

THE EFFECTIVENESS OF ORIGAMI MAGIC ON READING AND WRITING PERFORMANCES IN BAHASA MELAYU OF REMEDIAL PUPILS

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Abstract— Origami is the art of paper folding. Its name derives from Japanese words ori (folding) and kami (paper). The purpose of this experimental study is to investigate the use of “Origami Magic” on remedial pupils who faced difficulty in learning and had low performance in academic for reading and writing. The remedial pupils underwent pre-test and post-test for reading and writing in Bahasa Melayu. After the pre-test, pupils used “Origami Magic” as an educational tool for three months to improve the hand-eye coordination. Origami is a game for students and they love playing games. Different shapes and variety of colors allows students to develop psycho motor skills and they helps hand, eye muscles and hand-eye coordination to develop. The results of this study can give knowledge to teachers by using “Origami Magic” for creating new games or creative activities. Based on the findings showed that the use of “Origami Magic” could help pupils to learn better and effectively. The impact of “origami Magic” on reading and writing performances of remedial pupils found a great improvement.

Keywords—Origami Magic; low performance; academic; hand-eye coordination

1. Introduction

Remedial means: “intended to correct or improve something.” The root word is “remedy” – “the means of solving a problem.” Many children struggle with the basic fundamentals of reading, writing and mathematics. Remedial education is suitable for children who fall behind in these core skills, despite having average intellectual abilities. As we know, each pupil is different in terms of learning ability, academic standards, classroom learning and academic performance, and each has his own in learning. As a qualified remedial teacher told us for this article: “Remedial education is definitely not more worksheets. It is the use of practical, hands-on where possible, auditory and visual stimuli.”[1]

A child's reading skills are important to their success in school as they will allow them to access the breadth of the curriculum and improve their communication and language skills. In addition, reading can be a fun and imaginative time for children, which opens doors to all kinds of new worlds for them. Literacy and numeracy lay the foundation for learning in primary education and beyond. Reading, writing, arithmetic are implicit in the basic right to education. Without these abilities, it is nearly impossible for students to attain higher education and function in the modern society.

This study discusses the effectiveness of ‘Origami Magic’ in Bahasa Melayu on reading and writing performances among remedial pupils. The remedial pupils are often labeled as slow learners because they have lower achievement compare to their peers in the mainstream class. Teaching aids facilitate the students to understand the lessons presented by teachers [2]. In this case, teacher play a big role in ensuring that teaching and learning takes places effectively. Therefore, teachers need to be more creative and innovative in delivering instruction. This

study will provide an educational tool “Origami Magic” for the teacher and to look into the effectiveness of the materials on reading and writing performances of remedial pupils in the elementary schools. The use of the “Origami Magic” in teaching and learning is very important to assist effective learning for pupils especially remedial pupils. It also will be based on the requirement and the need to attract and motivate the remedial pupils who are identified as a special remedial group.

2. Literature Reviews

A. Special remedial child

The term referred to a group of children who doing poorly in school, but not eligible for special education. In the context of education in Malaysia, these children are labeled as a special remedial child. According to National Society for the study of Education, these children usually find the traditional type of school programme too hard to handle without some modifications of the programme to adjust requirements to their normal capacity of achievement. The pupils who are removed from mainstream classroom and taught in a special remedial class.

B. Reading and writing skills

Reading is clearly an important skill. In fact, reading is much more than a single skill: it involves the coordination of a range of abilities, strategies and knowledge [3]. Writing was considered less important than oral communication, since most citizens of the new nation had no need to write except to sign their names. All students needed to know for that simple translation was handwriting and spelling [4]. It is actually

important to connect reading and writing instruction for corrective readers. Since reading and writing develop simultaneously, and strengthen and build upon each other, it is imperative that students with reading difficulties have opportunities to write and observe others as they write [5]. "Reading and writing instruction should not be separated, nor should writing instruction be postponed until students are able readers" [6]. Further, as they write and observe others write, they construct knowledge about language conventions such as spelling, punctuation, capitalization, and paragraphing.

