

A Research and Development Project To Create Innovations for Children with Learning Disabilities

Padoong Arrayavinyoo

Faculty of Education, Suan Dusit Rajabhat University

Email:padoong_a@hotmail.com

Abstract

A significant number of students who were unable to read fluently exist in both school systems and non-formal education institutions. With additional intervention, these youngsters would be able to improve their reading and writing abilities. At this date, there were the lacks of innovation in reading and writing Thai language for these children with reading and writing difficulties. The researcher, therefore, tried to create innovative learning package for this purpose. The sample consisted of 20 children with learning disabilities selected purposively using Specific Learning Disabilities Survey as an instrument. The creation of the innovation was based on primarily the ITPA, Basal Reading and Phonics Method. The programs were examined by experts and were tried out prior to the experimentation and were improved by experts 2 times. The final product was the package consisting of 20 booklets and to 6 CD's with the same contents, proved to be efficient for correcting deficits in reading and writing.

Introduction

Learning is a part of one every day's life because human beings keep learning everyday. Reading can open up our minds to the world. The inability to read affectively may lead to possibility in broadening our horizons to the new world. Reading plays essential parts in learning and in bringing us up to the new world.

Children who have difficulties in reading, or in other words, who are not efficient readers are found both in school systems and in out of school systems. A report from the U.S. Department of Education indicates that in the last 2 years the number of children with learning disabilities accounted for 4 – 5 percent of the school – aged population. (Hallahan, kaufman and Lloyd, 1996)

In Thailand no formal figures were readily available. However, it was strongly believed that the number of school children facing difficulties in reading and writing were not much different from those made available in the United States. Using such statistics to estimate the number of the children with learning difficulties in Thailand, it would be roughly estimated that the number of school children with learning disabilities would be in the hundred thousands, approximated from the total school population in both primary and secondary levels of 12 million in the academic year 2004. Without appropriate and professional help, these learning disabled children would face unavoidable difficulties in learning not only Thai language but also other academic areas.

Special educators in general firmly believed that the children with learning disabilities encounter difficulties in information processing as the priority skills in learning. One of the preliminary strategies in helping these youngsters to learn effectively was to train them to perceive and process the information better through ITPA strategy, which emphasized basic psycho – linguistic abilities in learning. After these abilities were maintained, then the children would be better equipped to read and to write.

After that, a number of strategies might be applied for the learning disabled children e.g. distinguishing the alphabets with similar formation, (Winebrenner, 1996) Basal Reading technique (Westmen, 1990) and phonics strategies (Mercer & Mercer, 1998)

An innovation reflects new ideas which would result in the creation of new items. After the new ideas were conceived, the series of new ideas were formulated, the series of observation would follow. In putting the new ideas into innovative products, the purpose of creating the new products were to be specific so that the innovation would readily be assessed to determine whether or not the new innovation would be effectively applied. (http://www.tafe.swin.edu.au/i2e/inn_frame.html, http://www.oecd.org/document/0,2340,en_2649_33723_2516571_1_1_1_1,0, 2004)

Procedure

1. Population

The population for this study referred to the learning disabled children in schools.

Sample The sample consisted of 20 children with learning disabilities who came to special education clinic at Special Education Department of Srinakarinwirot University to receive remedial service in reading and writing. The subjects were chosen as the sample in 5 steps: 1)

Screened by using Specific Learning Disabilities Survey created by Dr. Padoong Arrayavinyoo 2) Studying his long records. 3) Interviewing the LD Children. 4) Interviewing the LD parents and 5) Testing the prospective LD children in their abilities to read and write comparing with their normal peers. All the above information was analyzed and the decision was made based on the said information.

Research Design The Single Subject Design with Single Baseline Design of A-B-A was applied in the study.

2. Instrument

Three instruments were employed 3

2.1 Specific Learning Disabilities Survey (SLDS).

This was a 5 – point scale questionnaire, designed for the school teachers to use, consisting of 80 items exploring the difficulties of the children in reading, writing and arithmetic. The SLDS possessed good quality of research instrument.

2.2 Reading and Writing Test (RWT).

The RWT assessed the abilities of the children in readiness, reading and writing, classified into 8 areas, consisting of 10 items for each area. The tests were corrected by 3 experts and this possessed good quality of the test property.

2.3 Effective Learning Programs (ELP)

These were the innovations which were the products of the study, consisting of 20 ELPS. All the 20 ELPS were created in accordance with a number of theories; perception theory, reading and writing theories, were examined by 5 experts who specialized in Thai Language and educational technology, were tried out 1 time, improved and then put into the experiment with 20 LD children. Each individual ELP was created with the following specific objectives:

ELP 1, 2, 3, 4, 6 for training visual processing ability.

ELP 3, 5 for training auditory processing ability.

