



## Avoiding the Weaknesses that can be seen in Writing According to the Size and Shape of the Handwriting of Fourth Grade Students

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**ABSTRACT:** Focusing on Sri Lankan education in particular, this research investigates remedial teaching programs to overcome deficiencies in handwriting according to the size and shape of students in primary education. In this study, descriptive research methodology is used to collect information about relevant variables in relation to topic-based objectives. By analyzing the information and presenting conclusions and suggestions. This is a sample survey that falls under the survey research category under descriptive research. This study was conducted by analyzing the data obtained by conducting a six-step remedial teaching program and six evaluations to a selected sample to overcome writing weaknesses in terms of handwriting proper size and shape, which is an academic problem that needs to be solved in the field of education. In particular, the results revealed that there is a significant positive relationship between the remedial teaching program and the correction of handwriting impairments. The strong association and positive relationship between the confirms the need for specific treatment to overcome handwriting weaknesses in Sri Lankan education sector to maximize the achievement levels of all students. Sues of remedial teaching methods to overcome handwriting impairments shows significant impact on the development of the field of education. This is confirmed by data analysis and interpretation. The relevance of this research in teaching the development of handwriting skills in education. This confirms the need for specific treatment to overcome handwriting weaknesses in Sri Lankan education sector to maximize the achievement levels of all students.

**KEYWORDS:** Handwriting, Primary Education, Therapeutic teaching programme, Weaknesses of Handwriting.

### 1. INTRODUCTION

A person become a complete man through education each country has general education objectives as well as national education objectives.

Literacy has an important roll/place among these national goals. When enhancing literacy skills, the education focuses on providing the ability of writing among the four speaking and writing.

Most of the 4<sup>th</sup> grade student of WP/HO/Polegoda Maha Vidyalaya had the ability to write letters but they were found to be weak in writing letters on the rule according to the proper features, size and shape of hand writing. This caused problem not only in the situation subject but also in other subjects too. Reading the illegible hand writing was a very difficult task and it was time contumacy too. When we classroom we found certain services related to handwriting.

The students write letters in different sized, writing incomplete handwriting, not knowing the beginning and end of a letter, starting from the end of a letter and ending with the beginning, writing the letter “r (Ra)” in the way of writing digit 6, writing with less parts of the letters, writing the letters “ k (Na)\$l (Ka)\$; (Tha) ” in sue a way that it is impossible to recognize them separately.

Therefore, I used as a study problem to overcome the weaknesses that can be seen in writing the handwriting of fourth grade students according to the prescribed elements. “Gabe” (1975) stated that children’s readiness to write handwriting develops around the age of seven or eight. The ability to write handwriting is not something that happens randomly or spontaneously. It is an activity that needs to be practiced with great effort. It is the schools’ responsibility to identify students with measures to overcome those weaknesses.

Every student in school should be able to express himself in his mother tongue or in the media he is learning otherwise, the opportunity to engage in future education will be lost. This research has been carried out with the help of ten, fourth grade students of Polegoda Vidyalaya under the aim of overcoming the weaknesses that can be seen in the size and shape of the handwriting of grade from students.



Learning to write with proper handwriting begins in the first grade. A lot of pre-writing exercises are done for this. In the second grade, activities are organized to provide the ability to write between pictures with proper features and shape of handwriting, taking care of the size. In the third grade, the activities are organized to provide the ability to write handwriting with the correct size, shape, and size of a letter.

Although it is expected through the mother tongue syllabus to acquire the above skills regarding handwriting when entering from one grade to the other grade, I found it to be a problem in the field of education to meet students with handwriting weaknesses even in the fourth grade. Local and foreign educators have offered treatment programs for children's handwriting difficulties. (Gillingham, 1940), (Gillingham and Steelman, 1956), (Waddle, 1973), (Hickey, 1977), (Cowder, 1983) have presented programs of treatment for handwriting difficulties (Laszlo, 1987) revealed that there are many children in classrooms with handwriting difficulties. (1967, Hammand) handwriting sample of 800 children of several age groups and emphasized that there are children in all classes who do not know how to write freely. (2005), the National Education Commission conducted a province-wide survey on the level of language and mathematics skills of sixth grade and tenth grade school students. 4054 students of seventy Sinhala medium schools and 2032 students of twenty-five Tamil medium schools were included in this survey covering seven other provinces of the island except the North and Eastern provinces. One of the main things revealed is that the students are very weak in writing Sinhala letters. This is stated in the introduction of the guidelines for writing Sinhala characters published by the National Education Commission. It says that it is necessary to practice correct handwriting from an early age and that Sinhala writing patterns are designed in a specific way for each letter and the child must be familiar with that specific pattern.

The foundation of a child's education lies in primary education. UNESCO has also emphasized that every student at least acquires the minimum language ability by being educated up to the fifth grade. Having students who do not have the ability to write handwriting correctly in the classroom is a major obstacle to achieving educational goals. In the secondary grades, failure to learn the respective subjects is often due to poor writing skills.

