

*A Case Study of the Impact on Reading Ability of Students with Learning Disability as
Using Multi-sensory Reading Materials in Elementary Schools of Taiwan*

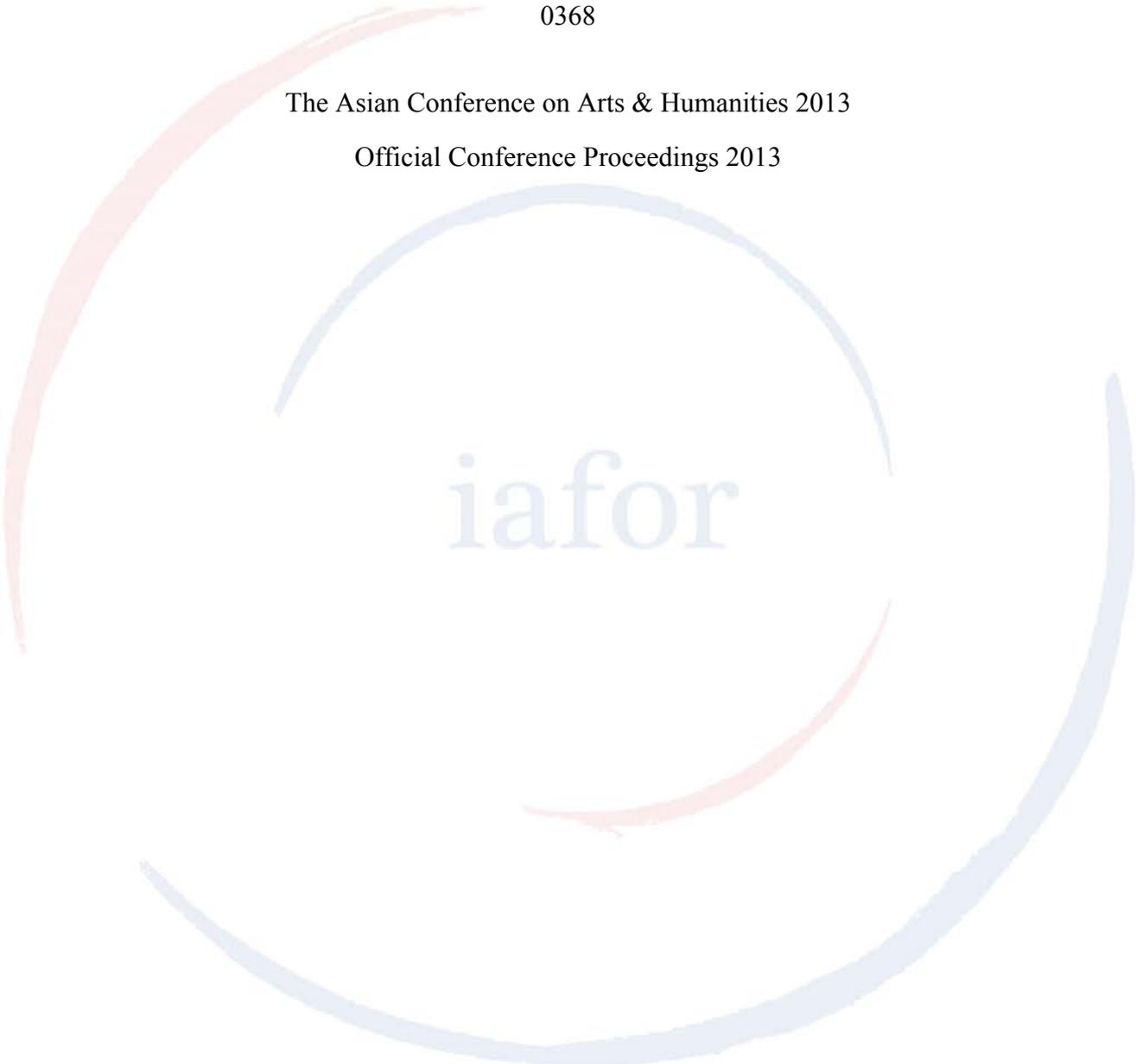
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1. Introduction

Reading is not only the core of education and learning but also a lifelong instinct behavior. Through reading, we can stimulate the imagination of children, so that they enrich their lives through sound, pictures and words. As children read a book, they open their wings of imagination and creativity. Through September 1998 to August 1999, the Education Minister of the United Kingdom, David Blunkett, pointed out that: "Every time we read the books, we open a window toward the world. Reading is the foundation of various learning. Of all the things we do, reading frees our minds the most. "

In American studies, if a child learns no basic reading ability before third grade, he or she will encounter obstacles when learning all sorts of subjects in the future. Therefore, a good reading ability leads to a better learning result. A good reading habit benefits one in learning a lot. Thus, the advocate of reading is the key to a successful education.

