

# The needs of a Framework of Mobile Application for Kindergarten Early Reading: A Review and Analysis of the Literature

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## **Abstract**

Reading are essential skills for every children to enable them acquire a knowledge, Unfortunately a significant numbers of children in Malaysia and other countries faced reading difficulties. In the advancement of mobile technology, mobile application seem have a great potential to enhance reading skills among young children. However, most of existing application for early reading in market are less the attribute of well design mobile application for young children. This paper aimed to review and analysis the needs of a framework of mobile application for kindergarten early reading. The finding revealed a weighty current literature discuss regarding the needs of a framework of mobile application for kindergarten early reading. As a conclusion, an empirical study are needs to explore the vital elements for formulating a framework.

**Keywords:** Framework, Mobile Application, Kindergarten, Early Reading, Literacy

## **Introduction**

Reading ability is a vital skills to mastering by young children. Through reading abilities, children are able to explore knowledge by reading book, magazine and other printed matters. However, many children around the world struggled with reading (Annie E. Casey Foundation, 2010). The difficulties of reading among young children may cause by several factors for example inappropriate teaching method, lack of reading resources and unable to understand words or sentences (Tarasat & O'Neill, 2012). In other hand, some children have a physical disabilities such as problem in speech and hearing (Morgan, 2013). Concerning on there are many factors contributed to the reading difficulties, educators should determine and apply a evidence-based technique and approaches to enhance learning abilities among young readers (Tarasat & Daud, 2014).

## **Related Work**

In expansion of current technology, mobile technology affected to our way of life, included in teaching and learning. Mobile application with touch screen feature are comfortable for young learners (Abdul Aziz, 2013). Mobile application provided new dimension of kindergarten learning due to its attractive features such as light and portable (Neumann & Neumann, 2014), easy to use and user-friendly (Abdul Aziz, Rasli, & Ramli, 2010), portable, personalize and

support spontaneous learning (Kukulska-Hulme, 2009), and suitable for various approaches of learning (Mohamad, Maringe, & Woollard, 2012; Stanton & Ophoff, 2013).

**The Needs of A Framework: A Systematic Review**

Systematic review is a well-known and established method for obtaining data in software engineering (Zhang & Ali, 2013). This paper aimed to discover the needs of a framework of mobile application for kindergarten early reading. Researchers separately the literature into three parts.

**The Potential of Mobile Application To Nurture Early Reading Skills**

A several studies revealed the potential of mobile application in nurturing early reading skills for young children. Table 1 summarized the finding from searching in reliable database.

**Table 1.** The potential of mobile application to nurture early reading skills

<b>Author(s)</b>	<b>Statements/Finding</b>
Beschorner & Hutchison, (2013)	mobile application offer a novel and attractive approach to facilitate reading, writing, listening and speaking skills.
Yahaya & Salam (2014)	mobile application capable to encourage and motivate young children to identify letters and spelling.
Neumann & Neumann, (2014)	potential to enhance children’s emergent literacy skills, such as alphabet knowledge, print concepts and emergent writing
Cordero et al., (2015)	mobile application to foster language abilities such as reading, writing, listening and speaking among young children

From the perspective of researchers as shown in Table 1, mobile application obviously have a great potential to assist kindergartener mastering basic reading skills. However the successful of this form of instruction depend on the period of using mobile application and the support and scaffolding by teachers and parents (Neumann & Neumann, 2014).

**The Disadvantages of Existing Mobile Application For Early Reading**

According to Shuler, Levine, & Ree (2012) most of educational mobile application in Apple Apps Store are dedicated to early childhood education. Although the developers claimed their application are designed in the way make interesting learning experience, most of the application are lack of the appropriate criteria for children. Table 2 illustrated the finding on the disadvantages of existing mobile application for kindergarten early reading.

**Table 2.** The disadvantages of existing mobile application for early reading

<b>Author(s)</b>	<b>Statements/Finding</b>
Plowman & Stephen (2003)	Some educational applications were designed without appropriate interfaces for children's cognitive capability
Murray & Olcese (2011)	Several mobile applications have been developed without any strong theoretical framework.
Michael Cohen Group (2011)	Majority of existing mobile applications were devoid of appropriate interfaces, lack of immediate response, unclear learning objectives, and contain too many distractions.
More & Travers (2012)	Many educational application for early childhood poor in design, uninteresting instructional approach and indefinite content.
Lee (2013)	Existing application for kindergarten not actually align to school curriculum due the application developers aimed for profit-making.
Chau (2014)	A content analysis of existing educational mobile application in Apple's App Store indicated more than 40% application for young children were not developmentally appropriate designed.
Neumann & Neumann (2015)	Most of available educational app labelled for young children are lack of the characteristic for good pedagogies practices.
Plowman, (2016)	Many educational mobile application for young children not really provide a playful learning but just another form of drill and practice activities.

Finding in Table 2 indicated most of existing educational mobile application are inappropriate with developmental level of young children. Consequently, the available application are underused and unable to maintain children engagement.

### **The Non-existence of A Framework**

In this part, researchers concluded that the disadvantages of existing mobile application for kindergarten due to the non-existence of specific and comprehensive framework for this niche field. Table 3 demonstrated the non-existence of a framework.

Table 3: The non-existence of a framework

<b>Author(s)</b>	<b>Statements/Finding</b>
(Neumann, 2014)	The lack of a comprehensive framework for mobile applications for kindergarten setting because research in this specific area is in its infancy
Shoukry, Sturm & Galal-Edeen (2015)	Studies on mobile applications for kindergarten early reading are relatively few and no specific frameworks have been established to this field.
Yokota & Teale (2014)	There are very little reliable resources are available and limited understanding on the practices and impact of mobile application for early reading skills acquisition.
(Merchant, 2015)	In a digital literacy practice, there are need to draw a clear framework how mobile application intertwine with early reading development.

Table 3 highlighted the key point contributed to the weaknesses of existing mobile application for kindergarten early reading. Researchers aware that the mobile application in early childhood education is still fledging an very few evidence-based study are available.

### **Conclusion**

This paper review the affordance of mobile application and the needs of a framework of mobile application for kindergarten early reading. Although the mobile application possess a fascinating features and capable to attract young children, most of existing application are lack of criteria for well design learning technology. Against this urgency, there are needs to formulate a specific and comprehensive framework of mobile application for kindergarten early reading.

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