Contemporary Applications of Teaching Pedagogy for Tamil Kindergarten using Sustainable Practices

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ABSTRACT

Emerging technology becomes a part of life, and it also may reshape education system. The evolving of technologies in education and performance is yet to be implemented in the Tamil language. As of today, there is no contemporary application on the Tamil language which can encourage student-centered learning to compare as recommended by 11th Malaysian Plan. Currently, the method using at alma mater is teaching and learning using e-content, but however, kindergarten teachers are not trained to utilize these available resources. In this proposal, we would like to propose creative and interactive teaching and learning mechanism for Tamil Government kindergarten. This will be able to instil the passion for learning the Tamil language. We will be implementing three main methods to study and propose a new teaching methodology for the school without changing the curriculum. As the output of this project, we will propose a new teaching methodology using the e-content specifically for the kindergarten students. The interactive application will be developed which will be suitable for the students as well this proposed project will allow Ministry of Education to control the curriculum content. Finally, we will evaluate the quality of students based on the rubrics given by the ministry to evaluate the quality and the improvement of the students.

Keywords: Teaching, Kindergarten, student-centred learning, Tamil education

I   INTRODUCTION

Over the past decades, childhood education had received intensive attention from government sectors, educators, parents and scholars from around the world (Moss & Dahlberg, 2008). A child's preschool education is a critical phase in ensuring the child meet its full potential. Early education is seen to be the stepping stone and base for a child's future as they grow. There are many factors that affect the quality of education, especially for preschool child. Language is primarily one of those key factors to help communicate and develop understanding in the classroom (Johnson, 1995). In addition to the importance of language in early education, research also indicates that learning via a child's mother tongue can make a significant difference (Awoptu,2016; Muhammad,2014). The early use of a foreign medium of instruction fails to produce judicious quality towards fundamental education. (UNESCO, 2005).

In line with the global attention given to education which starts with the early childhood education, Malaysia is also moving towards the same direction. In the 11th Malaysia Plan (11MP) and the Malaysian Education Blueprint (MEB), the enhancement and focus on pre-school education is made a priority. The Malaysian government has introduced kindergartens in most primary schools and has seen an increase in its enrolment compared to five years ago. Children can begin their preschool education between four to six years old. Preschool education in Malaysia follows the Early Childhood Care and Education (ECCE) program. ECCE plays a vital role in a child's psychological and intellectual development (Economic Planning Unit, 2015; Malaysia Education Blueprint, 2013). Research indicates that there is a link between preschool education and increased lifetime earnings and other beneficial life outcomes (OECD, 2013). In addition to this, studies show that there is a growing awareness that early childhood education takes a key role in a child's cognitive and emotional development. Therefore, most countries have made it a priority to come up with their policy regarding preschool education that guarantees a quality preschool education (OECD, 2013).

As education is seen as an important factor for a country's economic growth (Quinn & Rubb, 2006), Malaysia is also improving its education system by modifying the delivery method for a better student outcome. This said, one of the focus on the delivery method is to enhance the implementation of Information and Communications Technology (ICT) in schools (Malaysia Education Blueprint, 2013). The fifth thrust in the Malaysian Blueprint;

ICT for education, is seen to encourage the adaptation of ICT in many sectors, which includes education. Measures such as improving career pathways for preschool teachers and introducing ICT-related innovations in the classroom to support student development is a pivotal factor in preschool education (Malaysia Education Blueprint, 2013).

With the current initiative and aim to improvise the education system in Malaysia, the Malaysian Ministry of Education had introduced kindergarten in most primary schools in Malaysia, this initiative is also taken for the Malaysian vernacular primary schools which is known as Sekolah Jenis Kebangsaan Tamil (SJKT) schools. Currently, Malaysian primary schools (which includes the SJKT) are provided with televisions and computers, but most of the teaching materials are mainly to watch and understand.

Additionally, the appropriate method of teaching language is not used in the current teaching and learning pedagogy. This is due to inadequate knowledge on appropriate usage of words and the Mother Tongue Influence (MTI) of the teaching staff. To encourage this modern concern, the system of teaching and learning process can be done by instigating the kids through a mobile or computer application to learn the language. As we are aware that children are easily access to, and fond of mobile applications, this initiative will directly help to instill and attract the children's interest to learn language in a better way. With this in mind, the objective of this study is to:

i. design and develop e-content teaching and learning methods to assist student motivation in learning Tamil language;

ii. assist to improve student performance through e-content learning method;

iii. facilitate and inspire creative learning in the Tamil language to improve student understanding; and

iv. instill the passion to learn Tamil language from young

II   RELATED WORK

In ensuring a quality education for students, it is essential for policy makers and educators to start from the root where children begin their preschool education. To warrant a good education for preschool children, the focus and importance of teaching pedagogy is seriously looked at (Alhajri, 2016; Kukulska-Hulme, 2009; Lan, Sung, & Chang, 2007). Previous studies reflect that a teacher's perspectives are a crucial influence in the teaching and learning process in kindergarten (Sougari,2017; Serdencius,2015; Rahman,2014). If

this issue is not addressed well, it will result in lack of passion for teaching language (especially mother tongue) as an important subject in kindergartens. This becomes a major challenge for teachers when it is coupled with traditional teaching method which might reflect monotonous and boring methods to the students as well as teachers.

