	61 (20.2%)	110 (36.4%)	31 (10.3%)	10 (3.3%)
ICT helps children carry out their tasks	44 (14.6%)	47 (15.6%)	55 (18.2%)	123 (40.7%)	33 (10.9%)
ICT helps children gather information	57 (18.9%)	88 (29.1%)	22 (7.3%)	101 (33.4%)	34 (11.3%)
ICT helps children work in group	10 (3.3%)	77 (25.5%)	56 (18.5%)	99 (32.8%)	60 (19.9%)
ICT helps children solve problems based on their abilities	25 (8.3%)	80 (26.5%)	20 (6.6%)	132 (43.7%)	45 (14.9%)
ICT motivates children	34 (11.3%)	44 (14.6%)	13 (4.3%)	192 (63.6%)	19 (6.3%)
ICT helps improves children' achievements	55 (18.2%)	43 (14.2%)	23 (7.6%)	124 (41.1%)	57 (18.9%)
ICT helps student achieve Higher Order Thinking	66 (21.9%)	42 (13.9%)	19 (6.3%)	120 (39.7%)	55 (18.2%)
ICT helps improve student's ethics when using technology	12 (4.0%)	42 (13.9%)	70 (23.2%)	80 (26.5%)	98 (32.5%)
ICT prepares children for the future.	6 (2.0%)	55 (18.2%)	15 (5.0%)	196 (64.9%)	30 (9.9%)
Mean	**3.27**				
Standard Deviation	**1.24**				

From the table above, the average response of the preschool teachers *(M = 3.27, SD = 1.24)* responded that they agree that ICT brings benefits to the children. The mean of 3.27 out of a 5-point Likert scale shows that the result has a positive inclination toward teachers view towards the benefits of ICT to the children.

Obstacles Faced When Using ICT

The table below shows the response for this section. The numbers indicate the frequency where 1 indicates almost never, 2 indicates rarely, 3 indicates occasionally, 4 indicates often, and 5 indicates very frequent.

Table 5 –
Obstacles faced when using ICT in classroom

Item	*n(f)*				
	1	**2**	**3**	**4**	**5**
Insufficient computers	147 (48.7%)	101 (33.4%)	22 (7.3%)	18 (6.0%)	14 (4.6%)
Slow internet speed	45 (14.9%)	86 (28.5%)	19 (6.3%)	119 (39.4%)	33 (10.9%)
Insufficient interactive screens	60 (19.9%)	92 (30.5%)	74 (24.5%)	34 (11.3%)	42 (13.9%)
Damaged computers	130 (43.0%)	72 (23.8%)	69 (22.8%)	10 (3.3%)	21 (7.0%)
Lack of technical support	31 (10.3%)	20 (6.6%)	211 (69.9%)	30 (9.9%)	10 (3.3%)
Lack of training	112 (37.1%)	54 (17.9%)	18 (6.0%)	80 (26.5%)	38 (12.6%)
Insufficient time	80 (26.5%)	76 (25.2%)	87 (28.8%)	30 (9.9%)	29 (9.6%)
Small class size	131 (43.4%)	123 (40.7%)	15 (5.0%)	23 (7.6%)	10 (3.3%)
Mean	**2.44**				
Standard Deviation	**1.28**				

From the table above, the average response of the preschool teachers *(M = 2.44, SD = 1.28)* responded that they almost never face any problems using ICT in the classroom. The mean of 2.44 out of a 5-point Likert scale shows that the result has a negative inclination toward the frequency of problems faced during the usage of ICT in the classroom.

Discussion

The results obtained from the first section shows that majority of preschool teachers have a positive attitude towards ICT. One of the factors affecting teachers' attitude towards ICT is how they perceive ICT, such as whether it is easy to be used. A study done by Philip, O (2009) shows that teachers of this generation where technology is booming have a more positive attitude towards ICT compared to older generations. This is because teachers of this generation can learn how to operate ICT equipment better and faster as they are exposed more to the use of technology. The results obtained from this research agrees with the study done by Philip, O (2009). From this study, it shows that on average, the preschool teachers in Kota Kinabalu Sabah, Malaysia have a positive attitude towards the use of ICT scoring (M = 3.11, SD = 1.36) on a 5- point Likert Scale. This is a very positive result as the teacher's attitude towards teaching ICT is one of the most important aspects to inspire and for the children to build interest in technology. A positive teacher's attitude towards ICT is vital in TVET programs and for the movement towards IR4.0.

The results obtained from the second section shows that majority of preschool teachers have a high level of skill when using ICT. The results obtained from this study agrees with the findings carried out by Sharifah and Kamarul (2011), which also shows a high level of skill among Malaysian preschool teachers. From this study, it was found that on average, preschool teachers in Kota Kinabalu Sabah, Malaysia have a high level of skill in using ICT

scoring (M = 2.89, SD = 1.45) on a 4- point Liker Scale. According to Philip, O (2009), this is because teachers of this generation were born in the technology era and are more familiar with the usage of technology compared to the generation before. Eleftheria (2017), also stated that older teachers have more difficulties adapting to newer technology compared to the younger teachers. Based on the Networked Readiness Index 2016, Malaysia has one of the highest usages of ICT in the world. It is no surprise that Malaysian preschool teachers have a high level of skill when it comes to using ICT in classroom. Aside from having a good attitude, teachers need to have sufficient knowledge to operate ICT equipment's both for the use in classrooms, but also to show children that technology is nothing to be afraid of. In TVET programs where hands-on are key components, the educator's skill plays an important role to inspire the preschoolers on the fun as well as power of technology.

