The Effect of Using Look, Spell and Read (LSR) Interactive Application towards Reading (CV+CVC) Skills among Slow Learner Students

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Abstract Language literacy is the most important skill to be mastered because it is one of the mediums used to deliver teaching contents in the classroom. One of the language literacy needed in learning is the reading skills. This research aimed to identify the impact of using LSR interactive tool on slow learner students' reading skills. A total of thirty slow learner students and two teachers who had five years of experience in teaching special education class were selected as respondents. This research was pre experimental in design because it involved only one group of study sample. The instruments used were pre-test and post-test, and interview protocols for teachers and pupils. Data were analyzed using descriptive and inferential analysis through *Statistical Program Social Science* (SPSS) version 22. The paired t-test result showed that there were positive and significant impacts (t= -23.57, df=29, P<0.05) of using LSR interactive tool on slow learner students' reading skills. Meanwhile qualitative data through teacher and student interviews showed similarity when both groups agreed that using LSR interactive tool helps slow learner students improve their reading skills. The use of multimedia elements such as text, graphics, animation, video and audio has helped a lot in capturing students' attention and interest and this also has indirectly helped improve their reading ability. All students suggested that more words be built in LSR and the use of 3D graphics be increased as these have attracted them to learn. It is hoped that this study can be a trigger and reference for further studies related to the use of interactive applications in particular to assist the learning process of special education students.

Keywords Interactive Application, Pre-experimental Design, Slow Learner Students, Special Education, Consonant-Vocal-Consonant (CVC)

1. Introduction

The world has grown rapidly in many ways. Various policies and laws have been renewed so that all parties are treated fairly. For example, the No Child Left Behind Act (NCLB) was introduced in 2001 to replace the Elementary and Secondary Education Act 1965. The Act was introduced to focus on the American education system in particular that is no longer competitive internationally. As such, the government has taken a leading role in giving all groups of students the access to equal rights in education such as special education students, poor and marginalized students, moderate-performing students and second language learners [1]. This also happens in educational development in Malaysia. Equality in the education system is important to ensure students' academic achievement. According to the Malaysian Education Development Plan 2013-2025, the current education

Figure 3. Let's Read (Part 2)

Figure 5. Example of quiz 2 (Part 4)

4. Materials and Methods

4.1. Research Design

The researcher has chosen the pre-experimental design using pre-test and post-test. Pre-test was conducted before students used the LSR interactive application while the post-test was conducted after teaching using LSR interactive application. The effectiveness of this application was assessed using a quantitative method such as analyzing pre and post test scores data as well as statistical inference checklists. The design of the pre-experimental study is one of the weakest study designs [13], however the rationale of using pre experimental in this study was because of the limited sample (just one special education class was available in each school). We believe pre-experimental research design is appropriate to execute this study as suggested by [13] in their study. Hence, the researcher has also included a qualitative method to obtain more information that was through interview sessions. The interview data was analyzed through content analysis. In this study, the pre-experimental study design used a small group of students who were trained using the LSR interactive application to help them master CV + CVC word reading skills. No control group and comparison group were involved in this study.

Figure 4. Example of quiz 1 (Part 3)

4.2. Population and Sample

This study used a non-random sampling technique. The researcher selected this sampling technique because the researcher has identified the specific characteristics of the selected sample based on the focus of this study [14]. 30 slow learner students who attended the special education class were the sample for this study. These students were identified based on health reports from student records and placement letters to the school. They have flexible access to education based on their level of cognitive ability and development. In addition, two teachers with experience in teaching slow learner students in special education classes for more than 5 years were also selected as study participants. Selecting a suitable study sample enables the researcher to obtain accurate research information or data [15]. Meanwhile, a total of 10 students were randomly selected to be interviewed.

4.3. Instruments

For this study, interview protocol, observation checklist as well as pre and post tests result were used. The instruments used in this study were divided into two; for quantitative data, the pre and post test results were used. Meanwhile, for qualitative data the researcher used interview protocols for teachers and 10 pupils. Interviews were conducted with two teachers who taught Bahasa Malaysia subject for slow learners in special education class with learning disabilities and have more than five years of teaching experience. This interview protocol contained four sections. The first section was to develop a positive relationship with the respondents. The second section was related to the respondents' background such as academic history, teaching experience and subjects taught. The third section covered the questions and issues of the study. Finally, the interviews were conducted to allow the respondents to submit additional suggestions regarding the use of LSR interactive application.

