

Need Analysis on Improving Reading Skills Using Interactive Kit Media Among Low Achievers

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Abstract: *This feasibility study intend to develop an interactive kit media to help low achievers in reading activities. Interactive kit media tools will be an appropriate learning tools to enhance reading skills among low achievers. 46 participants who teach reading skills to low achievers were selected through random sampling technique to answer the feasibility questionnaire. Findings show that there were no significant difference in requirements to develop interactive kit media for low achievers based on participants' education levels with a value of $[t = 2.64, p = .749 (p > .05)]$. H_{01} indicates that low achievers need interactive kit media to learn reading skills. Findings also show that there were no significant difference in the content of interactive kit media by education levels with $[t = -1.00, p = .752 (p > .05)]$. This means that graduate and non-graduate teachers have the same opinion on the proposed interactive kit media and H_{02} was accepted. MANOVA results revealed a significant difference between participants' education level with low achievers $[F(1) = 6.98, p = 0.01 (p < 0.05)]$ and interactive kit media $[F(1) = 1.00, p = .323 (p > 0.05)]$, Pillai's Trace $[F(2, 43.0) = 5.95, p < 0.5]$. In conclusion, there is a strong need to develop an interactive kit media learning tools to enhance reading skills among low achievers. This study recommends that low achievers need a better environment to learn reading skills and interactive kit media which consist of interactive games, augmented reality cards and e-book has a significant impact to improve their ability in accordance with Education 4.0.*

Keywords: *low achievers, reading skills, interactive kit media*

I. INTRODUCTION

Successful remediation depends on specific terms used to describe their weaknesses or strength (Lancheros-Cuesta, Carrillo-Ramos & Pavlich-Mariscal, 2019). Their needs can be identified and fulfilled by providing appropriate teaching and learning materials according to their cognitive levels (Siti Barokah, Hasnah & Anuar, 2012). Struggling readers demonstrates early reading problems due to lack of basic reading skills and obviously they are poor readers too (Young and Shin, 2019). Abdul Rashid & Rashidah (2012) found that teaching aids had a significant impact in improving children achievement especially in reading skills. According to Ahmad, Anis Fatima & Jeffry (2016); Ahmad, 2017). Information and Communication Technology (ICT) accelerate children in learning reading skills and is suitable for daily teaching and learning. Therefore, it is important to find out what are their needs and how teachers can assist them to improve their reading skills. One type of support to assist low achievers to get involve in reading activities is interactive kit media.

II. BACKGROUND OF STUDY

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It is less known about the extent to which reading skills are implemented in classrooms (Walker & Stevens, 2017). Many children experience difficulties in reading and writing (Kang, McKenna, Arden, & Ciullo, 2016). Children with learning disabilities are heterogeneous with different diversity (Brina, Rampoldi, Rossetti, Penge, & Aversa, 2018) and needs. They typically manifest problems in reading skills (Kim, Bryant, Bryant, & Park, 2017) and they need individual screening (Ashraf & Najam, 2014). Low achievers show difficulties and weaknesses in one or more of these distinct skills (Avitia, Pagirsky, Courville, DeBiase, Knupp, & Ottone-Cross, 2017). Low achievers usually unable to think about the sound structure of words. Thus, they need more opportunities in academic success and most of the time it closely related with having a well prepared teachers who understand their strengths and welcome individual limitations they bring along to the classroom.

III. PROBLEM OF STATEMENT

Social studies instruction includes complex literacy skills and it requires teachers attention to support children in learning (Ciullo & Dimino, 2017). Well trained teachers develop academic skills of students with reading difficulties (Lerkkanen, Holopainen, Eklund & Aro, 2018). Teachers too need support to use a variety of pedagogical models as they are moving to the direction of adopting student-centered approaches (Keskitalo, 2011). Teachers can use dynamic or interactive test to assess children knowledge in a specific area by using scaffolding techniques or guided assistance (Wormald, Rogers & Vialle, 2015). They need to show passion and empathy for the children and make the teaching environment fun (Goh, 2019). Thus, learning to read will be awaited by children if they are able to connect words they are trying to read with their real life experiences. This can be accomplish with interactive kit media. It will be more enjoyable if teachers and parents can be with them to learn and to explore the world of technology. The current study sought the answer to the following question: Does low achievers needs interactive kit media in learning reading skills?

IV. LITERATURE REVIEW

Reading difficulties

Reading disability also preferred as dyslexia in recent years which refers to children who are having difficulty in acquiring literacy skills (Shalaby, Khalil, Elkabariti, Mahmoud, Nada and Khattab, 2017). Reading is an important skill and remains controversial on how reading skills or reading difficulties develop (Noor Z. Al Dahhan, Kirby & Munoz, 2016). Children with reading difficulties encounter memory deficit and processing disorder that need intervention in both auditory and visual modalities (Giménez, Ortiz, López-Zamora, Sánchez & Luque, 2017). Deficit in reading performance will lead them to be a passive learner. Therefore, we need to develop more interactive kit media to attract and motivate them to get involved in variety of cognitive and linguistic activities. A better understanding on the children needs and ability will be helpful towards identification and remediation in reading.

