



ICT Teacher Capacity Building in Education: Lesson Learned from Successful Education Countries and Considerations for Transferring into Indonesia Context

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Abstract

ICT teacher capacity building is one of SDG4's goals, and it is one of the 21st skills to face Education in 2030 and the 21st century. Even though ICT teacher capacity building has been introduced widely by many international organizations, reviewing the practice of ICT teacher capacity building in prosperous education countries in Asia based on PISA scores, Singapore and South Korea are still valuable. Prosperous education countries positively impact the advancement of ICT teacher capacity building. This evidence will be fruitful for the ICT teacher capacity building in Indonesia since Indonesia's PISA score is lower than Singapore's and South Korea's. This paper (1). identify the key secret of ICT teacher capacity building practices in the foremost Education among Asia countries, (2). to offer several considerations based on key secret practices which may enable Indonesia to take a lesson to transfer it in Indonesia context.

Keywords: ICT Teacher Capacity Building, South Korea, Singapore, Indonesia

Abstrak

Peningkatan kapasitas guru TIK merupakan salah satu tujuan SDG4, dan juga merupakan salah satu keterampilan abad ke-21 untuk menghadapi pendidikan pada tahun 2030 dan abad ke-21. Meskipun peningkatan kapasitas guru TIK telah diperkenalkan secara luas oleh banyak organisasi internasional, meninjau praktik peningkatan kapasitas guru TIK di negara-negara dengan pendidikan maju di Asia berdasarkan skor PISA, seperti Singapura dan Korea Selatan, masih sangat berharga. Negara-negara dengan pendidikan maju ini memberikan dampak positif terhadap kemajuan peningkatan kapasitas guru TIK. Bukti ini akan sangat bermanfaat bagi peningkatan kapasitas guru TIK di Indonesia mengingat skor PISA Indonesia lebih rendah dibandingkan dengan Singapura dan Korea Selatan. Makalah ini (1) mengidentifikasi rahasia utama dari praktik peningkatan kapasitas guru TIK di negara-negara pendidikan terkemuka di Asia, (2) menawarkan beberapa pertimbangan berdasarkan praktik rahasia utama tersebut yang dapat memungkinkan Indonesia untuk mengambil pelajaran dan mentransfernya ke dalam konteks Indonesia.

Kata kunci: Peningkatan Kapasitas Guru TIK, Korea Selatan, Singapura, Indonesia

INTRODUCTION

The integration of information and Communication Technology (ICT) in education has influenced students' success in their learning in education, lifelong learning and labour market. Studies emphasize the positive effect of ICT implementation on learners in promoting motivation, increasing achievement, and engaging in metacognitive control and independent strategies (Zaiden et al., 2011; Andrea et al., 2013; Kreutz & Rhodin, 2016). Moreover, ICT plays an important role in lifelong learning for all age levels and strengthens workplace competitiveness (Ramakrishnan & Yasin, 2012; Nuria et al., 2014).

Considering these advantages, international agendas namely SDG4, UNESCO's ICT in Education initiatives, and the ASEAN ICT Master Plan, UNESCO documents and the Asia Pacific Ministerial Forum on ICT in Education (AMFIE) accentuate the essential role of teacher capacity in applying ICT in education (UNESCO, UNICEF, the World Bank, UNFPA, UNDP, UN Women and UNHCR, 2015). In other words, the process of delivering material using technology in ICT in education implementation needs teachers' ICT skills because teachers are seen as having essential roles in harnessing ICT in the learning process, which will directly impact students' ICT experience and readiness to overcome globalization competitiveness and the information and communication revolution (Meenakshi, 2013).

Successful educational countries in Asia, Singapore, and South Korea, which are ranked above the OECD average, have been successful in building ICT teacher capacity. The ICT teacher capacity building in the countries may serve as an inspiration for countries with lower PISA scores, as their strategies could be adapted to enhance ICT teachers' skills since Indonesia encounters significant hindrances in its initiatives to integrate ICT, as evidenced by its lower PISA scores. This study is intended to (1) identify key strategies from the ICT teacher capacity-building programs of Singapore and South Korea and (2) propose

recommendations for adapting these strategies to Indonesia's context. By learning from these successful models, Indonesia can boost its educational outcomes and empower its teachers to apply ICT optimally in their classrooms.

RESEARCH METHOD

This research adopts a qualitative research approach with a comparative case study design to scrutinize the ICT teacher capacity-building practices of Singapore and South Korea. The purpose is to identify key strategies from these successful education systems and provide recommendations for adapting these practices to the Indonesian context. Data collection primarily is obtained from secondary sources, comprising government reports, international frameworks, journal articles, and policy documents from UNESCO, PISA, and the educational ministries of Singapore and South Korea.