The pre- and post-test conducted in this study were to see the effectiveness of using LSR interactive application in helping slow learners in special education class to improve their CV + CVC reading skills. This pre-test and post-test consisted of 20 multiple-choice objective questions. There were two sections in the pre and post tests; Section A contained 10 items and Section B also contained 10 items. The time allotted for test execution was 1 hour. The total score for each correct answer was 5 marks. The score was calculated as a percentage with an overall score of 100%. The level of questions in pre- and post-test was based on Bloom's Taxonomy [16] at the level of remembering and understanding. The level of remembering was where students remember past lessons, terms, basic concepts and answers. This level required students to select, match, spell and tell, while the level of understanding involved students understanding the facts,

organizing, comparing, explaining and proposing ideas.

4.4. Statistics and Data Analysis

Statistical analysis was also used for pre-and post test score analysis. Paired t-test is used to obtain pre-test and post-test difference scores [17]. This post-test determines whether the null hypothesis of the study is accepted or rejected. In this study, the result of paired t-test was explained using the statistical inference method. Paired t-test is used to find the comparative quantitative variable on the same individual for example looking at the effects before or after an intervention [18].

4.5. Content Analysis

This study used content analysis to analyze interview data. After obtaining information based on the interviews conducted, the researcher transcribed the interview data to examine the data more clearly. [19] argued that content analysis is one of the techniques of data summary. It is a technique that can compress a lot of text into smaller categories of content based on clear codes. Content analysis is done to extract data in a more meaningful way according to the identified themes [20]. In this study, the findings from the interview results were organized based on the contents obtained.

5. Research Findings

5.1. Research Design

The following is a graph of student achievement profiles for pre and post-test:
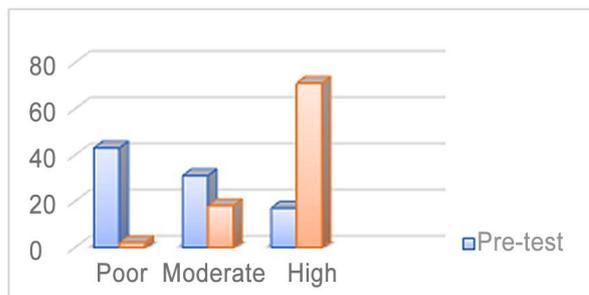
Figure 6. Student's Achievement Profile for Pre-Test and Post-Test

Based on Table 2, students' achievement in pre-test was less satisfactory. There were many students who were at the weak level and only a few students were at the high level. In contrast to the post-test, students' achievement was seen as satisfactory. Many students achieved a high level of achievement (in grades A and B). Therefore, it can be concluded that the use of LSR interactive tool could help in the development of CV + CVC reading skill among slow learner students.

Table 2. Result of Paired T-Test for Pre and Post Test

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Dev	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pre-test scores – Post-test scores	-36.83	8.59	1.563	-40.03	-33.64	-23.57	29	.000

5.2. Paired Sample T-Test Result

Paired t-test was used to determine if the mean score for the post-test was higher than the pre-test mean score after the teacher had taught using the LSR interactive application. The following is a table of paired t-test result for pre and post-tests.

Based on Table 2, it can be seen that the result of the paired sample t-test was significant (t = −23.57, df = 29, P <0.05). This result successfully rejected the null hypothesis for this study. Therefore, it was proven that the use of LSR interactive application could assist in the development of CV + CVC reading skill among students. A high mean score after teaching using the LSR interactive application indicated that learning based on audio and visual media could improve reading skill score among slow learner students.

5.3. Interview Findings

To support the quantitative data, qualitative data through the implementation of interviews were obtained. The following are the results of the interview conducted with 2 teachers, and 10 students randomly selected from a total of 30 students.

Theme 1: LSR interactive application contained animations, images, colors and audio which could engage students in learning.

Teachers (T) and pupils (P) reacted positively to the relevance of the LSR interactive application in helping slow learners' learning. The use of this application has smoothly facilitated the teaching and learning process. Pupils also enjoyed using LSR interactive application as it contained animations, images, colors and audio. This indirectly helped students focus more on the learning process. Findings from pupil interviews found that they preferred SLR applications over textbooks due to the use of attractive graphics and animations that made it easier for them to understand the content of the lesson more easily.