The results obtained from the third section shows that majority of preschool teachers agrees that ICT brings benefits to the children. The study done by Hasnuddin (2015), obtained similar results to this research. According to Anderson and Mikesell (2017) and Fram, Kim, and Sinha (2012), ICT helps children to focus better during the lesson and helps certain student understand the lessons better with animations. From this study, it was found that on average teachers agree that the use of ICT in classroom has a positive effect on the children's learning scoring (M = 3.27, SD = 1.24) on a 5- point Likert Scale. With the use of ICT and its audio and visual capabilities, teachers can show and explain to children more abstract concepts using a more interactive and fun method when using interactive displays. This section shows that ICT will bring great benefit to the children. One of the undeniable facts in a TVET program is that it will train them to see technology as a tool and not a threat. As the industry changes to be more autonomous and fast paced, the teaching of science, math's and the introduction to technology at a young age will be extremely beneficial for the child.

The results obtained from the fourth section shows that majority of preschool teachers never face any difficulties when using ICT in class. The largest obstacle faced by teachers is slow internet speeds and lack of technical support. This result obtained from this study agrees with the findings by Kumutha and Hamidah (2014), which states that teachers do not have time to figure out how to setup certain equipment and require technical assistants. Slow internet speed and bad coverage is also a major obstacle faced by preschool teachers. This section shows that teachers these days are themselves more and more familiar with the use of technology scoring (M = 2.44, SD = 1.28) on a 5- point Likert Scale. As technology is used more and more in our daily lives, we will face less and less difficulties in using them, and in turn, not fear them as much. The same trend will be true for our next generation as well. As we pass on our knowledge to our children, they will grow to master technology as we did and continue to improve themselves. As TVET programs try to get Malaysians to be more hands-on and prepared for IR4.0, this research finding shows that we are definitely moving in the right direction.

Future Research

This research was only able to cover the city of Kota Kinabalu Sabah. Insufficient time and workforce were the two limitations of this research. A larger sample size from different geographical distribution will create a more accurate representation of the population of preschool teachers of Sabah. The collection of questionnaires was easy as everything was done with a computer. The challenge lies in the time it takes to collect the needed sample

size. In order to have a larger sample size, a better way of distributing the questionnaire should be implemented. Future researches should consider engaging in paid survey distribution sites will allow researches to reach out to a wider population. In order to overcome insufficient workforce, future researchers are recommended to work in a team. Different researches could be assigned to different areas in Sabah and will be responsible of obtaining enough samples based on the area's population. This will allow much faster data collection and better understanding of Sabah's preschool teachers population.

Conclusion

As a conclusion, this research was able to answer all the research questions related to the readiness of preschool teachers to use ICT in the classroom. From the results, it can be concluded that preschool teachers in Kota Kinabalu Sabah are ready to use ICT in their classroom. From the study, it shows that preschool teachers in Kota Kinabalu have a high level of skill when using ICT in their classroom and show a positive attitude when using it. They scored an average of 3.11 out of 5.0 on the Likert Scale. In terms on skills, it was found that on average, the teachers scored 2.89 out of 4.0 on the Likert Scale. This shows that preschool teachers in Kota Kinabalu Sabah, Malaysia, have an above average skillset towards using ICT. In terms of their confidence on how beneficial the use of ICT in classroom is towards their student, they scored 3.27 out of 5.0 on the Likert Scale showing that majority of them have a high level of belief that ICT is useful and shows that they are motivated. They also do not face any significant obstacles when using ICT in classroom where only, slightly below half of the teachers express that they face difficulty using technology in classroom averaging 2.44 out of 5.0 on the Likert Scale. In order to properly integrate ICT in preschools in Malaysia, teachers need to be motivated, have the right skills and have the right attitude. From this study, it shows that the preschool teachers in Kota Kinabalu Sabah, Malaysia fulfil this requirement. This research demonstrated the effectiveness of the methodology and the instruments used. It is important that we are able to quantify the concerns and challenges faced by teachers to help them be prepared for IR4.0. The findings, methodology and instrument designed in this research can be used to aid future researches who are perusing similar topics. Future researches could further improve on these findings by understanding the practical ways of implementing and integrating more ICT methods in our existing education system without major disruptions to the existing one. Teachers are the forefront in any education system, and we rely on them to make the system successful. The aim of the Malaysian Ministry of Education is to create a generation of technology competent individual that can contribute to the booming industry. Efforts such as the TVET program has been made to prepare people for the demands of the industry. When ICT is fully integrated into the education system, the next generation of Malaysians will not only be a book smart individual, but also a tech savvy generation who will be able to compete with the rest of the world and be part of the rising IR4.0.

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