Development of Folktales Digital Story Module as Basic Literacy Learning for Indigenous Children in Rural Preschool

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Abstract. Folktales Digital Story Module is a potential teaching and learning tool to develop basic literacy skills for indigenous children. This is because this module introduces the fundamental of creative story-practices and traditions of indigenous people. Therefore, this study aims at identifying the suitability of folktales Digital Story Module as Basic Literacy Learning for indigenous children. The study employed Fuzzy Delphi approach in identifying the suitability of folktales in the module as a teaching and learning tool for the indigenous children. Data were collected from 20 experts from various fields including early childhood education, language and literacy, nursery teachers, lecturers in Kadazan-Dusun language and also education for indigenous people. The findings indicated that folktales are suitable to be developed and integrated in the module for indigenous people specifically to meet the needs of children with learning problems and LINUS. Therefore, the researchers recommended the implementation of Folktales Digital Story Module as Basic Literacy Learning among children of indigenous people to be extended to other indigenous tribes such as the Iban, Bajau, Bidayuh, and other ethnic groups in Malaysia.

Keywords: Alternative education, Homeschooling, Home education, Indigenous children education

1. Introduction

The rapid development of Information and Communication Technology (ICT) has sparked a diversified approach to teaching and learning and to be based on recent technological learning tools [1-5]. This phenomenon has led to the development of ICT literacy and web literacy skills. The access to information is no longer limited and thus, users need to acquire resources or information management skills to effectively utilize them and to solve daily problems. In education, ICT is highly potential to improve quality of learning and to transform learning experiences to be more meaningful for students. Digital story is one important ICT-based learning platforms to encourage and achieve a meaningful learning. As for indigenous children, this learning platform is very potential to offer immersive learning experiences in acquiring new knowledge and maximizing their learning motivation. Digital storytelling, for instance is possible to help achieve this. Folktales digital story is a
series of stories and graphic that provide a number of structures for teaching and learning processes that are in line with Indigenous children's learning styles.

However, what appears to be a problem is how to effectively utilize this learning platform. Numerous studies such as [6], indicated that teachers’ knowledge and practice in selecting relevant content of learning using ICT-based learning platform will determine the outcomes of learning. These studies also indicated that teachers’ intention to shape teaching and learning according to their learning styles, improve students’ academic results and provide a safe learning environment based on technology, are among contributing factors to ICT application in their classrooms. Therefore, the very step is to ensure the teachers have the awareness, knowledge and skills to conduct this learning.

On the other hand, considering students’ cultural background is important to enhance learning outcomes [7]. In Malaysia, most of indigenous children are struggling with early literacy skills [8]. The early literacy skills need to be developed along with motivation to learn. At the moment the issue of poor attendance and motivation of learning has been reported in the literature [9]. Realizing the potential of folktale digital storytelling to encourage literacy development and learning motivation, there is a need to design a contextualized platform that considers students’ cultural background to help encourage their motivation and participation in learning literacy.

2. The Folktale Digital Story Concept

Recently, the use of digital media in folktale storytelling has increasingly attracted education practitioners since its introduction by Centre for Digital Storytelling in Europe countries, in 1990s. Eversince, numerous workshops on how to effectively deliver a folktale story including historical incidents have been organized [10]. Digital story is a flexible and adaptable tool where it can be use in all school subjects for teaching and learning for all stages of learning; from preschool until upper secondary schools. It can be created by using simple and easy tools such as Photoshop or Firework or in more complicated way such as Adobe Flash to create characters and add animations into the stories. This is to provide interactive learning experience which is much more effective in developing early literacy [11]. Potentially, integrating Malaysian indigenous folktales in digital storytelling platform will help encourage literacy learning and students’ motivation. A collection of various folktales from different ethnics will definitely offer a more meaningful learning to these students in rural preschools.

Folktale digital story may provide alternative to problems that occurred in traditional learning such as poor students’ motivation, teacher centredness and poor engagement of students during teaching and learning session. Furthermore, with introduction of indigenous cultures to mainstream education, students and teachers from other cultural backgrounds can learn and appreciate these unique cultures. This in turn will serve as a platform to foster unity.

3. Early Childhood Literacy

Literacy development at early age is important to ensure children’s better outcomes in future [12-14]. This will lead to a better mastery of listening, speaking, reading and writing skills. Therefore, to master fundamental literacy skills during preschool years, children needs to develop basic early literacy skills such as vocabulary skills where children should able to strategically decode words from books and other resources, and learn new vocabulary while reading. Secondly, print motivation is where children are enjoying and interested in books or other learning materials as well as encouraging them to read and listen to stories. This is because, while reading children will become curious of the pictures and eagerly love to know what the picture is portraying.

Print awareness is another essential literacy skill that is used to analyse the order of the book; how the words should be read up to down or right to left. This includes ability to identify the correct way of holding a book or learning material, that will help to speed up their reading and learning skills. Next is letter knowledge skill, where children should be able to identify letters order and its shapes and understand that the words are build up from letters. Identifying letter also includes identifying symbols such as !, &, % and many more. The fourth skill is phonological awareness. Children should be able to listen and identify individual sound of letter blend them to read a word. Learning letter sounds is
important in developing listening and speaking skills. Next is narrative skill, where children should be able to describe an event, object and personal experience. Mastering in this skills will help to indicate that the children are able to combine and use the words that they read and respond to open-ended questions to encourage their speaking skills.