Through this research, attention has been focused on imparting some mechanical skills of writing correctly. This topic was used for research to implement a treatment program as a solution to an identified problem in the field of education.

## 1.1. Techniques to start handwriting in different countries of the world

- Rome
  - In the 1950s important reforms took place and the use of copy books and pencils spread rapidly. The use of musculature in writing began to improve the ease and speed of writing.
- India
  - In India, particularly in Bombay, where complex letters were used for writing, there were the following initiation exercises described in the records:
    - Draw straight lines slanted rega and half etc.
    - Drawing letters on sand sawdust
    - Children stick sand on letters drawn by the teacher from cardboard
    - Children should paint with stone sticks until white color appears on the slates and write letters with their fingers
    - Drawing letters with a finger in the air
- China
  - Practicing very simple letters first
  - Gradually making it more complicated
  - Initially, as a first step, they are allowed to draw over the letters printed in red color
  - Font formatting
  - Exercises such as drawing large letters and cutting them out are given initially
- Israel
  - First, the school and the child create an environment where there is no difference between school and home
  - The first class in the first stage of formal schooling is called Kinder Garden.



- Writing does not work for about two months after coming to school
- Drawing first trains the child in things like music and dance. There is a play yard for various activities for the child to get used to
- Gradually, the child begins to write simple letters to complex letters
- They have the idea that reading teaches them to write, so they give priority to reading
- Their alphabet consists of thirty-six letters

## 1.2. Weaknesses shown by students in handwriting

- Lack of motor skills
- Lack of visual discrimination skills.
- Lack of understanding of proper shape of letters.
- It is the inability to uniquely identify the differences in the letters.
- Not caring about font size.
- Not writing with spaces between letters.
- Lack of understanding and carelessness about Pillam.
- Writing less letters.
- Not writing letters round and half writing.
- Writing letters after hours.
- Writing without some parts of letters.
- Writing from the end of the letter to the beginning.
- Wrong ways to start letters.
- Dirty writing.
- Unfamiliar ways of writing on scrolls.
- Vocabulary deficiency.
- Not caring about punctuation.
- Writing from right to left.
- Unable to write name.

## 1.3. Teaching therapy for handwriting problems

Although primary education tries to make students reach the levels of making handwriting by giving them the habit of writing correctly year by year in the subject of mother tongue, there are many problems of handwriting weakness in students who are studying in primary education and in students who have finished studying in primary education.

Such weaknesses in handwriting should be identified and remedied. Children who have not reached the levels that are formed at each age and need this kind of treatment are found in every school in every class. Below are some of the writing weaknesses that can be pointed out.

- Writing letters after hours.
- Not rounding letters and half writing.
- Dirty writing.
- Wrap letters from end to start.
- Writing regardless of font size.
- Writing without balanced parts of letters.

It is mentioned in the fourth chapter of the primary education teaching methods and writing methods published by the National Institute of Education that the following activities can be done as remedial teaching for the students who show above writing weaknesses.

### A. Writing letters after hours

Most of the students who show weakness in writing handwriting are seen to write letters such as Ɔ "Ta", © "Ma", © "Ee", Ɔ "Ra". It is advisable to prepare such students to write after several drawing exercises. That is, starting with a dot and drawing



circles on the hands itself is useful for familiarizing the hand. After these are properly practiced I can give ☺☺ “Mama”, ☺☺ “Mawa”, ☺☺ “Mata”, ☺☺☺ “Vamata”, to write words like left.

B. Not rounding letters and half writing.

As a remedy for students who show this weakness, write the letters written in large letters on a pencil. Then write the letters completely on the paper. On that paper, the child places the letter on the written letters and points to the smaller size. The whole letter can be written again on another sheet of paper or the teacher can be made to draw several times on top of the letters drawn in black ink.

C. Dirty writings

Students who show this weakness should be instructed to erase or erase with their fingers when they miss a letter, or rewrite it or scratch it, and the child should be trained from the beginning to use the eraser when writing with a pencil.

D. Wrap letters from end to start

Writing the letters that the students misspell in big letters one or two times on a blackboard. Giving the student to write the letters several times so that he recognizes them first. On the blackboard, let the student get the letter next to the letter written by the teacher and give the student to write another word that comes with that letter.

E. Writing regardless of font size

A remedy for this problem is to frequently see examples of well-sized letters and to make efforts to write in such a way that more teacher attention can be given to students who show this weakness.

F. Writing without balanced parts of letters

This weakness should be done to help the child so that the desire to write is not reduced by making the correct handwriting models visible for today's students. Also, the teacher should be patient and kind towards the students who have such problems.

#### 1.4. Children's difficulties with writing in the third key stage

A study identified a cluster of writing weaknesses in some fifth-grade children in the Participant's Recommendation and Teacher's Guide. Such as:

- Being able to watch and write but unable to hear and write.
- Difficulty writing words from memory.
- Inability to write certain letters.
- Writing only meaningless letters.
- Spelling mistakes.
- Writing less parts of letters.
- Not distinguishing between certain letters.
- Writing letters together and not separating words.
- Skipping certain letters.
- Skipping writing.
- Spending more time than just writing.
- Writing each letter in different sizes.
- The amount of writing is greatly reduced.
- Not being able to write one's full name.
- Bad handwriting.