Teachers' responses (T)

"In my view, the use of LSR interactive application is very relevant in assisting slow learners' learning. Because, all this while teaching these slow learners, I realize they love animations, music and colorful images. This can help them focus. When I used only textbooks or activity books, the pupils would always get bored and the class was difficult to control." (T1)

"I love seeing the pupils enjoy using this application in their learning. The application has syllable sounds, pictures, interesting images and pupils could also follow the correct word sounds. I see the pupils having fun too, and I was happy." (T2)

Pupils' responses (P)

"LSR had many colors, beautiful, there was a sound when I clicked on the button". (P1)

"It was fun to use this SLR interactive application, teacher. I like it because the pictures were moving (animation). Even more fun when I managed to answer correctly, the sound of applause would be heard causing me to be motivated to continue learning. Interface SLR interactive application was very colorful, attracted to me to learn". (P4)

"Ermmmm…. using this application was more fun and easy to understand than when teacher teaching used a book. I like to use this application because there were interesting sounds and animations, the pictures in this application looked alive and made me excited because of the use of attractive colors compared to the textbooks that teacher always uses while in class. Furthermore, if I use books, I easily feel bored while learning". (P6)

"I like to use this LSR application, teacher. It was easy to use because the graphics were clear; the colors were attractive and beautiful. There were sounds that attracted me when learning. I like LSR better than textbook which only has pictures but no animation like LSR". (P7)

"I really like this application, teacher. It feels like playing a game because there are moving pictures (animations) coupled with sounds that catch my attention. I'm happy teacher. Later, please develop another application like this yeah?". (P10)

Theme 2: Reinforcement elements such as quizzes and repetitions found in LSR interactive application helped slow learners' in reading CV + CVC words.

Teachers and pupils responded well to LSR interactive application in helping slow learners to read the CV + CVC words. In their views, the use of this application

helped facilitate the teaching and learning process. In addition, this app could assess slow learners' reading of CV + CVC words through Quiz 1 and Quiz 2 available in the LSR interactive application. Learning through the LSR interactive application allowed pupils to focus during the learning session. The response from the SLR allowed pupils to know automatically whether the position they were giving was right or wrong. Pupils were easier to learn with LSR than using textbooks.

Teachers' responses (T)

"This app was easy to use. I saw pupils enjoying it and they became focused. The sounds of the words were clear. Pupils followed it easily. Teachers could repeat parts which found to be confused by the pupils. Then, parts of Quizzes 1 and 2 could be understood by pupils. There was also the element of reinforcement. Therefore, it is possible that this interactive application could help as many slow learners as possible in their reading skills." (T1)

"Ermmm.. To me, this application could really help. Because this application has many recurring elements. If a pupil doesn't understand, I can click again to repeat the part they don't understand. Part 1 was interesting, too, with pictures, syllables, words and even background sounds and words. Pupils really like these things. They will not get bored to learn." (T2)

Pupils' responses(P)

"I feel that learning becomes easy when using this LSR interactive application. If I combined the syllables wrongly, there would be a warning sound to signal that my answer was incorrect. It helped me by giving me a sign that I have to check my spelling". (P1)

"Ermmm..easy to understand when using the LSR interactive application compared to the textbook. I can hear the syllable sounds very clearly. The interactive quiz was fun and enabled me to remember easily because the pictures were clear and colorful. The pictures helped me to read the syllables correctly. The interactive quiz helped me to get the correct answers". (P4)

"Using the LSR interactive application was fun. It helped me revise what I could not understand. The quiz made me interested to learn more. The part I like most was identifying the syllables because the voice sound told me the right syllables to match the pictures on the screen". (P5)

"I like answering the quiz. I could know whether I was right or wrong through the responses such as if my answer was right, there would be the sound of hands clapping. When I answered incorrectly, there would also be a sound telling me to try again. The one thing I like about LSR is I can revise and redo

my answer if I answered incorrectly and I can try and try until I get the correct answer". (P7)

"At first I was not good in using the computer. But, the LRS application helped me understand which button to click. After a while, I felt comfortable using the LSR interactive application compared to the textbook. The colorful interface attracted me to learn more. The instructions in the application were also clear. I felt confident to pronounce the syllables because I was free to click on the picture repeatedly and could hear the sounds of the syllables being pronounced correctly." (P9)

Theme 3: Suggestion to increase 3 Dimension (3D) words and add Interface and animated pictures.