4. Indigenous Education Issues

The ‘State of the world minorities and indigenous People 2009’ report by Minority Rights Group International (MRG) indicates that half of the 101 million children in the world who are not in schools are minorities or indigenous children. This phenomenon is no exception in Malaysia. Dropout issues [8], [15], [16], among indigenous children in Malaysia have been reported in the literature.

Various efforts and approaches have been taken by the government to increase the participation of indigenous children in education, which include transportation assistance, various incentives and dormitory support, pocket money (Lipis / Cameron Highlands) and other learning aids such as textbooks, the Poor Student Trust Fund (KWAPM), Supplemental Food Plan (RMT), school uniforms and Federal Small Scholarships. However, the issue is still persisting.

Most recently, the government has launched the National Indigenous Education Transformation Plan (2012) [17], which focuses on the inclusion of children in the education system through efforts to upgrade infrastructure and expansion of access to quality education to Indigenous communities in remote areas.

5. Purpose of the Study

Realizing the poor participation and performance of these children in education, a transformation in teaching and learning that is current and interactive should be considered to attract these children to learn at schools. Previous studies on early literacy development have indicated that the use of digital storytelling that uses local stories can help increase students’ learning motivation and participation [18]. Therefore, this study is aimed at develop a folktale digital story module Saedah Siraj for indigenous children in Malaysia. The study is guided by the following research questions:

a. What is the appropriate form of social media application for indigenous children's learning for the future of digital story?

b. What are the features of the folktales digital story that are appropriate for the education of Indigenous children in the future?

6. Scope and Limitations

The current study is limited to indigenous children in a selected disctrict of Kuala Lipis, Pahang. A total of 20 experts were purposively selected to serve as expert panel, which fulfil the maximum (20 respondents) requirement of number of experts for Fuzzy Delphi Method [19]. The experts have more than 10 years experience in respective fields and are from Indigenous education (Parents and NGOs), officials from the Ministry of Education Malaysia (MOE), the Curriculum Development Division and Education Policy Planning and Research Division, Educational Technology Division, Child Animation Story industry activist and broadcasting media officer.

7. Data Collection Procedures

This study employed Fuzzy Delphi method. Initially, a questionnaire was developed by the researchers, which was based on an extensive review of literature. The questionnaire was conducted using a sample survey on 10 respondents namely Indigenous parents, teachers, teaching technology lecturers, Education Technology Division officials, MOE and School Management Division officials. The instrument has achieved a good value of Cronbach Alpha ( $\alpha=0.841$ ), indicating it has achieved a good internal consistency.

Next, the process of data collection of fuzzy Delphi studies begins with the following steps:
1. Determine the number of experts involved between 10-20 respondents (Adler & Ziglio, 1996). This study selected a consensus of 20 experts.

2. Determine the Linguistic Scale, based on the triangular fuzzy number. In the study, the researchers selected a Likert point scale of 7.

| 7 POINT LINGUISTIC SCALE      | 0.90 | 1.00 | 1.00 |
|-------------------------------|------|------|------|
| Very Strongly Agree           |      |      |      |
| Strongly Agree                | 0.70 | 0.90 | 1.00 |
| Agree                         | 0.50 | 0.70 | 0.90 |
| Neither/Nor Agree             | 0.30 | 0.50 | 0.70 |
| Disagree                      | 0.10 | 0.30 | 0.50 |
| Strongly Disagree             | 0.00 | 0.10 | 0.30 |
| Very Strongly Disagree        | 0.00 | 0.00 | 0.10 |

3. All data is calculated to obtain the average values \((m_1, m_2, m_3)\) namely Minimum Value, Reasonable Value and Maximum Value.

4. Determine the distance between numbers to determine the threshold value using the following formula:

\[
d(\bar{m}, \bar{n}) = \sqrt[3]{\frac{1}{2}\left[ (m_1-n_1)^2 + (m_2-n_2)^2 + (m_3-n_3)^2 \right]}
\]

5. Determine group agreement. Percentage of groups must exceed 75%.

6. Define aggregate fuzzy evaluation by adding all fuzzy numbers.

7. Defuzzification process. This process is intended to determine the ranking of each variable / sub-variable. There are 3 formulas that can be applied:

\[
A_{max} = \frac{1}{3} * (a_1 + a_m + a_2)
\]

8. Data Analysis and Discussion

In this study, only items that were in ‘agree’ and ‘strongly agree’ selected as these items convey specific meaning that are relevant to the study (Wei-Ming Wang, and Chu-Chiao Chen, 2012). The findings are presented according to the following constructs: a) types of social media applications and, b) the features of the Folktales digital story that are suitable for the education of Indigenous children.