#### 1.5. Importance of studying the problem

Writing is a way of expressing one's thoughts and feelings. Writing is more consistent than language activities such as listening and speaking. The non-development of handwriting skills through primary education is a serious problem that also affects secondary education, so urgent solutions should be sought for this. According to the UNESCO organization, reading and writing help to develop many aspects of human culture and to get the novel to its rightful place. Teaching correct handwriting should definitely happen through primary education.



At the beginning of primary education, every student will be able to acquire the skill of writing the Sinhala alphabet without difficulty by developing the mechanical skills of correct handwriting through various exercises.

Through this research process and treatment program, teachers who teach in the primary grades of schools as well as teachers who teach in the secondary grades will be able to gain the necessary knowledge to guide them in their classrooms to overcome the weak students.

## 2. LITERATURE REVIEW

Every human being inevitably has to express or write down his thoughts at various times during his life. For this, language is definitely necessary. It has not been discovered until today when and where language started. Some scholars say that the primary function of language is to facilitate transactions between people. One of the main factors that separates humans from other animals is human mind and language ability. Researchers have expressed different opinions about the origin of the language. In the beginning about the origin of language, creationism, the theories that came out of the Bible stories, the theory of divine origin, the inner life theory were presented.

Later scholars such as the Greek Plato and George Hamann proposed the naturalistic theory. That is, there is a great wealth of knowledge in nature, outside of the human mind, language is provided to man through it. Later, this view was also rejected. In general, after all these views, scholars held the view that man played an active role in producing language one small step at a time. What can be said for sure about how language came about was that language developed slowly and gradually over millions of years. (Ranaweera, S. 2008) People who lived in different civilizations in the past in different countries of the world have created their own set of alphabets. The Sumerians introduced pictographs into the art of writing, and because of the weaknesses of this, a new method called ideograms was invented, and even later, the more advanced Sila script was invented. The Egyptian civilization developed an advanced writing system using the Sumerian alphabet. Traders and travelers spread the alphabet used in Sumeria and Egypt to other countries.

The Phryncians used both of these letters to create the Phoenician alphabet. The Mayans who lived in the past in Central America also created a different typeface. The inhabitants of the Mohendajaro Harappan civilizations in India's Indus Valley around 3500 BC also adopted a script system. Around 2015 AD, the people of India called Arya wrote Vedas such as Krugyapar Saman Arthavat etc. in Vedic language. The sage Panin, who lived in the fifth century BC, organized this Vedic language well and gave it the name Sanskrit. This Devanagara script is the mother tongue of several languages like Sanskrit, Pali, Hindi, Sinhala, Marathi and Punjabi.

When examining the beginning and evolution of the Sinhala alphabet, the writing of the Sinhalese alphabet began between 307 to 267 BC. These Brahmic letters evolved and the Sinhala alphabet series was born (Arangalla, R. 1992). There are two main variants of the Sinha Lakshara series i.e. pure Sinhala alphabet and mixed Sinhala alphabet. The pure Sinhala alphabet is the unique alphabet of Sinhala itself that has not been mixed with other languages. The mixed Sinhala alphabet is prepared by mixing Sanskrit letters and pure Sinhala letters. By the nineteenth century, the Sinhala language was influenced by European languages. The Sinhala language needed the letter "f" from the English language (Gunasekara, m. 1885-1891). A practical Sinhala alphabet of fifty characters has been introduced and the Sinhala alphabet has been compiled according to an international standard. During the primary education phase consisting of five years, examining how the physical and mental development of children affects the ability to write real letters, the physical and mental development of children takes place during this period. According to the views presented by the psychologist Jean Piajaya about the development of children's primary skills, the development of children's cognitive abilities in primary school age takes place under three main parts.

Therefore, children in the third, fourth and fifth grades should be given the opportunity to organize their imagination to work as much as possible by directing their thinking power through the mother tongue subject. Every language has a set of rules in the Buddhist universe and people are born with a set of rules for learning a language. Accordingly, children acquire language skills by recognizing sound words and grammar rules based on their experiences in the environment (Nomachomis Gee) By studying how children learn, psychologist Margaret Colling has identified four learning patterns. Among these, under the language-based learning





model, children learn using words and show skills in spelling. (Iekamge, S.1978) That is, during the primary school stage, the development of students' language skills occurs simultaneously with their physical and mental maturity. Therefore, in the classroom, it is necessary to find out whether the students have acquired the required scope in teaching language, speaking, reading, writing, and listening. When considering the psychological background of the development of handwriting skills, Jean Pia, a psychologist, has discussed in detail the development of children's language skills as an aspect of cognitive development.