ELP 5, 6 for training sequencing ability both visually and auditory.

ELP 5 serving 2 purposes.

ELP 7, 9 for training letter discrimination ability.

ELP 9, 10, 19, 20 for training basal reading.

ELP 11, 12, 13 for training reading for main ideas.

ELP 14, 15, 16, 17 for training hand writing.

ELP 18, 20 for training writing – spelling and sentence writing serving more than 2 purposes.

3. Experiment Procedure

3.1. LD children were chosen as sample.

3.2. Creation of 20 ELPs.

3.3. Ascertain the quality of the instruments so that both validity and reliability were achieved.

4. The subjects assessed the abilities in the following areas so that the baselines could be established:

4.1. Visual processing ability.

4.2. Auditory processing ability.

4.3. Sequencing.

4.4. Organization ability.

4.5. Basal reading.

4.6. Reading for main ideas.

4.7. Hand writing.

4.8. Spelling and sentence writing.

Application of the 20 ELPs to the LD student individually.

Then the children were put into small groups in accordance with the abilities, and the application of the ELP continued. The abilities of the LD children were assessed in every session of the experiments for approximately 20 times. The experiments ceased but the recording of the abilities of the students continued for another 5 sessions using related activities. The data were then analyzed using line graph to determine the trend.

5. Data Analysis

The data were analyzed using visual presentation. The abscissa represents the number of session the dependent variables were recorded while the vertical line represents the amount (in %) of dependent variables on records. The significance were ascertained at 20% increase of dependent variables which was specified by the experts.

The dependent variables – the reading and writing skills in 8 areas increased by 20% as will be presented in the follow illustrations. It was presumed that the 20 ELPs served as effective tools in increasing the reading and writing skills of the children with learning disabilities

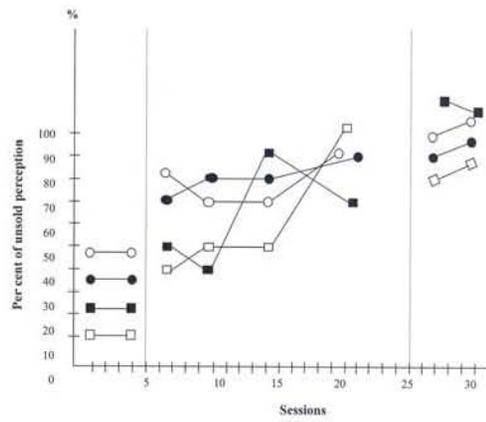


Figure 1. Visual Perception Abilities of the LD Children

- Refers to Figure Ground Ability
- Refers to Visual Closure Ability
- Refers to Visual Discrimination Ability
- Refers to Visual Memory Ability

It was evident from Figure 1 that the visual perception (including figure ground, visual closure, visual discrimination and visual memory abilities) of the LD children increased significantly. This was the result of the application of ELPs 1, 2, 3 and 4.

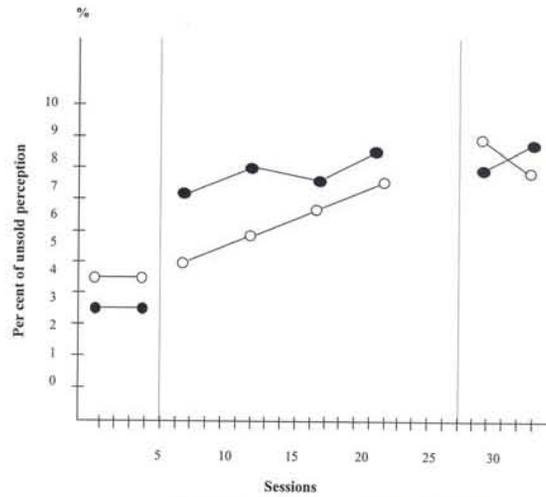


Figure 2 Auditory Processing Abilities of LD Children

- Refers to Auditory Discrimination Ability
- Refers to Auditory Memory Ability

It was evident from Figure 2 that the auditory processing abilities of the sample increased significantly. This was the result of the application of ELP 3 and 5.

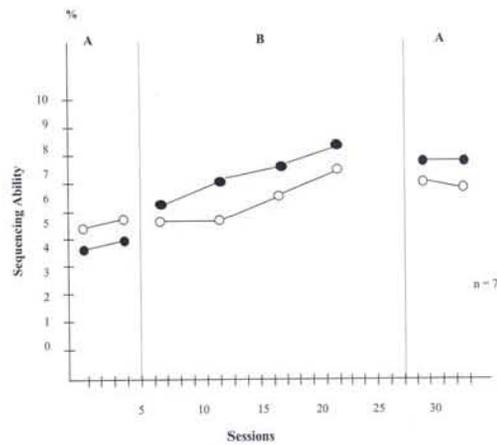


Figure 3 Sequencing Ability

- Refers to Visual Ability
- Refers to Auditory Sequencing Ability

It was evident from Figure 3 that the sequencing abilities – both visually and auditory – increased significantly. This was the result of the application of ELPs 5 and 6.

