ICT in Kindergarten Teacher in Malaysian Education System: A glimpse into KEMAS

Abdul Jaleel K. Shittu¹, Wan Rozaini Sheik Osman², Rafidah Abdul Razak³ and Adedokun-Shittu Nafisat Afolake⁴

International Telecommunication Union – Universiti Utara Malaysia – Asia Pacific Center of Excellence for Rural ICT Development

¹abdjaleel, ²rozai174, ³rafidah, ⁴nafisat @uum.edu.my
Corresponding Author: abdjaleel@uum.edu.my

ABSTRACT

Information and Communication Technology (ICT) education has been the wheel behind bridging digital division. Alas! This can’t be so without having a robust and pragmatic ICT policy in place. This paper is an outcome of research project conducted among teachers of the government sponsored-kindergarten in the rural areas (KEMAS) of northern part of Malaysia, consisting Kedah, Penang and Perlis to have a glimpse into the adequacy of ICT policy. The findings show that there is lack of awareness and probably absence of implementable policy for kindergarten. This is unlike other levels of education in the country that have been managed with comprehensive ICT policies. The paper pointed out the implications and suggestions are proffered to ascertain maximum use of ICT potentials in the Malaysian KEMAS school system and possible inclusion in the National ICT policy.

Keywords: KEMAS, IT/ICT Policy, kindergarten education, teachers, technology integration.

I INTRODUCTION

KEMAS kindergarten is a government-sponsored kindergarten for rural areas in Malaysia (Ahmad, Syed-Yahaya, Omar, Siraj & Mahmud, 2013). Although these set of kindergarten were situated in rural areas, the Government does not take the emphasis of the ICT literacy among KEMAS kindergarten with kid’s glove (Siraj, Sheik-Osman, Syed-Yahaya, Zurni & Ahmad, 2012). It is a general belief that ICT skills and facilities in the rural areas are still insufficient as compared to the urban areas. This might be due to several reasons; among them could be the dichotomy of government policies for rural and urban areas (Shittu & Adedokun-Shittu, 2011; 2008).

Studies have shown that, the early developments in the educational use of ICT occurred largely independently of any focused policy as enthusiastic educators introduced computers for which they were able to find funding and proceeded to develop approaches to working with computers in their classes (Kearns, 2004). Considering the importance of the ICT industry, Malaysian government launched seven (7) Flagship Applications that would facilitate the adoption of ICT sector among the masses as well as provide a growth platform for the industry as a whole (Frost & Sullivan, 2010).

The field of education has not been unaffected by the penetrating influence of information and communication technology (Adedokun–Shittu & Shittu, 2014; 2011). Undoubtedly, ICT has impacted not only on the quality and quantity of teaching, learning, and research in traditional and distance education higher institutions, but, also on the pre and post primary school education foundation for the children. As ICT has enhanced teaching and learning through its dynamic, interactive, and engaging contents that are mostly used at post-secondary schools, this feat can also be extended to pre and post primary schools through pragmatic ICT policies.

Information and communication technology has the potential to accelerate, enrich, and deepen skills; motivate and engage students in learning; helps to relate school experiences to work practices; helps to create economic viability for tomorrow’s workers; contributes to radical changes in school; strengthens teaching, and provides opportunities for connection between the school and the world (Yusuf, 2005; Adedokun–Shittu & Shittu, 2014; 2011). With all these benefits associated with ICT, it would be better if such lofty endeavor could be inculcated into teaching and learning from tender and grassroots level, i.e. kindergarten especially the KEMAS.

II OVERVIEW OF KINDERGARTEN

There are several terms used to describe kindergarten based on different country and stake holders. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) refer to kindergarten as early childhood education and education (ECCE). In general, a kindergarten is a class for four-year-old to six-year-old children that serves as an introduction to school (wordiQ.com). Usually children attend kindergarten to learn the finer points of meeting friends (and enemies), professional authority (in the form of a teacher), playtime, naptime, drawing, music, sometimes the basics of reading and writing, and various other activities. For children who previously have spent most of their time at home, kindergarten
often serves the purpose of training them to be apart from their parents without anxiety.