According to the nature of children's language development, the Russian psychologist Formsky has shown that children's language learning is born with a biological process in the brain that is unique to it and takes place according to the acquisition of language skills. Victor's social learning theory emphasizes the relationship between children's thinking skills development and language development (Athukorala, D.R. 2006). Developmental psychologists divide a person's life into stages beginning with the end of early childhood when the child enters school. This is the era in which the higher talents of Buddhahood begin to develop. According to Piyajaya's stages of intelligence, this age is called the active stage. This stage is known as the primary yellow teacher should carefully identify the stages and needs of children's mental development and plan the learning and teaching process carefully by creating the school atmosphere they need. These psychological considerations should also be followed on the development of the child's behavioral skills (Athukorala DR 1987). Language as a medium of communication has a strong influence on personality. Language is necessary for a person to live in a society. Language knowledge is essential for learning everything. Everyone without a sensory impairment can learn to speak, write or read whatever language is used in the growing environment. Creative thinking develops by properly training language, the most powerful tool of thought. Language is also the reason why the world has developed so much. Every person has to face this development happening in the world, so the person can be properly educated only if everyone is given the ability to read and write. Because of this, local and foreign researches have been conducted on handwriting. According to William Gray, who has been doing international research on reading and writing for six years with the help of UNESCO, teaching children to write requires a well-designed program based on the students' developing needs and current textile skills and maturity level. (UNESCO,1950). Performance exercises that improve writing skills have been studied in several countries. Writing skills should be acquired as part of the natural process of child development (Frenet) Even the shape of expressive writing may affect the assessment of essay answers (Bring). Educational psychologists Tondayam Skinner Piyajaya have conducted many experiments on the practice of writing and correct writing.

In order to write correctly, children should be engaged in activities that involve large muscles and fine motor skills from an early age. (Athukorala, Dayarohana Athukorala, H.N. 2009) Through the research conducted by the National Institute of Education, it has been realized the weaknesses of writing incomplete letters, writing without spots, differences between the spots, writing in a disorderly manner, not making verses, writing dirty, the space between letters is more than the space between words. (Syllabus and Teacher's Guide Code Fifth Grade) To develop writing skills, the teacher should adopt appropriate humanistic programs to develop successful writing skills in the students. Writing is a different process than speaking According to Cheward's the development of child's writing is not a speaking event Writing is more difficult than speaking thus writing is an effective means of improving students' creative skills. (Athukorala, Dayarohana Athukorala, H.N. 1987) Pre-language skills should be developed in children before starting language learning with reading and writing (Siyambalagoda, W.Samadana Magazine) that is, auditory discrimination skills, visual discrimination skills, and psychomotor skills should be developed. Listening comprehension skills should be developed before teaching language to read and write. A psychomotor skill also has two parts, psychokinetic in reading and psychokinetic in writing.

When reading, the eye should be moved from left to right, before the reading begins, the preparation of the muscles necessary for writing should have developed handling skills, with the maturity of the child, and the readiness to write should be developed. (Methods of Teaching Primary Education) According to the father, the experiences of the child at a young age affect the development of language. Adverse emotions are detrimental to language development. Some alphabets are not appropriate to be taught how to begin writing. By the time children enter pre-school and enter primary school, the foundation of their language skills development is laid and by the time they enter primary school, children will have a vocabulary of at least five hundred words, Demonstrates skills such as being able to read one-word sentences (Kariawasam T.S) Pre-language skills, which are considered the basis for developing



language skills such as listening, speaking, reading and writing, develop with the development of the child during the developmental period. (Lekamge, S) This will allow understanding of the child's language skills at the time of entering the first grade. A period of five years has been set aside for primary education in the curriculum that has been operating since 1990. The awakening of this time is divided into three periods namely the first main stage, the second main stage and the third main stage.

In the first question, the demonstration of spatial ability related to pre-language skills, hand-eye coordination with activities involving large and small muscles is required today. After acquiring pre-writing skills, according to the syllabus, to demonstrate the technical skills of writing, writing with the shape and proper elements of a letter, writing on a ruler, writing for communication, a picture should be taken. (First Grade in Syllabus and Teacher Guide Code). Among the skills expected in the second grade are the skills related to handwriting, writing between rules with respect to size and shape with proper elements and shapes. Reference to writing for communicative purposes may refer to reference to creative writing (Second Grade Teacher's Guide). Among the skills expected to be achieved in the second main stage, the skills related to handwriting can include writing sentences creatively by keeping simple annotation rules. Some of the expected skills for third grade include demonstrating proficiency in writing skills, spelling words correctly, expressing ideas accurately, referencing creative writing, etc., and are related to handwriting. (Syllabus and Teacher's Guide Grade Three. Among the skills fourth graders are expected to acquire is the ability to write and write according to correct spelling, demonstrating handwriting-related skills.( Syllabus and Teacher's Guide Code Fourth Grade). Writing with correct spelling and correct pronunciation is among the skills expected in the third key stage, i.e. fifth grade. Create and write dialogues based on simple cases. Write carefully about the space between letters and words. It is expected to provide an understanding of the spelling of correct vakarata writing using all the rules correctly where applicable (Syllabus and Teacher's Guide Code Fifth Grade)

### 3. METHODOLOGY

#### 3.1. Research Objectives

1. A research to identify students with weak writing ability on the ruler according to the size and shape of handwriting in the fourth grade.
2. Design and Implement a remedial teaching program to address identified weaknesses.
3. Examining the development of students through applied therapeutic teaching.
4. Suggestion for development of writing skills in terms of proper size and shape of handwriting.