Studies show that situations and circumstances of learning language are significant (Pinter, 2017). The circumstances should include interactive sessions, limited class size and the command of teachers in the language with the most appropriate pronunciation and intonation Djigunovich and Vike (2000). If these requirements are lacking, then it might harm children's learning process towards the target language. Due to this, teaching language, especially mother tongue had become a teacher-centric learning process rather than the outcome-based education system. Studies also indicates that traditional group learning has its limitation where students get delayed support from teachers and lack of feedback (Lan et al., 2007)

In addition to this, the other problem faced by the education system is the current trending, which is forcing the education system to migrate to e-learning methods. Research also found that the evolving social practices may have implications for the designing of curricular via e-learning or mobile technology methods ((Spasojevic, Ito, & van House, 2005). As the trending in education system migrates to e-methods, one of the factor that should be highly considered is the readiness of students and teachers to be receptive to the new method.

As schools and preschools are slowly moving towards an e-teaching method, Malaysia is also seriously focusing on its delivery method by looking into ICT for education. With the new initiatives in the MEB, it is only recently that the preschoolers in Malaysia have come under the radar of learning Tamil.

However, the current system in Malaysia does not strongly support this method for preschool education, especially in Tamil based kindergartens. The teachers are not trained enough to apply these concepts in their teaching pedagogy. If the situation persists, conventional teaching methodologies may be the cause for the loss of culture, heritage and custom associated with the Tamil language.

Findings of other studies also indicates the importance of language by stating that mixing languages resulted in a hybrid of languages like "Tanglish (Tamil-English) in India, Malaysia and Canada (Chowdry & Marlina, 2014). This is a very serious threat as it might affect the heritage language maintenance (Keniskhanova &

Duysekenov, 2016). Tamil is the classical language of 2000 years (Krishnan & Durai,2009) and it needs to be retained whilst revamped through an e-content in the young brains. However, limited research has been evidenced on the perspectives of kindergarten school teachers on teaching and learning the Tamil language.

The above implies that there is a gap in the systematic learning process of teaching and learning Tamil in kindergarten in Malaysia. There is a requirement for the contemporary applications of e-content application for early childhood learning and teaching process of Tamil language in the Malaysian kindergartens.

As a result of the problems faced, this study attempts to uncover the gap between Tamil teaching and learning process in Tamil based kindergartens in Malaysia. Therefore, this study attempts to address the issue of the monotonous education system to a more contemporary applications of e-learning education system. The current scenario indicates that there are no contemporary applications of teaching and learning process in the Tamil Language. The study would also help to shift the teacher-centric learning pedagogy towards outcome-based learning system at the kindergarten level.

III STUDY IMPLICATION

This discussion indicates that the quality of teaching and learning of mother tongue needs to include more of interactive learning rather than the traditional system of the learning process. There are four domains associated with the quality of teaching and learning kindergarten which constitutes 1) child as learner; 2) classroom environment; 3) delivery of instruction and assessment; and 4) teacher professionalism. This study will however focus on the delivery of instruction and assessment. It implies that acquisition and learning are two significant factors that influence the teaching practices (Gas, 2013). This said, the method used for delivery is essential for the student's performance.

IV UNDERPINNING THEORY

The early childhood learning is a complex situation with a distinction of conscious learning and unconscious acquisition in Children (Cook 2013, Mitchell et al., 2013). The principle of acquisition theory states that unconscious learning can be acquired through informal and implicit learning. However, the language learning theory states that conscious learning occurs through explicit teaching of formal knowledge of the language. Therefore, Second Language Acquisition (SLA) and Second Language Learning (SLL) are described as

dichotomy (Mitchell et al., 2013). In SLA, the knowledge of the children regarding their first language serves as a basis for acquisition (Richards & Rodgers, 2014). Therefore, the communicative strategies focusing on the affective factors which include anxiety, personality and social attitudes of children, motivation influences more in the early childhood education (Richards & Rodgers, 2014).

V METHODOLOGY

In this section, we would like to describe the technology which will be used to achieve student-centred learning in kindergarten level. All curriculum in Malaysia is designed by Ministry of Education and to ease the control for all the schools, we have proposed a cloud-based system which will be able to deliver the same content to all the schools in digital form by student-centred learning mechanism. We named our proposed method as Intelligent Kindergarten (i-Kinder). The project will be conducted with the following process as shown in Figure 1 below.
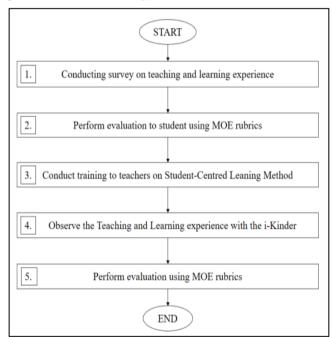

Figure 1. The Proposed Flowchart

i. Conducting Survey on Teaching and Learning Experience.