A. KEMAS education

The Malaysian education system encompasses education as early as kindergarten to tertiary level. Hence, kindergarten years are very crucial, as it is the period where a child’s beginning is cultivated. To ensure that all children in Malaysia have the opportunity to begin their education at a very early age, the government in collaboration with the social welfare department organized the early childhood education program known as KEMAS kindergarten, which provides early education for children aged from 4 to 6 years old. KEMAS kindergarten, through its concept of “Learn Through Play” also captures the reading, writing, counting and reasoning skills (Ahmad et al., 2013).

There are more than 500 KEMAS kindergartens in Malaysia, always ready to take any Malaysian child regardless of their status. These kindergartens are equipped with basic classroom structure and facilities. For such reason, an effective kindergarten background will be of much help when the child moves on to school. Even though KEMAS kindergarten is open to children from all walks of life, generally, the students of KEMAS kindergartens are mostly from low-income groups from rural areas Ahmad et al, 2013; Siraj et al., 2012)

B. Malaysia Policy on ICT in Education

In 2005, Robert Kozma of center for Technology in Learning, advocated for policies that could connect ICT-based education in order to reform economic and social development, he considered ICT as major driver for national development. Singapore, Finland and Egypt were used as case studies, were he described a systemic framework of growth factors and types of development that can be used to analyse national policies and ICT-based education reform. In another study Tondeur, Van Braak and Valcke (2007) directly related national development to policies on ICT-based education.

National ICT policies have reached an established position in both developed and developing countries. A study funded by the Australian Department of Education, Science and Training revealed that most national ICT policies focus on the educational sector (Tondeur, Van Braak, & Valcke, 2007; and OECD, 2004a). Education is put forward as the central actor to pursue and attain the objectives of the ICT policy; other sectors are expected to benefit indirectly from this approach. Educational ICT policies have been designed in a variety of ways, depending on the dominant rationales that drive curriculum development (Tondeur, et al., 2007; Shittu & Adedokun-Shittu 2014).

National policymakers around the globe struggle to create conditions that support numerous economic and social developments in their countries and, on the other hand, to craft policies and programs that cope with them and harness their effects to support economic growth and the public good. Education sector is not left out and it is considered as most affected by these developments (Kozma, 2005).

Malaysian government also see the improvement on educational systems and increased educational attainment as primary ways that countries can prepare for these global, technology-based changes as envisioned by Organization for Economic Cooperation and Development (OECD, 2004a; OECD, 2004b) and World Bank World Bank (2003). And within education, ICT is seen as a way to promote educational change, improve the skills of learners, and prepare them for the global economy and the information society (Haddad & Draxler, 2002); McNamara, 2003; Wagner & Kozma, 2005).

The Ministry of Education (MOE) Malaysia introduced Smart School initiative into education system, in attempt to incorporate ICT into education curriculum. Since the launching of Smart School initiative July 1997 as one of the seven (7) flagships of the MSC Malaysia, there has been much accomplishment in integrating ICT in education, and this began with piloting the 88 Smart Schools. The 88 Smart Schools were given the ‘role’ to act as the nucleus for the reference of Smart School concepts, materials, skills and technologies developed by the MOE. In April 2006, the National IT Council chaired by the Prime Minister endorsed MOE’s proposal that MDeC undertakes a systematic transformation of the selected ‘88 Smart Schools’ into model schools. This included promoting best practices in technology-enabled teaching, learning and school management (Frost & Sullivan, 2010).

III POLICY OF ICT LITERACY IN RURAL KINDERGARTEN

Key ICT competences are needed by kindergarten teachers for the development and implementation of new technologies in their educational practice in kindergarten. As outlined in the UNESCO document “ICT competency standards for teachers” (UNESCO, 2008), in order to live, learn and work successfully in an increasingly difficult, digital and knowledge-based society, teachers must be capable of using technology in an effective way.

There are a lot of well-established early childhood educational policies, supported by national governments and educational institutions, based on the same idea: to provide an interactive and social learning experience based on children’s interest and experimentation. Many of these goals can be realized if the kindergarten teachers are equipped with ICT
skills and ICT-based educational processes in early childhood towards better preparing children for the afterwards schooling (Markovac & Rogulja, 2009).

IV THE KEMAS KINDERGARTEN CASE
This is an observatory aspect to a quantitative study involving three (3) states in the northern region of Malaysia. A total of 172 kindergartens were selected using proportionate cluster sampling method based on a list of KEMAS kindergartens available at Ministry of Women, Family and Community Development of Malaysia website (www.jkm.gov.my). Data were collected through survey method using a set of questionnaire (Ahmad, et al, 2012; Siraj et al., 2012).