#### 3.2. Study Sample

After conducting a screening test for forty-fire grade four students of Polegoda maha Vidyalaya, ten people were selected of those students also participated as the study sample. Thus the study sample consists of twenty. Below the table 3.1 shows the study sample.

**Table 3.1: Study Sample**

Select Sample	Size
Male students	6
Female students	4
Parents	10

#### 3.3. Data Collection Equipment

Written test, observation papers, interviews, questionnaires, and written sources have been used as data collection tools for this research study. A screening test was conducted to select the research sample. Assessment tests were conducted at the end of each step during the treatment teaching program. An observation sheet on handwriting misbehavior was completed in the first step of the remedial teaching program. Again at the end of the treatment teaching program the same observation sheet was completed again. Direct observation were used during the treatment teaching program. An interview was conducted with the parents if the students



used in the sample and a questionnaire was given to them. For this study, Sinhala language syllabus from first grade to fifth grade and magazines like educational psychology and teacher, samodana, nuwana were used as written sources.

### 3.4. How the data was analyzed

For the research, scores obtained from forty five students were arranged in ascending order and a frequency distribution with class intervals was prepared through an exploratory test. The ten students who got the lowest marks were selected as the sample. In order to observe five weaknesses related to the research objectives, an observation sheet was completed and the percentage of students showing those weaknesses was calculated. Six evaluations were conducted during the treatment teaching program. The scores as a whole, the mode, median, mean and range and standard deviation, which are measures of dispersion, were calculated. The data collection and analysis for the research was done using the aforementioned statistical data analysis methods.

## 4. DATA PRESENTATION ANALYSIS AND INTERPRETATION.

The first objective of the research conducted under the title of avoiding the weaknesses that can be seen in writing the handwriting of the fourth grade students according to the size and shape of the proper elements, was to conduct a detection test to identify the weak students in writing the handwriting of the fourth grade students according to the proper size and shape of the handwriting on the ruler. Forty-five students of both the middle grade classes participated in the discovery test. The scores obtained by those students at the end of the test are shown in Table 4.1 below.

**Table 4.1: Marks obtained by forty five students**

53	59	47	57	68	50	28	22	10
65	68	62	75	32	73	30	23	16
68	47	83	47	48	49	24	14	18
66	77	72	39	57	65	24	14	12
84	34	39	74	75	44	24	14	12

Table 4.2 shows that if the data set is arranged in the following manner in ascending order to prepare a frequency distribution by the points mentioned above, then the raw data set is arranged as a string of numbers.

**Table 4.2: Arranged according to ascending order**

10	14	24	32	47	50	62	68	75
12	16	24	34	47	53	65	68	75
12	18	24	39	47	57	65	72	77
14	22	28	39	48	57	66	73	83
14	23	30	44	49	59	68	74	84

Table 4.2 shows that if the data set is arranged in the following manner in ascending order to prepare a frequency distribution by the points mentioned above, then the raw data set is arranged as a string of numbers.

**Table 4.3: Frequency distribution for exposure testing**

marks	frequency
74-84	6
63-73	8
52-62	5
41-51	7
30-40	5
18-29	7
7-17	7





Forty-five grade four students have divided the marks obtained for the discovery test into seven class periods. The frequency column shows the number of students who have obtained marks belonging to a class period. When the distribution of these marks is observed, it appears that the lowest mark that the students have obtained is ten and the highest mark is 84. On the basis of this frequency distribution and on the basis of ascending distribution, the ten students who scored the minimum marks were selected as the study sample for this research.

Hereinafter, the ten lowest scoring students selected as A, B, C, D, E, F, G, H, I, J the sample will be named.

After taking into account the personal problems and needs of the students selected for the research, an observation paper was used to analyze their special problems in handwriting. In order to get information, the question papers related to a sample of the students were observed. The following are the weaknesses observed in relation.

- Handwriting without proper shape.
- Handwriting in different sizes.
- Handwriting is incomplete.
- Difficulty distinguishing letters ङ (Na), थ (Tha), क (Ka).
- Difficulty distinguishing letters म (Ma), व (Va), ब (Ba).