There were also features that required improvement in the LSR interactive application from the perspective of the teachers and pupils. In their views, the number of 3D words and animation could be increased. In addition, there was a need to introduce the sounds of the syllables before combining the syllables to form the words. All the students interviewed said they liked LSR because of the animation, audio, color and interface elements that attracted their interest in learning. All students suggested putting more words and 3D graphics.

Teachers' Responses (T)

"In my view, it would be good to add a section where pupils can hear the syllable sound first. Then continue to pronounce the syllable to form the word. Maybe the pupils will feel even easier to read the words because they already know which syllable sounds to combine. It would also be good to add 3D animations or moving pictures as well." (T1)

"I think adding number of words and moving pictures like 3D animations should be more interesting. It is usually difficult to maintain the slow learners' attention span. But if there is a stimulus that catches their interest and attention, it will be easy for us to make them stay focused. Other than that I think this application is good. This application can greatly enhance the reading skills of these slow learners." (T2)

Pupils' responses (P)

"Ermmm…this application is simply awesome. But if teacher can add more animation, it would be better. Feels like watching cartoons." (P1)

"I like it, teacher. But it ended fast. Can teacher add more? It will surely be very interesting." (P3)

"I like it to have more real pictures. Maybe teacher can add animal sounds because I like to hear how the animals sound like. I like learning using this application." (P6)

"It is good, teacher. But I hope teacher can add one

part where I can hear all the syllables first. Then I can identify the syllables easily. That way I can easily put together the correct syllable to match the picture." (P7)

"I think the application is good already, teacher. I enjoy using this application. But if teacher wants to add anything, I hope teacher can change all the pictures to 3D. I think it will be more interesting" (P10)

6. Discussion

Based on the data analysis, it can be concluded that this LSR interactive application can assist pupils in pronouncing CV +CVC words. Through the interview data, this application also helped facilitate teacher teaching process. The finding of this study is in line with the study conducted by [10], who stated through the observation findings, the use of audio and visual teaching aids has many advantages in the students' learning process. From his study findings, 18% of the survey respondents agreed that using audio visual teaching aids can stimulate students' interests in learning, while 13% of survey respondents agreed that learning process using audio and visual elements can help students understand teachers' teaching contents. In addition, 10% of the survey respondents agreed that the learning process using visual audio media can help improve listening ability and helped maintain their focus on the learning process. Finally, 42% of respondents said that the use of audio and visual media in their learning greatly benefited students' learning process in many ways. The findings of this study are also supported by [23] that interactive application development is necessary to focus on development of students' skills such as reading skills. This finding is also in line with [24] stated that student learning with multimedia application performed better than the group learning using printed module.

The use of LSR interactive application also affected students' confidence and motivation to learn. This is in line with [25] where language learner autonomy can influence students' motivation. Through the analysis of teachers' interview data, it can be concluded that in addition to helping students with CV + CVC word reading skills, students also responded positively by helping their peers pronounce the words and also showed no boredom during the learning session using the LSR interactive application. This is in line with the study findings of [7] in 'The Joy of Reading "- An Intervention Program to Increase Reading Motivation for Pupils with Learning Disabilities which showed that using innovative tool had a significant effect in assisting students with cognitive problems in mastering their reading skills. In addition, active learning activities using this innovative tool in 'The Joy of Reading' created a positive learning experience involving mastery of language literacy through a variety of interesting learning activities such as reading reports, role play and sharing of ideas based on reading materials read.

7. Conclusions

Teachers who teach in the 21st century need to be more competent and prepared for the challenges in today's educational world. The effectiveness of teaching depends on the continuous efforts of the teachers and all involved. The use of interactive tools in the teaching and learning process is one of the most effective and engaging teaching mediums. A fun learning environment will enable students to enjoy learning. The use of interactive tools can also stimulate students' communication to respond in the classroom. Through its implementation in this study, it can be said that there is an effective use of LSR interactive tool in helping students to read fluently.

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