In addition to visual reading, many studies have pointed out that a combination of verbal, listening, ng, kinesthetic and tactile learning leads students toward a wider learning aspect, and further enhances their reading abilities. Our study not only provides the students with reading books but also self-made electronic story books. With words, pictures, and sounds combination, we expect the students to correct the pronunciations through the electronic books. For those unfamiliar words, they can learn the meanings, usage, and pronunciation with simply a click on the Tablet PC . We hope that besides arousing students interests in reading, we will also be able to enhance their memory, literacy, reading fluency and reading comprehension.

In recent years, many countries including Taiwan uphold the principles----- "equal opportunities in education," and " have faith in every child ." Special educations gradually gets attentions. The sound of putting special students back in normal class arouses. People advocate "integrated education" and expect "the returning to the mainstream." Therefore, how to raise special students' learning ability is an important education issue.

In a word, this case study about how reading story books and electronic story books can help the students in lower grades with learning difficulties. And help the students with reading ability and learning characters through multi-sensory reading method. In these ways, we discuss the effectiveness of multi-sensory reading method has on students with learning difficulties.

2. Researching purposes and problems

2.1 Researching purposes

According to the phenomenon observed in the background of the previous section, the concrete researching purposes are as following:

- (1) To know how multi-sensory reading can affect literacy of students in lower

grades with learning difficulties.

(2) To know how multi-sensory reading can affect reading fluency of students in lower grades with learning difficulties.

(3) To know how multi-sensory reading can affect reading comprehension ability of students in lower grades with learning difficulties.

2.2 Researching problems

According to the above purposes, the concrete researching problems are as following:

(1) Does multi-sensory reading raise literacy of learning-disabled students in lower grades?

(2) Does multi-sensory reading raise reading fluency of learning-disabled students in lower grades?

(3) Does multi-sensory reading raise reading comprehension ability of learning-disabled students in lower grades?

3. Definitions

3.1 Multi-sensory

The multi-sensory reading method in the study refers to the apply of self-made electronic story books besides normal books. With the combination of words, sounds, and pictures, we expect the students to click on words or pages that they would like to learn on the tablet PC, and correct their pronunciation and learn the meanings. For those unfamiliar words or paragraph, students can also learn about them through information that pop out as they click on icons. If there are words of plants or flowers, we may as well offer them touching, smelling, and tasting experiences to help students understand.

3.2 Mentally disable

According to the definition of mentally disable and gifted students in Taiwan, learning disable is also known as neural abnormal function. It can cause memory, comprehension, focusing problems and further leads to difficulties on learning. The difficulties are not due to the lack of sensory, mentality, or emotional stimulations. Nor is it the result of bad education or environment factors.

The judgments of learning disable are as follow:

(1) Normal intelligence or above

(2) Significant differences in intrapersonal ability

(3) Significant difficulties in auditory comprehension, oral expression, literacy, reading comprehension, writing, math and other academic performance. After certain apply of educational method, the situation remain the same.

3.3 reading ability

Reading ability here in the research refers to word recognizing ability, reading fluency ability, and reading comprehension ability.

4. Research limitation

Limited by researching funds and academic issues, I only took three learning disabled students in lower grades as sampling study. Thus, the result of the research can only stands for certain part of fact, and cannot represent the other learning disabled students' actual learning situation

5. Literature Review

5.1 Metacognition

Metacognition means the awareness and understanding of a variety of thinking aspects. In the early stage and middle stage of childhood, children's pure minds significantly expand and construct the theory. It regard human as the body of mind and produce coherent comprehension which correct s it self in the face of new proof. Most research about mental theory mention children's "mind reading", and their detection of feelings among themselves and others. Metacognitive focus on the children understands of mental activity, or the meaning of thinking. In order to operate in the most effective way, the MHS must has self awareness. It should reach the sort of understanding level like "I have to write down the phone number or I might forget" as well as "this is a complex paragraph; I have to read again in order to grasp the author's point ". To make metacognitive more practical, children must monitor their own behavior, also known as "cognitive self-regulation (cognitive self-regulation), to arouse their understanding of thinking, and to overcome the difficulties.

In the face of complex job children's self-mediation situation is obvious in their comprehension monitoring ability. Compared with younger students, 12 and 13 years old teenagers show more attention on those paragraphs which they consider un reasonable. They do not continue reading, but slow down and look back to see if they miss any point. The more sensitive they are on mistakes, the more possible that they will correct their own writing performance.