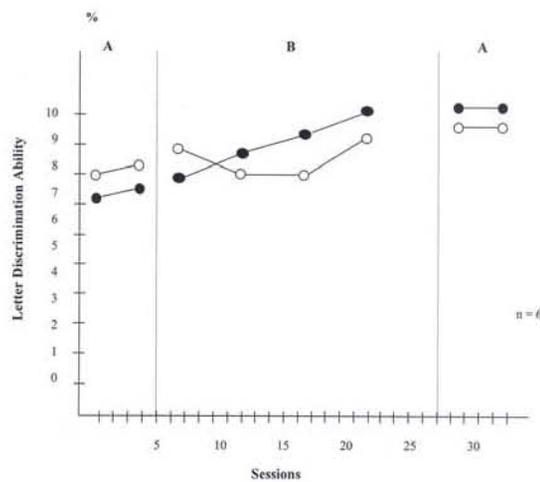


Figure 4 Letter Discrimination Abilities

- Refers to Alphabet Discrimination
- Refers to Consonant and Vowel Discrimination

It was evident from Figure 4 that the consonant and vowel discrimination abilities of the LD children increased significantly. This was the result of the application of ELPs. 7 and 9.

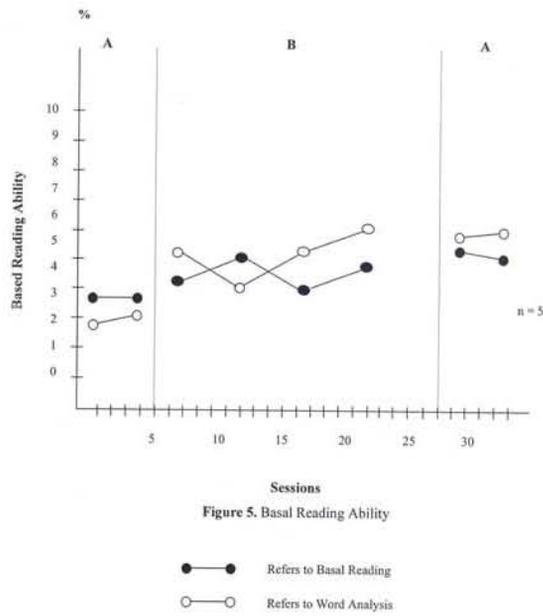


Figure 5. Basal Reading Ability

It was evident from Figure 5 that the basal reading and word analysis abilities of the LD children increased significantly. This was the result of the result of the application of ELPs 8, 10, 19, 20.

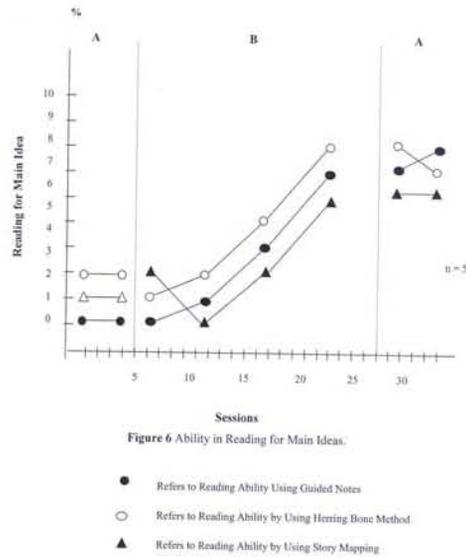


Figure 6 Ability in Reading for Main Ideas.

It was evident from Figure 6 that the ability of the LD children in reading the in reading for main ideas increased significantly. This was the result of the application of ELPs 11, 12, 13.

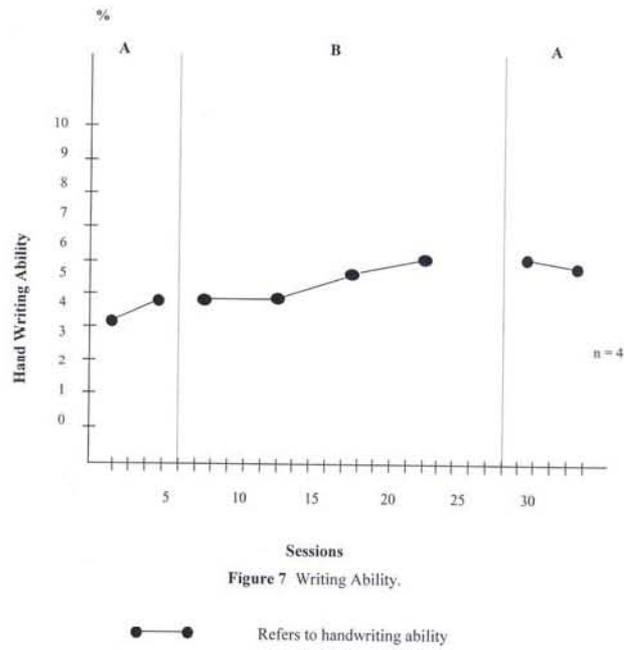


Figure 7 Writing Ability.