   Survey is conducted on the selected Tamil school kindergarten on their current environment to identify the flaws in teaching and learning experiences based on current or traditional methods.

ii. Perform evaluation to student using MOE rubrics.

In this phase, an evaluation will be conducted using Ministry of Education's rubrics which have been provided to the school to evaluate the students' performance. This result will be used as the threshold value to indicate the improvement of the students after implementing i-kinder.

iii. Conduct training to teachers on Student-Centred Leaning Method.

Series of training will be conducted to both teachers and students on how a student-centered teaching and learning mechanism works. Training on how to use the application which will be developed for this purpose will be given to the stakeholders.

iv. Observe the Teaching and Learning experience with the i-Kinder.

In this phase, i-Kinder will be implemented at school kindergarten and will be observed for 3 months period with the new teaching and learning methods.

v. Perform evaluation using MOE rubrics.

During their term examination, the same of group of students will be evaluated using the MOE's rubrics. Based on this result, we will compare this current result of MOE Rubrics to the previous one which was held on phase 2) to measure the performance of the new technique. In this phase, performance will be evaluated as shown in algorithm 1 below.

Algorithm 1. Pseudocode for Evaluate the i-Kinder.

```
Begin
        Marks = MOE Rubric
        Monitor the threshold value by using Marks
        Begin if (threshold >= Marks)
                //continue using proposed method (i-
Kinder)
                Execute i-Kinder
        elseif (threshold <= Marks)
                // i-Kinder method is not suitable
                Execute traditional method
        End if
End
```

Figure 3 below, shows the proposed system architecture for digitalized learning platform for Tamil school kindergarten. The overall curriculum from the ministry of education will be hosted to Microsoft Azure cloud server. Microsoft Azure cloud server is one of the public cloud server platform to store and retrieve data which is dynamic to modify the server's capacity.

Web service composition (WSC) methods is used to publish the curriculum content to display through smart devices. WCS is combination of multiple web services (WS) with several functions to fulfill business need. Microsoft Visual Studio will be used to develop the WS and WSC. WSC which consists of functionality for mobile application such as upload question, user's dashboard etc., will be published into cloud services. Even though a complex application running on mobile devices, it will not affect the resources of the mobile as the services placed in the cloud (Kanesaraj, Chua, & Haw, 2015).
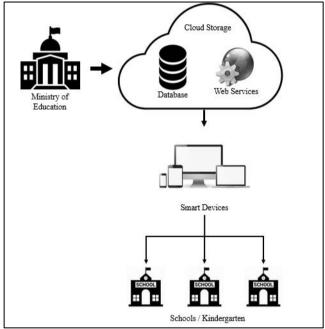

Figure 3. The Proposed System Architecture.

There will be two types of application. (1) Windows application for a touch screen smart television. (2) Mobile application. This application will allow student, teachers and parents to have their own dashboard, whereby they able to do following functions as shown in Table 1 below.

Table 1. Users of Mobile Application and Functionality.

Users of Mobile Application	Functionalities
Teachers	1. Allow to create questions online. 2. Allows to add comments on student's activities.
Parents	1. Allows to monitor the children activities. 2. Allows to communicate the teachers.
Students	1. Allow to answer the questions. 2. Able to communicate with teachers' personally. 3. Able to view their historical marks. 4. Able to do corrections for false questions.

Teachers can create homework or question to students. Since the mobile application is built with the colorful themes where teachers can choose the themes based on the activity trend. Thus, teachers do not require to have knowledge on designing field. time to monitor individual students progress and the capabilities of students.

Apart from teachers, this mobile application will allow parents to monitor their children's activity or progress anywhere and anytime. Parents may also view comments by teacher for each module or everyday task. By implementing this, parents will always be updated with children's progress even though they are working or outstation. Moreover, the students also can use this application do complete the homework or practices from home and view the task or activity comments from their dashboard.

Windows application will be used for teaching during the classes hours. Students will be allowed to touch and listen themselves on the smart television or monitor. This is predicted to increase the interest of students to learn and allow teachers to be more like a facilitator. Smarter students will have more opportunity to explore more themselves without being slowed down by the weaker students when there are dependable on their teacher. This teaching pedagogy will allow students to be more independent in their learning process. This will encourage students to explore more and become braver.

VI   CONCLUSION

In this paper, we have proposed a new teaching and learning mechanism using the digital device on Tamil school kindergarten. Our approaches are expected to improve both teaching and learning experience. As for future work, we aspect of completing and presenting the evaluation results. This methodology is expected to be used shared for other second or third language in any country. This methodology does not limit learning in the school, but it's continuous learning at home using their parents' mobile device.

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Furthermore, since moving towards technology era, the modules which completed by students will be automatically mark. This method also will reduce the usage of papers. At the same time, teachers will have   plenty   of

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