8.1. The use of social media applications for Indigenous children's learning for Folktales Digital Story

The experts’ responses were used in determining the relevant types of social media platform for Indigenous children's learning for Folktales Digital Story as presented in Table 1 below.

| Table 1. Forms of Social Media Application Usage for Indigenous Children Learning for Digital Story Folks in the Future |
|---------------------------------------------------------------|----------------|----------------|----------------|
| Item              | Sub-Item | Average Respond | Defuzzification Value | Score |
| Social Media Application Usage Form for Folks in the Future | 1.1 Blog      | 0.54            | 0.73            | 0.88 | 0.72 | 5
|                   | 1.2 Facebook | 0.50           | 0.69            | 0.86 | 0.68 | 8
|                   | 1.3 Instagram | 0.50          | 0.70            | 0.87 | 0.69 | 7
Based on Table 1, the defuzzification value of item 1 (sub-item 1.1 to sub-item 1.8) ranged from 0.68 to 0.85 which is greater than 0.6 (accepted consensus value of experts). This means that all experts have reached an agreement to 'strongly agree' with item 1 (sub Item 1.1-1.8) in this survey. These values indicated that the experts have reached an agreement on the appropriate form of social media use for Indigenous children's learning for the Folktales Digital Story in the future. Knowledge Portal has the highest value (0.85) and Facebook has the lowest score value of 0.698. Based on the findings of this analysis, the experts anticipated the appropriate form of future use of social media applications for Indigenous children for the Folktales Digital Story is a knowledge portal. This is followed by a website rich with accurate and specific information for virtual learning.

However, the experts rated Facebook as the lowest as they believed that this platform will not receive much attention especially from parents who wants more effective learning opportunities for their children.

8.2. The features of the Folktales digital story that are suitable for the education of Indigenous children in the future.

Similarly, the experts’ responses were used in determining the relevant features of Folktales Digital Story as presented in Table 2 below.

Table 2. The features of the Folktales digital story that are suitable for the education of Indigenous children in the future.

| Item | Sub-Item | Average Respond | Defuzzification Value | Score |
|------|----------|-----------------|----------------------|-------|
| 2.1  | Folktales Digital story contains elements of community practice and tradition: |                  |                      |       |
|      | a. Customs and taboos are prohibited | 0.52 0.70 0.84 | 0.69                 | 6     |
|      | b. Music, song and dance | 0.78 0.93 0.98 | 0.90                 | 1     |
|      | c. Traditional games | 0.70 0.87 0.96 | 0.84                 | 4     |
|      | d. Traditional art and crafts | 0.73 0.89 0.97 | 0.86                 | 3     |
|      | e. The values and practices of community tradition | 0.69 0.86 0.96 | 0.84                 | 4     |
|      | f. Traditional clothing | 0.62 0.81 0.93 | 0.78                 | 5     |
|      | g. Native Language | 0.75 0.91 0.98 | 0.88                 | 2     |
| 2.2  | Folktales Digital story background: |                  |                      |       |
|      | a. urban | 0.82 0.95 0.99 | 0.92                 | 1     |
|      | b. village / rural area | 0.79 0.93 0.98 | 0.90                 | 2     |
|      | c. Natural life (forest) | 0.75 0.91 0.97 | 0.88                 | 3     |
| 2.3  | An appropriate Folktales Digital story character |                  |                      |       |
|      | a. active | 0.67 0.84 0.94 | 0.82                 | 4     |
|      | b. aggressive | 0.61 0.77 0.89 | 0.76                 | 5     |
Based on Table 2, Item 2.1 (elements and traditional practices), ‘music, songs and dance’ item has achieved the highest defuzzification value (0.90) and was ranked first by the experts. Whereas, ‘traditional clothing’ was ranked last with defuzzification value of 0.78.

For Item 2.2 Folktales digital story background, the experts agreed that ‘urban’ should be the main background (with defuzzification value of 0.92). This is followed by ‘village and rural areas’ (with defuzzification value of 0.90) and ‘natural life (forest)’, with defuzzification of 0.88.

Lastly for Item 2.3 (Character), the experts agreed that open-mindedness and leadership should be the main character in this module (with defuzzification value of 0.89). However, aggressiveness received the lowest rating with only 0.76 in defuzzification value.

In short, the findings of this study provide a clear guideline in developing the Folktales digital story module for Indigenous children in developing their early literacy. This can be achieved by including:

a) Animated content featuring elements and practices of community traditions such as music, songs and dance; native language (Dialect by State); the art of weaving and handicrafts; traditional games; values and practices of community tradition; traditional and customary clothing and taboos are prohibited by specific community groups
b) Folktales Digital Story animations around the community should have elements of urbanization and village as well as nature preservation
c) The Animation Character must symbolize the identity and character of the eastern people in a polite manner. The values that should be highlighted in the character developed are leadership, confidence and ability as well as open mindedness.

9. Conclusion
The findings of the current study has an emphasis on good moral values, academic achievement and pedagogical practices, which is important component to indigenous children development [20], [21], [22]. Despite of its potential to encourage their learning motivation and participation in learning, this module which includes the use of recent social media platforms with a strong emphasis on students’ cultural background will be able to offer a more meaningful learning to develop their early literacy skills. Hence, this study has provided a guideline on how to achieve this.

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