C. The strenghts of the origami

At the mid 1800's, origami was a delighted project for your children. There is the satisfaction of being able to fold a piece of paper into a book. They learn creativity and perception and surprisingly they learn also to relax. Origami, considered the Japanese art of paper folding has long been and continues to be a fun and educational activity.

Origami compels the students to develop skill in an interesting way. Attentiveness is an essential in our daily existence. The art of origami allows students to pay attention and is beneficial for fine tuning motor skills. [9] This activity requires students to use their hands to fold the paper in order to achieve their goal. When students were experiencing with the difficulties, they will use their fine motor skills to solve it particularly. Different papers and colors will help improving student's vision. They will take their interest to watch and do more advanced origami.

Origami has grown in popularity as a teaching and educational tool. Educators and teachers use origami in the classroom. This activity has proven to be effective in teaching children to be patient and attentive. The art of paper folding can actually bring people out of their shell and encourage them to join in conversation and group activities. [10]

Parents use origami at home to help their children develop different skills. This activity can help children develop their reading and writing skills. Origami teaches concentration, patience and problem solving, all imperative to the growth and development of children. Parents may use this activity to occupy a child who is bored or lonely. [11] It was an inexpensive activity that a parent and children can do together. They spent time together for building a good and close relationship.

D. The origami magic

There are eight Origami Magic using as educational tools to improve reading and writing performances in Bahasa Melayu. A piece of A4 paper or manila card with some word cards and picture cards are used to create new games or creative activities for remedial pupils. Different shapes and variety of colors allows students to develop psycho motor skills and they helps hand, eye muscles and hand-eye coordination to develop. 'Use a piece of paper, make a simple book' is described as new innovation for remedial pupils. In addition, open a possible world will make a big difference for children better life. Variety types of Origami Magic helps to improve the reading and writing achievement in Bahasa Melayu.



Figure 1 : Castle house



Figure 2 : T book



Figure 3 : Letter book



Figure 4 : Ice Cream book



Figure 5 : Eight-leaves



Figure 6 : Gate fold/ Z fold



Figure 7 : Flower fold

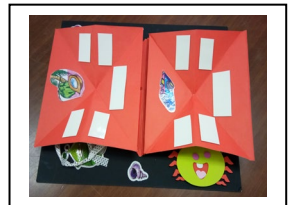


Figure 8 : Sandwich

3. Statement of Problem

Special Education Department, Ministry of Education has defined the special remedial programme as an educational programme provided to students who are struggling with mastering 3R (Reading, Writing, Arithmetic). There are 54,000 Year One pupils identified with low literary skills were enrolled in the Early Intervention Reading and Writing Class (KIA2M) while 117,000 Year Four pupils without basic numeracy skills were on the 3R Remedial Programme (Protim) in 2008. The Literacy and Numeracy Screening (LINUS) programme is aimed at ensuring that all Malaysian children acquire basic literacy and numeracy skills after three years of mainstream primary education. The Education NKRA has set a 100% literacy and numeracy target for all Year Three pupils in Malaysia. By basic literacy skills, the children are expected to have the ability to read, write and understand words, simple and complex sentences (using conjunctions) in Bahasa Melayu and apply such knowledge in learning and everyday communication.

Starting from 2019, LINUS have been cut off and replaced again by remedial programme. Remedial class is different from special education in that it is a remedial programme which conducts screenings of Year one to Year six pupils in January, June and September every year to identify pupils who are weak in literacy and numeracy skills. The instruments with reading and writing skills are prepared by the Malaysian Examinations Syndicate and passed on to the district education offices to be distributed to schools. As this is a screening as opposed to a test, teachers are allowed to provide guidance to the students by rewording the questions and giving examples.

Pupils who fail the screening test will be enrolled in remedial classes with ten periods per week for literacy remedial and seven periods per week for numeracy remedial. These pupils who have learning difficulties are placed in a special class in a mainstream school attended by remedial teachers and the remedial programme offered well structured to fulfill their needs. There is no doubt that pupils with learning difficulties such as dyslexia need individual attention from teachers. The remedial teachers are given a challenging task to ensure that pupils to master the required skills within three years. It is important that they keep themselves updated to the new innovation methods in handling children with learning difficulties.