The questionnaire consists of 5 parts namely profile of respondents, access to ICT facilities, ICT skills, application of ICT in the administration, the challenges in the improvement of ICT literacy and suggestions on the improvement of ICT literacy. Though the initial questionnaire failed to directly addressed government policy that governs ICT education in kindergarten. However, a further rapport and interview with some respondents created an avenue to dig into ICT policy via-a-vis pre-primary school. This development turned this study into a mixed method with a total of 172 teachers from the selected kindergartens participated in this study. The distribution of respondents according to states is presented in the following Figure 1 below.

![Figure 1: Distribution of Respondents According to States](image)

V DISCUSSION AND ANALYSIS
The statistics of ICT literacy among education levels of the teachers are shown in Table 3. For the ease of comparison, the original education levels collected which were originally based on 6 hierarchical levels were later re-categorized into 3 levels: Low, Moderate and High. The low level represented teachers with SPM level, while moderate level comprised of those with STPM and other certificates such as from polytechnics. The high level category consisted of teachers who owned at least a diploma. Further test on the groups confirmed a significant different between the Low level versus the Moderate as well as the High levels. Meanwhile, the test between Moderate and High levels showed no difference. In order to advance any policy especially ICT related one, the handlers of the policy (in this case KEMAS teachers) should be well acquainted with information technology tools and applications.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>2.098 3</td>
<td>.99710 4</td>
<td>.1151 5</td>
<td>1.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Moderate</td>
<td>2.926 1</td>
<td>.99228 5</td>
<td>.2115 5</td>
<td>1.0</td>
<td>4.38</td>
</tr>
<tr>
<td>High</td>
<td>3.324 6</td>
<td>.82133 9</td>
<td>.1087 9</td>
<td>1.0</td>
<td>4.88</td>
</tr>
<tr>
<td>Total</td>
<td>2.670 5</td>
<td>1.09186 8</td>
<td>.0879 8</td>
<td>1.0</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Based on the original teachers’ level of education (6 ordinal measures), further test on the strength of the relationship between education level and ICT literacy was conducted. The test showed a moderately positive relationship (r = 0.512) between the two variables. Therefore, for government to be able to implement effective ICT policy in pre-primary school education, the level of education among the primary schools should also be invested upon.

<table>
<thead>
<tr>
<th>Age Level</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;29 years</td>
<td>3.6780</td>
<td>.66293 3</td>
<td>.11540 2</td>
<td>1.23</td>
<td>4.88</td>
</tr>
<tr>
<td>30-39 years</td>
<td>3.1857</td>
<td>.81257 4</td>
<td>.13735 1.75</td>
<td>5.00</td>
<td></td>
</tr>
<tr>
<td>40-49 years</td>
<td>2.1942</td>
<td>.91170 6</td>
<td>.12183 1.00</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td>&gt;=50 years</td>
<td>1.7321</td>
<td>.89789 7</td>
<td>.15177 1.00</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.6187</td>
<td>1.11243 8</td>
<td>.08822 1.00</td>
<td>5.00</td>
<td></td>
</tr>
</tbody>
</table>
VI RECOMMENDATIONS

The findings show that in the case of KEMAS teachers they should be well acquainted with information technology tools and applications. The findings show that there is lack of awareness and probably absence of implementable policy for kindergarten. This is unlike other levels of education in the country that been managed with comprehensive ICT policies. Therefore, to be able to implement effective ICT in pre-primary school education, the level of education among the primary schools should also be invested upon.

The prediction is that the next three decades will see ICT being a disruptive force in education. Where large changes will occur and many schools and school systems that attempt to follow the traditional path of the past decades will not prosper. A comprehensive policy that does not only look into curricular but also put teachers into consideration should be put in place (Moursund, 2002). Having implied from the analysis above that teacher qualification and ICT proficiency are crucial, government policies should invest on KEMAS teacher training in order to nurture a sustainable ICT generation from cradle.

The ministry of education believes that the use of ICT in teaching and learning as well as in schools and educational institutions’ administration and management areas is a prerequisite for Malaysia to be a high-income nation. Therefore, there is a need for a uniform policy that could engineer a prospective and transformational education foundation throughout the KEMAS establishments.

ACKNOWLEDGMENT

This research was financially supported by the Universiti Utara Malaysia High Impact Research (PBIT Grant NO. 12160).

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