Table 4.4 shows the observation sheet prepared keeping in mind the above weaknesses

**Table 4.4: Observation sheet number one**

Students name	observed weaknesses				
	1	2	3	4	5
A	–	–	√	√	√
B	√	–	–	√	√
C	√	–	√	√	√
D	√	√	–	√	√
E	√	√	√	√	√
F	√	√	√	√	√
G	√	√	–	√	√
H	√	–	√	√	√
I	√	√	√	√	√
J	√	√	√	√	√

Table 4.5 shows the percentage of students showing the above weaknesses

**Table 4.5: Percentage of weaknesses**

Observed weaknesses	Percentage (%)
1	90
2	60
3	70
4	100
5	100



Thus, it is clear that most of the students do not have the ability to distinguish between the letters of the Sinhala alphabet that are written the same, and the weakness of writing handwriting without proper shape is also the same. Some of the general problems related to handwriting mentioned above could also be observed during the detection test, among them, not using the correct posture while sitting on the chair while holding the pencil and book, and not being able to control the hand while writing handwriting. After identifying the students who are weak in the ability to write on the ruler according to the size and shape of the handwriting through a discovery test, the second objective of the research was to design a remedial teaching program to overcome the identified weaknesses and after selecting the action sample and informing the parents, the remedial teaching program was used for an extra hour every day on school days. Was initiated. The treatment consisted of six program steps and phases related to those steps. At the end of the first step, an assessment was made by giving ten unbroken two-letter words. The evaluation points are shown in table 4.6 below:

Table 4.6: First evaluation marks

student name	marks
A	8
B	8
C	8
D	6
E	5
F	8
G	7
H	5
I	4
J	3

The evaluation points are shown by figure 4.1

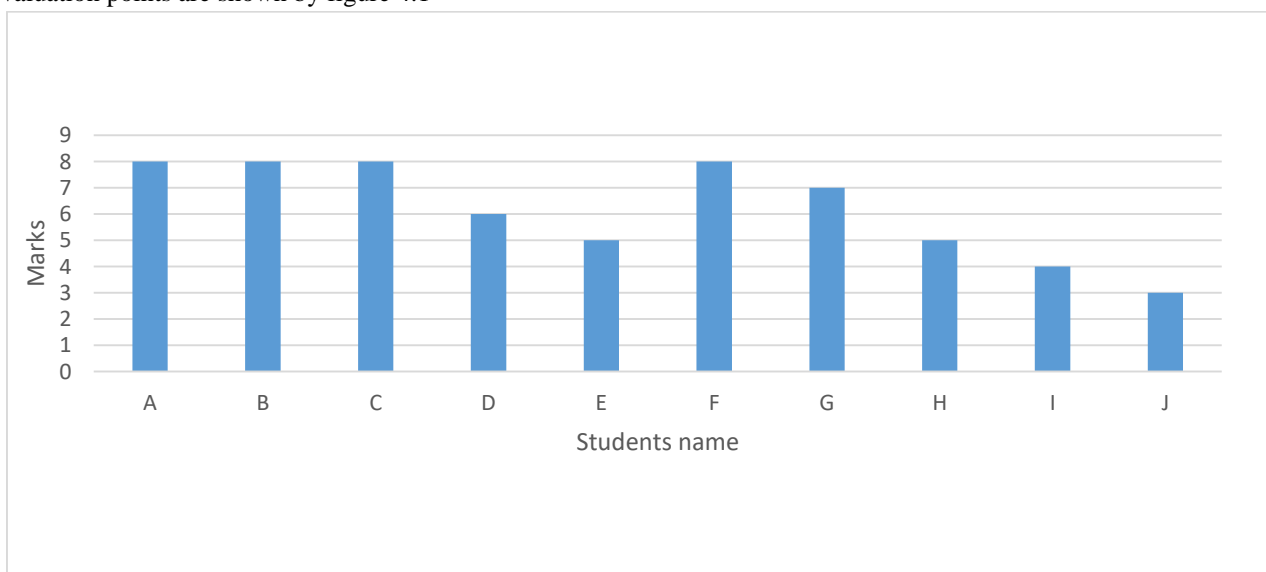


Figure 4.1: First evaluation

After the first evaluation, it was evident that some significant progress had been made in the students, after which the second step of the remedial teaching program was initiated. As the first stage, exercises were continuously given to look at the image and write



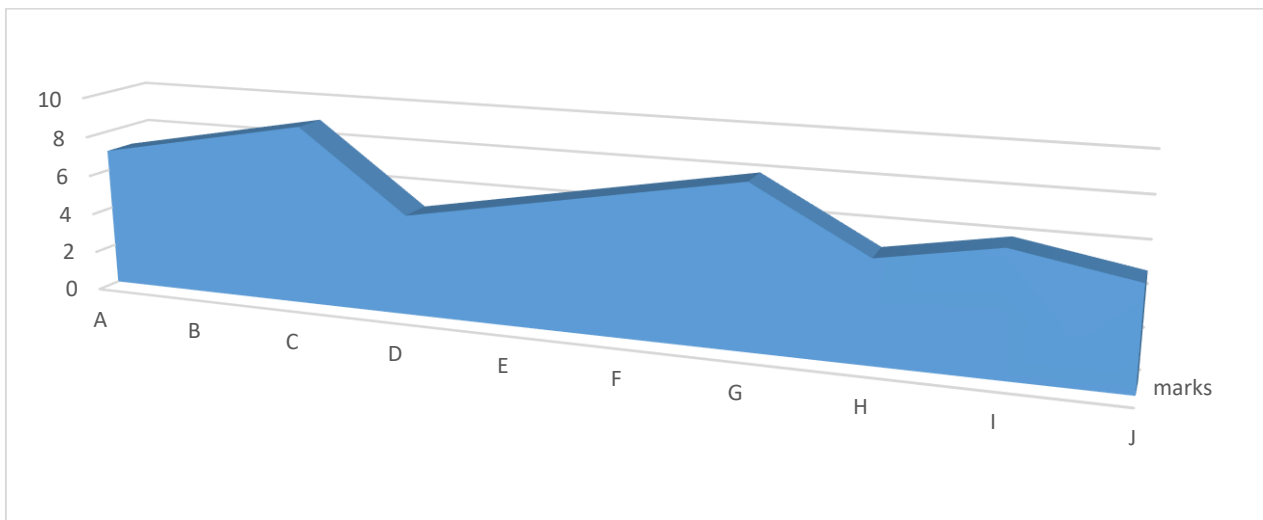
simple two-letter words with the image. Through this, after giving the habit of writing handwriting, the second evaluation was done by looking at and writing ten simple words.