4. Objectives of Study

General research objectives of analyzing the effectiveness of Origami Magic on reading and writing performances of remedial pupils in elementary schools. The specific objectives of the study were to:

- Identify the effectiveness of Origami Magic in an effort to attract pupils in learning to read among remedial pupils
- Identify the effectiveness of Origami Magic in an effort to attract pupils in learning to write among remedial pupils

5. Hypothesis

Ho: There is no significant difference between the achievement score of remedial pupils before and after applying the Origami Magic.

H1: There is a significant difference between the achievement score of remedial pupils before and after applying the Origami Magic.

6. Research Methodology

It was an experimental research which is the best design to use for conducting a comparative research among groups. It involves the collection, analysis and interpretation of data collected for the purpose. A validated achievement test were used to measure the measurement level of remedial pupils. The study was conducted during a period of three months from February 2019 to April 2019 in a primary school for remedial pupils namely "Origami Magic" at Kluang, Johor. All the pupils enrolled in this remedial class from different learning disabilities. The pupils who were failed the screening test will be enrolled into remedial class. The eight pupils [3(37.5%) girls

and 5(62.5%) boys] with a mean age 8 years, range 7 to 9 were identified with reading and writing disability.

The pupils were divided into experimental and control group contained each four members. The experimental group are taught by the Origami Magic. However, the control are taught by the normal teaching method. In the study, teacher used the Origami Magic and designed some interactive games or activities for improving the hand-eye coordination of remedial pupils. The teacher applied the 'Origami Magic' for twelve weeks. Since pupils showed a very little change in their performance so they were observed after every fifteen days. Observation sheet was prepared to note down improvement activities of the slow learners. After completing the duration of twelve weeks, the pupils of experimental group were twice post-tested and the result were recorded. Post tests were also taken from the pupils of control group as well. The pre-test and post-test were compared to find out the improvement.

7. Findings

A. Instruments of research

Pre-test and post-test were used as an instrument in this study. They were of 50 marks. The scores of pupils were used it to find the achievement level of the pupils after the 'Origami Magic' was applied. Similar pre-test and post-test were used to test the achievement level of control and experimental group. The pupils were given one hour to complete the test.

B. Analysis data

The data collected through pre-test, post-test and observation sheets. A comparative analysis was expressed in terms of mean. The data about student reading and writing performance were treated by independent as well as dependent t-test and significant different was calculated. A summary of pre-test Bahasa Melayu reading and writing performances of both groups were given in table 1 and table 2. The pre-test results for both groups are almost same. The remedial pupils are selected from pupils of Year one and Year Two who have the same achievement level.

Table 1: Experimental/Control Group Pre-Test Bahasa Melayu (Reading) Results

Group	Stu-1	Stu-2	Stu-3	Stu-4	Mean
experimental	6	8	11	13	9.5
Control	5	7	10	12	8.5

Table 2: Experimental/Control Group Pre-Test Bahasa Melayu (Writing) Results

Group	Stu-1	Stu-2	Stu-3	Stu-4	Mean
experimental	8	9	12	15	11
Control	7	8	13	12	10

The two groups were taught the same skills but different methods. The experimental group was taught with Origami Magic as educational tool but the control group was taught with normal teaching technique. The post-tests Bahasa Melayu reading and writing performances of both groups were presented in table 3 and table 4.