When reading, many skills functions and adds burdens to MHS. We have to notice the combination of words when reading and transform them to the sound of language. A paragraph is composed of various meanings of words and they end up as a whole concept. In fact, reading requires a lot of skills and they have to function instantly and automatically on the spot. If one of the skills failed to function well, reading ability decline as well

In recent years, the topic "how to teach the children read" engaged in a fierce debate. Some scholars support whole-language approach, they advocate that reading should be taught in the natural way of language learning. Initially, the children should be exposed to the full article, including stories, poems, letters, posters, and the list, so that they know how to appreciate the written language in communication utility. As long as reading stays meaningful children will have incentive to find the specific skills required.

The other advocates phonics approach, and that the children should be given simplified reading material which translates written symbols to the basic rules of sound. But only after they are fully skilled can they start complex reading material.

The scholar noticed that children perform best in the combination of both of the above. The connection between pronunciation and the words help children to learn words they don't know. However, if the practices of basic skills are over emphasized, children might not be able to notice the key of reading----- to understand. Who can read out loud but has no aware of the meaning does have effective reading. For example, if they are to be tested, they should be more careful than simply reading for pleasure. We can also ask them to interpret the meanings of paragraphs in their own words to enhance their comprehension ability.

For kindergarten, first grader and second grader students, teaching including sounds can improve reading accomplishment, even for those left behind in reading. Students at this age experience critical moving of attention when learning. They are transforming from "learning to read" to "read and learn". Further more, after teacher's reading with writing and pronunciation and add in other practice (encouraging students to deal with difficulties they faced in learning and put reading together with all other subject), the first graders show excellent improvement in reading and writing.

Researcher refers to the two kinds of cognitive development theory mentioned above and processes them in reading. After that, they conclude the causes of pronouncing to word-recognizing to reading comprehension to vocabulary, background knowledge, realizing ability, memory, and focusing. Among them literacy ability is the most critical when learning to read. Reading comprehension ability' five factors help student gain knowledge as they have the reading ability.

3.2 Children reading development theory

Jeanne Chall (1983) pointed out six stage in reading development. The first three are about “Learning to read”, and the latter three are about “Reading to learn”.

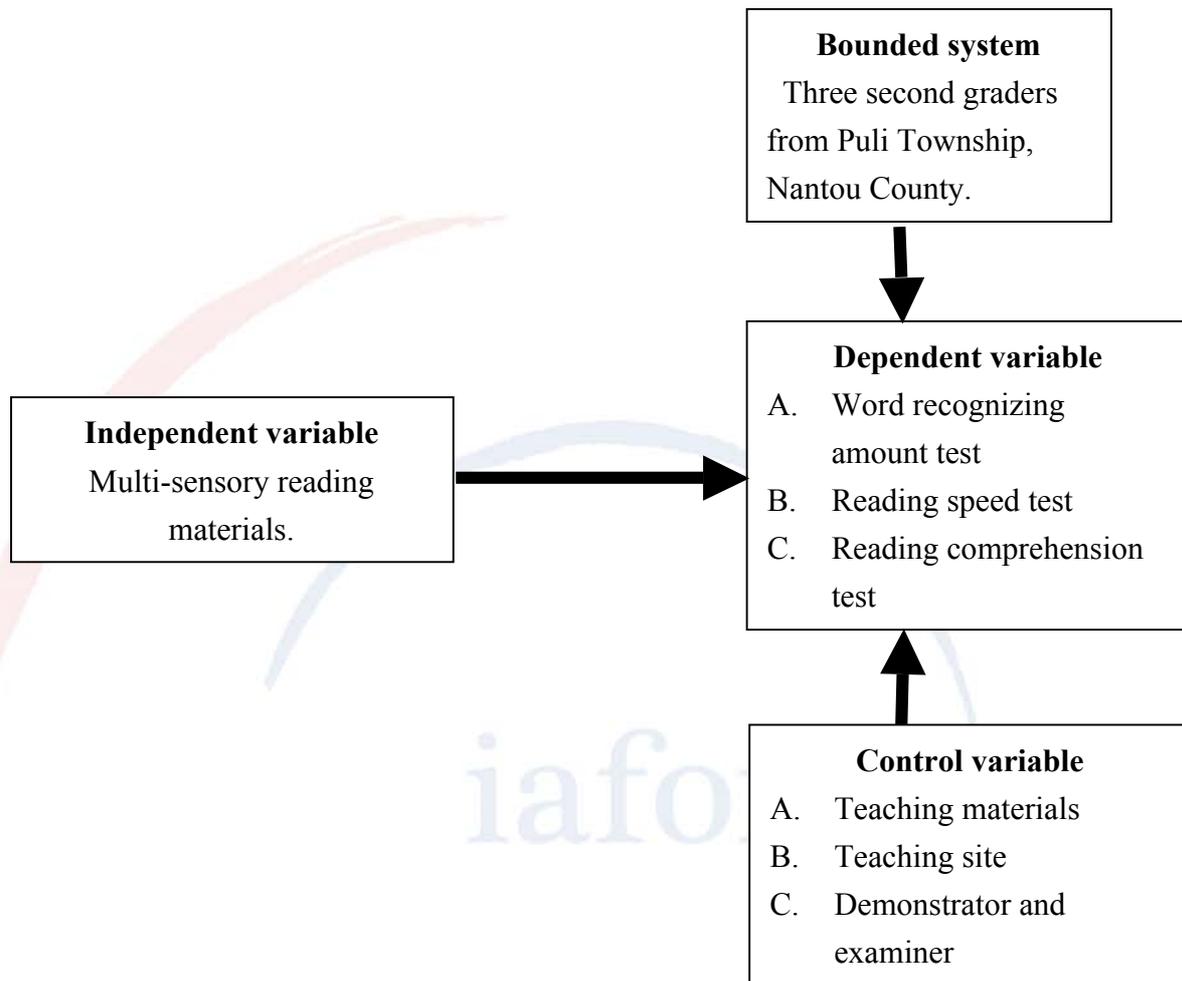
Further descriptions are as follows:

- (1) Preschool period: The learners start to get familiar with the connection between sound and language.
- (2) Word recognizing period (six to seven): The learner start to learn about the relation between word and sound.
- (3) Fluent period (7 to 8): children at this stage judge what they have learned in the previous stages and enhance fluency.
- (4) Reading new information period(9to 13): the goal of reading is no longer learning how to read but to get information through reading. Vocabulary they know expand at the period
- (5) Various aspect period(14 to 18): .they gradually learn to analyze the content they read, and think from different aspect.
- (6) Construct and rebuild period (over 18): learner can develop their own thoughts through reading and rebuild their knowledge through others experiences. The stage can be reach during college or even later and probably only smarter ones are able to reach the stage.

6. Method

This research is a case study of three elementary students with learning difficulties. We evaluate the influence on their word recognizing ability, reading fluency, and reading comprehension ability under our teaching method. This chapter is divided into three sections, the first section illustrates the choice of the object of study; Section II describes the researching tools; Section III describes the expected results.

Chart of the study is as follows:



In this study, three second graders from Puli Township, Nantou County were chosen. The screening criteria is normal intelligence or above average. And the literacy amount has been evaluated by "Chinese grade literate Scale (Wong Sau cream, 2002). They scored lower than 2.0. And in "reading comprehension difficulties screening tests (Ko Hua-wei, 1999), they score lower than the same graders by .45 .

The researching period is from September 2013 to January 2014, for about 20 weeks. The teaching is once a week, about 60 mins each time. For the first teaching, a test is held. Then an evaluation is held every four weeks. For the last teaching, the test was filmed and recorded, in order to present the testing situation.

The teaching materials chosen for the research are books recommended by education office in Taiwan----- the 101 worth reading books. And the electronic story books made by the author.

The research is to evaluate the first graders students performance on word recognition, reading fluency and reading comprehension ability. Chosen evaluation tools are as follows:

6.1 Word recognizing amount test

Researcher refer to the elementary school word chart and student's similar word recognition book by Nantou County Government and made her own word recognition testing materials, in order to test the student's ability on matching the right word with the right pronunciation.

6.2 Reading speed test

Select the text from the story in the book, and measure the average number of words the student pronounce correct per minute as reading it. The quiz has two version, context Edition and random version. The context one is tested in accordance with the normal sort of article content; random version has the text of the article content sequence randomly arranged .

6.3 Reading comprehension test

The researcher refers to the teaching materials of story book and made her own reading comprehension testing materials. 20 questions are made.

Example.

Johnny does none of his homework. The teacher said to him: "you are a headache to me! "

- (1) The teacher is sick
- (2) Johnny does no homework so the teacher doesn't know what to do with him.
- (3) Johnny had a headache so he didn't do th homework.
- (4) As The teacher touch Johnny, her head aches.

7. Expected results

- (1) Does multi-sensory reading enhance the case student's word recognizing ability?
- (2) Does multi-sensory reading enhance the case student's fluency in reading?
- (3) Does multi-sensory reading enhance the case student's reading comprehension ability?

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