Table 4.7 shows the evaluation scores at the end of the second treatment program

**Table 4.7: Second Evaluation Marks**

student name	marks
A	7
B	8
C	9
D	5
E	6
F	7
G	8
H	5
I	6
J	5

The second evaluation score is shown in figure 4.2



**Figure 4.2: Second evaluation**

Based on the success of the results of the second evaluation, the third step of the treatment program was implemented. After giving the exercises in the third step, the third assessment was done by giving ten simple sentences.

Table 4.8 shows the evaluation scores at the end of the third treatment program

**Table 4.8: Third evaluation scores**

student name	marks
A	7
B	7
C	8
D	7
E	6



F	6
G	7
H	6
I	5
J	5

The third evaluation score is shown in figure 4.3

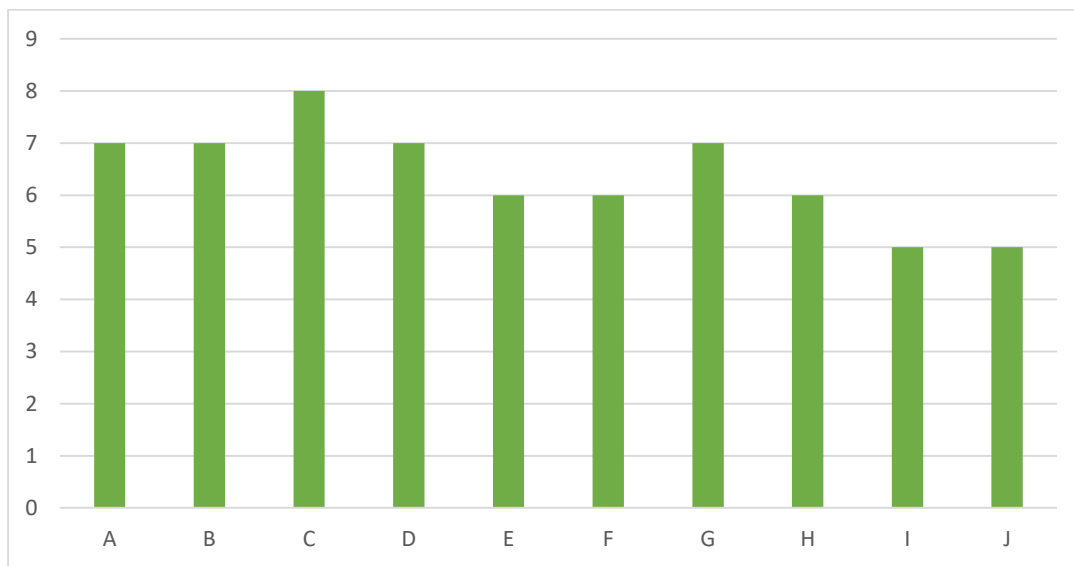


Figure 4.3: Third evaluation

At the end of the third evaluation, the fourth step was initiated. Through this step, it was possible to get used to writing the letters with the correct size and shape with all the folds. In making the exercises, the methods that can develop the handwriting skills identified in the literature investigation were always used. After these exercises, a re-assessment was done by giving ten sentences with the syllables.

Table 4.9 shows the scores of evaluation 4 after getting used to writing letters according to the size and shape of the characters with all the folds