Table 3: Experimental/Control Group Pre-Test Bahasa Melayu (Reading) Results

Group	Post-test	Stu-1	Stu-2	Stu-3	Stu-4	Mean
Experimental	1	23	24	34	35	29
Control	2	9	10	13	12	11
Experimental	1	21	26	35	38	30
Control	2	8	8	11	14	10.3

Table 4: Experimental/Control Group Pre-Test Bahasa Melayu (Writing) Results

Group	Post-test	Stu-1	Stu-2	Stu-3	Stu-4	Mean
Experimental	1	28	33	42	39	35.5
Control	2	12	11	13	18	14
Experimental	1	21	31	40	43	36.3
Control	2	7	9	10	12	9.5

The table 3 and 4 indicated that the post-test results of the experimental group was higher than the control group. As we know, origami is an excellent way to entertain children at the same time as stimulating their imagination. It also helps develop hand-eye coordination, fine motor skills and mental concentration. As well as being entertaining, children will gain a series of benefits from stimulating their creativity, improving their coordination skills and they will have a better understanding.

C. Testing of research hypothesis

T-test was performed to test the hypothesis of the study. Results concluded that the mean score of students taught by the Origami Magic was higher than the mean score of the students taught by normal method in table 5.

Table 5: Combined Mean Score of Students for Pre-Test and Post-Tests in Reading Performances

Group	Combined mean	T-value
Pre-test Experimental	9.5	0.46 (df6) at p >0.05
Pre-test Control	8.5	
Post-test Experimental 1	29	5.43(df8) at p <0.05
Post-test Control 1	11	
Post-test Experimental 2	30	0.02(df8) at p <0.05
Post-test Control 2	10.3	

In pre-test, the t-test results are not significant ($t=0.46$, $df=6$, $P>0.05$). There is no difference between students who do not apply any teaching methods in Bahasa Melayu (reading) for experimental and control groups. However, the t-test results in post-tests are significant ($t=5.43$, $df=8$, $P<0.05$) and ($t=0.02$, $df=8$, $P<0.05$). There is a difference between students who have applied normal teaching methods and students who have applied the Origami Magic in Bahasa Melayu on reading performances. The both post-test results showed the Origami Magic is able to increase the reading performances in Bahasa Melayu as well. Reading is extremely interesting activity if teachers will able to create them a great study environment. Remedial students should be taught through more attractive approach with varied teaching tools. By the way, Bahasa Melayu is often associated with tedious subjects that bored pupils and sometimes considered difficult by some students. Ongoing efforts given by teachers will provide a positive impact on remedial student learning.

Table 6: Combined Mean Score of Students for Pre-Test and Post-Tests in Writing Performances

Group	Combined mean	T-value
Pre-test Experimental	11	0.46(df6) at p >0.05
Pre-test Control	10	
Post-test Experimental 1	35.5	0.11(df6) at p <0.05
Post-test Control 1	14	
Post-test Experimental 2	36.3	0.03(df6) at p <0.05
Post-test Control 2	9.5	

The same situation had occurred for writing performances. In pre-test, the t-test results are not significant ($t=0.46$, $df=6$, $P>0.05$). There is no difference between students who do not apply any teaching methods in Bahasa Melayu (writing) for experimental and control groups. However, showed that the t-test results are significant ($t=0.11$, $df=8$, $P<0.05$) and ($t=0.03$, $df=8$, $P<0.05$). The null hypothesis is rejected. There is a difference in the writing performances of Bahasa Melayu before and after applied the Origami Magic for both of the post-tests. Research has shown that the Origami Magic (paper-folding), particularly in the elementary school years, is a unique and valuable addition to the curriculum. Origami is not only fun, but it is also a valuable method for developing vital skills.

8. Conclusion

The study showed that the Origami Magic has relatively high impact in improving remedial student achievement, especially in reading and writing skills. As discussed at the beginning, educational tool is potential to produce an active learning. The Origami Magic is a new innovation for release the boredom and tiredness of remedial students. In an effort to strengthen the teaching of basic reading and writing skills, teacher have to create more creative and interactive games through the Origami Magic. In addition, remedial pupils are described as passive. The Origami Magic enables them to interact with others and connect who they can relate to. This would be beneficial for students. The Origami Magic also involves problem solving and it is a needed skill for daily activities.

Therefore, strong effects of the remedial teachers could increase the excellence of remedial pupils in basic reading and writing skills.

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