The primary method of analysis applied in this study is comparative analysis, where ICT teacher training programs, competency standards, and implementation strategies are systematically examined across the two countries. This is supported by thematic analysis to extract key themes, such as teacher professional development (TPD), lifelong learning strategies, and integration of ICT skills into classroom practices. These analyses are intended to highlight both the parallels and discrepancies in their models to ICT teacher capacity building.

A framework synthesis was combined by researchers to adapt the identified best practices into the Indonesian context. This framework considers Indonesia's unique socio-cultural, educational, and technological landscape. Emphasis is placed on integrating ICT into teacher professional development (TPD) and aligning with national standards to address existing gaps in teacher training programs in Indonesia.

Data from numerous sources are triangulated, and the research results are validated through cross-referencing with current Indonesian ICT

education policies to ensure reliability. This rigorous procedure ensures that the recommendations are both evidence-based and practical, offering worthwhile insights for enhancing teacher capacity building in Indonesia.

FINDINGS AND DISCUSSION

This study discloses key concepts in the ICT teacher capacity-building practices of Singapore and South Korea, which have steadily exceeded other countries in worldwide assessments such as PISA. Those countries show controlled and organized methods for evolving ICT skills, concentrating on pre-service and in-service training as pivotal components (Choi, et.al, 2015). Singapore accentuates integrating ICT skills into Teacher Professional Development (TPD), assuring a holistic method to providing teachers with technology-integrated classrooms. Likewise, South Korea's ICT Skill Standards for Teachers (ISST) offers defined standards for evaluating and certifying teachers' ICT skills.

In Singapore, the prospective teacher training program that was organized by the National Institute of Education (NIE), equips teachers with basic ICT knowledge and skills prior to entering the workforce (Drigas & Tsolaki, 2015). This training is supported by the Academy of Singapore Teachers (AST), which offers ongoing professional development to boost the ICT skills of in-service teachers (Dudko, S. A., 2016). The organized amalgamation of ICT skills into TPD assures that teachers are lifelong learners who always enhance their knowledge and teaching methods. This method has demonstrated impactful in facilitating creative teaching strategies and student involvement.

In South Korea, the government highlights standardized ICT training through ISST, which comprises skills namely information analysis, processing, transfer, and ethical considerations (Grzybowski, 2013). In contrast to Singapore, South Korea prioritize more on

ICT-specific training, which operates separately from larger TPD programs (MEST & KERIS, 2009).. This targeted method is planned to facilitate teachers to obtain specific technical skills (Heeks, 2001). However, the method does not integrate pedagogy and lifelong learning approaches observed in Singapore (Jung, 2000). Subsequently, South Korea's emphasis on certification motivates teachers to increase their ICT competences that assures them conforming with national standards (Kreutz & Rhodin, 2016).

From the investigation aforementioned, it really crucial to incorporate ICT teacher capacity building into both pre-service and in-service training for Indonesia (Nizam, & Santoso, A., 2013). Adapting Singapore's model of inserting ICT into TPD and lifelong learning, combined with South Korea's standardized ISST agenda, can offer a fruitful approach for overcoming problems faced by Indonesia (OECD, 2016). Singapore and Korea methods can promote the improved learning results, ICT amalgamation quality in classrooms, and students' success in the classroom in a globalized world (Song, et.al, 2003). Therefore, Indonesia must adapt these practices to enhance ICT teacher capacity-building.

CONCLUSION

ICT teacher capacity building is a critical component in enhancing the quality of education and preparing students for the challenges of the 21st century. This study highlights the successful practices of Singapore and South Korea in developing ICT competencies among teachers, which serve as valuable lessons for countries like Indonesia. Singapore's integration of ICT training into both pre-service and in-service Teacher Professional Development (TPD) assures that teachers are not only prepared with basic ICT competences but are also lifelong learners who continuously upgrade insights dealing with technological proliferations. Meanwhile, South Korea's use of the ICT Skill Standards for Teachers (ISST) emphasizes targeted ICT-specific training, enabling teachers to achieve high levels of technical proficiency.

Indonesia requires to improve its ICT teacher capacity-building method by integrating the advantages of both approaches. By incorporating ICT into TPD, as done in Singapore, pedagogy and technology are combined, while implementing a standardized framework such as ISST, as used in South Korea, offers clear standards for teacher skills. However, Indonesia must consider some problems, such as resource limitations and infrastructure insufficiencies, to ensure the effective implementation of these strategies.

By drawing lessons from these two education systems, Indonesia can create an impactful framework for ICT teacher capacity building that can achieve educational objectives and national policies. Such a methods will not only improve teachers' ICT competencies but also enhancing students' learning experiences and preparing them to thrive in a digital and globalized era.

In summary, applying ICT teacher capacity-building strategies from successful education systems is important to be conducted by governments in the Indonesian context since it can be a key role in boosting the country's education quality and preparing both teachers and students for upcoming challenges.

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