Interactive Kit Media

In our daily life, many barriers still exist even with the use of ICT and due to this, some students are not able to participate in learning activities (Ting-Fang Wu, Cheng-Ming Chen, Hui-Shan Lo, Yao-Ming Yeh & Ming-Chung Chen (2018). To improve student outcomes in reading skills, they need to read with interest and attention (Hitchens & Tulloch, 2018; Ahmad & Khoo, 2019). Many parents and teachers believe computer games can hold children's attention (Ronimus, Kujala, Tolvanen & Lyytinen, 2014). Gamification or interactive games obviously attract and improve children engagement in reading (Zeng, Tang & Wang, 2017). It include graphics, audio clips, virtual items and artificial characters (Tang & Zhang, 2018) and interactive multimedia also includes graphics, video, text, virtual reality, animation and many others (Ahmad, 2018; Ahmad, & Rosmanizam, 2017)). The 21st century education is becoming more open-ended whereby children are being exposed to more alternatives ways in learning (Chachila, Engkamatb, Sarkawic & Awang Rozaimi, 2015). As reading activities is a

complex process and deficits in any cognitive ability will lead children to deficits in reading performance. Children that demonstrate reading difficulties need more chances to be engage in reading activities using interactive kit media. Among the limitations of this study is the number of words that need to be included in the application development as each student is different in terms of their abilities. Words selection also need to be clarify and carefully selected for daily use purposes.

V. METHODOLOGY

46 Special Education teachers were selected randomly as participants to answer online questionnaire via Google forms. All participants teach reading skills and low achievers in primary schools. This study employed survey as its research method. The questionnaire has three parts and it uses Likert five rating scales. Content and face validity of the questionnaire showed a strong value and high in quality. Data were analyzed using multivariate analysis of variance test (MANOVA). Before performing the MANOVA, linearity, multivariate normality and homogeneity of variances were tested and it showed that there are no serious violation of the assumptions. Thus, the MANOVA was performed.

VI. FINDINGS

Table 1: Need Analysis Result on Requirements to Develop Interactive Kit Media for Low Achievers based on Participants' Education Levels

Education levels	n	mean	SD	t-value	p
Graduate	43	4.27	.492	2.64	.749
Non graduate	3	3.50	.440		

P<.05

Table 1 shows that there was no significant difference in requirements to develop interactive kit media for low achievers based on participants' education levels with a value of [t = 2.64, p = .749 (p> .05)]. Thus, Ho₁: there is no significant difference between the requirements to develop interactive kit media for low achievers based on education level was accepted. This indicates that low achievers need interactive kit media to learn reading skills.

Table 2: Need Analysis Result on Content of the Interactive Kit Media based on Participants' Education Levels

Education levels	n	mean	SD	t-value	p
Graduate	43	4.12	.509	-1.00	.752
Non graduate	3	4.42	.490		

P<.05

Table 2 shows that there was no significant difference in the content of interactive kit media by education levels with [t = -1.00, p = .752 (p> .05)]. This means that graduate and non-graduate teachers have the same opinion on the content of the interactive kit media. Thus, Ho₂: there was no significant difference in the content of the interactive kit media based on the service group was accepted.

Ho₃ There were no significant differences in mean of low achievers and interactive learning tools according to participants' education level

Table 3: Box's M Test Result for Low Achievers and Interactive Kit Media based on Participants' Education Level

Independent Variable	Box's M	F	df 1	df 2	p
Education level	3.501	.720	3	139.9	.542

P<.05

Table 3 shows the results of the Box's M test on participants' education level. Findings found no significant differences and covariance between low achievers and interactive kit media with participants' education level ($F = .720$, $p = .542$, $p > 0.05$). This means that low achievers and interactive kit media are homogeneous across participants' education level. Box's M test showed insignificant results ($p > .05$). This indicates that the data comply with the covariance condition of the MANOVA test, that the variance of the two dependent variables across independent variables is similar to the population.

Table 4: Levene Test Result for Low Achievers and Interactive Kit Media based on Participants Education Level

Independent variable	Dependent variable	F	df 1	df 2	p
Participants education level	Low achievers	.103	1	44	.749
	Interactive kit media	.101	1	44	.752

P<.05

Table 4 shows the Levene test of variants and covariates for low achievers, $p = .749$ ($p > 0.05$) and interactive learning tools, $p = .752$ ($p > 0.05$). Based on these results, there is a similar effect of education level with low achievers and interactive kit media. It shows all variables met the assumptions that the MANOVA test can perform (Pallant 2005).

Table 5: MANOVA Analysis of Differences in Low Achievers and Interactive Kit Media based on Participants' Education Level

Effect	Pillai's Trace	F	Hypothesis df	Error df	p
Participants' education level	.217	5.95	2	43.0	.005

P<.05

Table 5 shows the results of the MANOVA test conducted to determine whether there are differences in low achievers and interactive kit media based on participants' education level. The findings show that there are significant differences in overall low achievers and interactive kit media based on participants' education level differences. Values of these differences were expressed using Pillai's Trace = .217, $F = 5.95$ and $p = .005$, $p < 0.05$. This indicates that the null hypothesis is rejected. This means that there are significant differences in low achievers and interactive kit media based on participants level of education.

VII. DISCUSSION AND RECOMMENDATION

MANOVA results showed a significant difference between participants' education level with low achievers needs and interactive media kit. Successful reading among low achievers requires language processing skills and also identification of

words that assemble into messages. These findings correspond to Ting-Fang Wu, Cheng-Ming Chen, Hui-Shan Lo, Yao-Ming Yeh & Ming-Chung Chen (2018). If they do not show outstanding in academic performance because of their reading difficulties, a suitable intervention with interactive kit media need to be plan. These findings are in line with Ahmad (2019) and Chachila, Engkamat, Sarkawic & Awang Rozaimi (2015). Low achievers who fail to acquire reading skills in their early grades are more likely to struggle as they continue their schooling path.

VIII. CONCLUSION

To facilitate learning among low achievers, various ways in ICT can be integrate to stimulate learning and academic improvement. Children need to employ different types of activities and knowledge while enjoying their reading activities. Low achievers must gain information and get involved in learning by watching, listening and reading. This article coincides with the aspirations of the education demands that ensure holistic and sustainable development.

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