It was evident from Figure 7 that the hand writing ability of the LD children increased significantly. This was the result of the application of ELPs 14, 15, 16, 17.

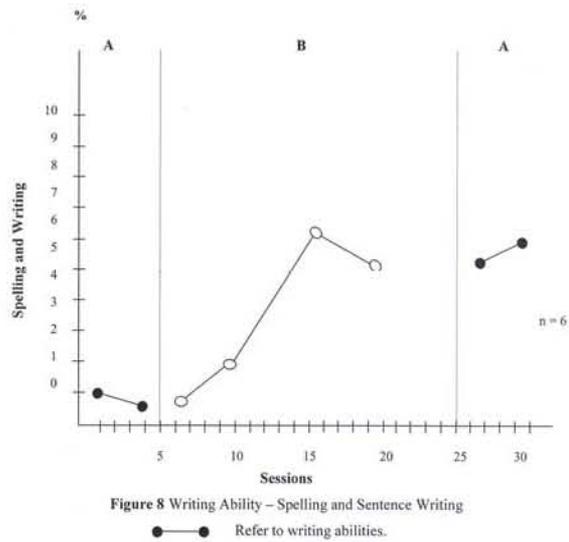


Figure 8 Writing Ability – Spelling and Sentence Writing

It was evident from Figure 8 That the writing ability – spelling and sentence writing of the LD children significantly increased. This was the result of the application of ELPs 17, 18, 19 and 20.

Results As a result of the study, the following ELPs were obtained.

1. Visual Figure Ground
2. Visual Closure
3. Visual Discrimination and Auditory Discrimination
4. Visual Memory
5. Auditory Memory and Auditory Sequencing
6. Picture Sequencing
7. Letter Discrimination
8. Work Arrack
9. Consonant and Vowel Identification
10. Word Analysis
11. Guided Note
12. Herring Bone Method
13. Story Mapping
14. Eye Hand Coordination
15. Fading Letter
16. Fading Number
17. Color Coded Writing
18. Story Board Writing
19. Rhyming
20. Phonics Method

All the 20 FLPs were later transformed in to VCD

ELPs 1-6 for training skills in visual and auditory perception.

ELPs 6 and 9 for training in reading readiness.

ELPs 8, 10, 11, 12, 13, 20 for training reading skills.

ELPs 14, 15, 16, 17,18,19,20 for training writing skills.

Discussion

From the research findings which indicated that the reading and writing abilities of the LD children improved significantly, it could be generalized that the 20 ELPs served as effective tools in the literacy for these youngsters. Moreover, it was found that the visual and auditory perception of these children also improved, it could, therefore, be presumed that the visual and auditory processing of the LD children were better off than before. These findings seemed to be significant because information processing was one area of major difficulty for the learning disabled children. When their disabilities could be relived, then their abilities for their learning could partly be improved.

One of the interesting properties of the ELPs was the fact that the learning activities were readily organized in sequence- beginning with ELPs 1-6 for the training of visual as well as auditory processing, which were seemed to be, as earlier mentioned, a major obstacle for these youngsters; flowed by ELPs 7-9 which trained readiness for reading and writing, and then ELPs 8, 10 for basic reading. ELPs 19, 20 could be used interchangeably at this period since those 2 sets were also effective in teaching children to read and write. ELPs 11, 12, 13 could be applied at this stage because the children might have illustrated the basic reading skill and may encounter the problems of reading for main ideas. Some of the LD children, not all. Illustrated the behavior of back word writing or mirror writing such as

๑ → ๔ ๖ → ๓

This could be eliminated by the application of ELPs 14, 15, 16 and 17 which served as instruments for improving writing. Finally, the ELPs, 18, 19 and 20 could be used to help both reading and writing skills for these children.

It was evident from the related literature that the majority of the learning disabled children learned better through visual modality than the auditory ones (Hallaham, Daniel & Kaufman, 1996). The 20 ELPs were created based on the above principle. Therefore, all the 20 ELPs utilized visual representation in all learning activities. It was, as a result, the effective tools in helping the children to learn to read and write, It was recommended that the ELPs be used in teaching the LD children to read and write. Then their reading and writing skills would eventually be improved.

Biography

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