Table 4.9: Fourth Evaluation score

student name	marks
A	9
B	8
C	7
D	5
E	6
F	9
G	7
H	8
I	7
J	6



The fourth evaluation score is shown in figure 4.4

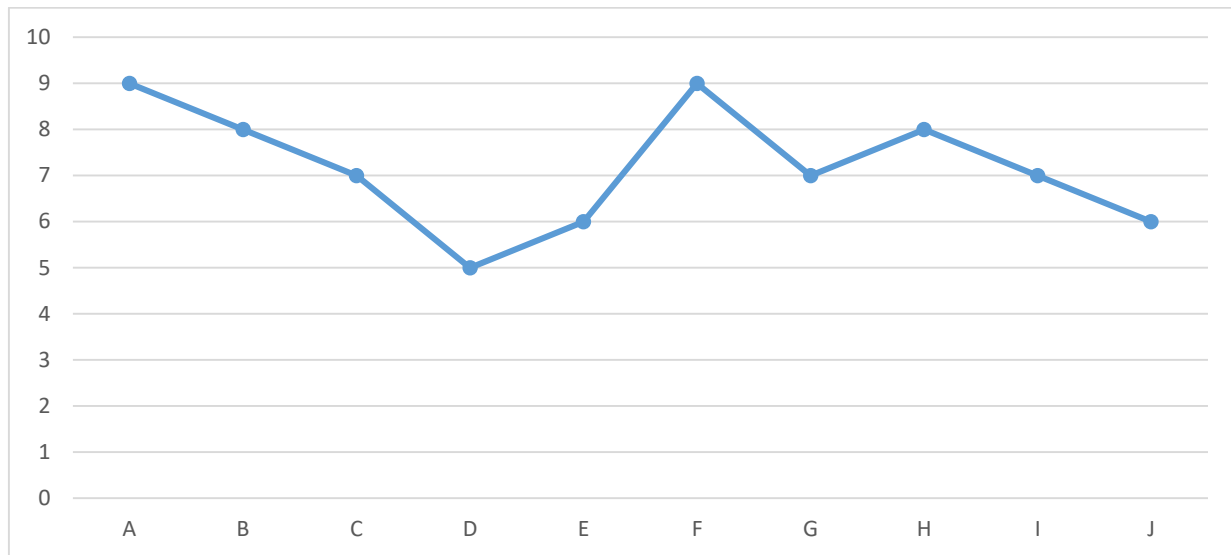


Figure 4.4: Fourth evaluation

At the end of the fourth evaluation mentioned above, it was confirmed that the students have developed the ability to write handwriting with the correct Angasa shape with different spots. Dunimi In this step, I used normal single-ruled books for handwriting. In the first stage, the letters of the Holy Sinhala alphabet were given to look and write with the proper Angasa shape. Then after giving a letter to look and write between two sentence rules with the prescribed Angasa shape, exercises were given to look and write between two sentences rules with the prescribed Angasa shape so that the size of a letter is three quarters of the size between the two rules. After these exercises, filling an application form for membership of the Children's Friends Association was given as the fifth assessment.

Table 4.10 shows the evaluation scores at the end of the fifth treatment program.

Table 4.10: Fifth evaluation scores

student name	marks
A	8
B	8
C	7
D	6
E	6
F	8
G	7
H	8
I	7
J	7

The fifth evaluation score is shown in figure 4.5



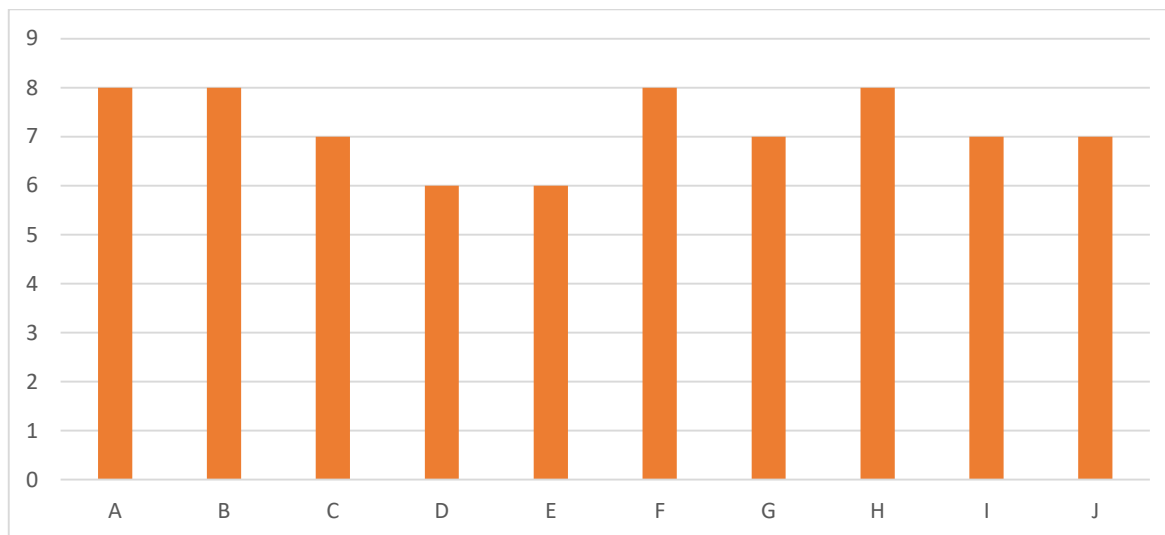


Figure 4.5: Fifth evaluation

By the end of the above fifth stage, the ability to write with the proper features and shape of the handwriting was largely developed. Therefore, in the sixth step, exercises were given to shape the four handwritings to the appropriate size of the grade, they were given to look and write between the two letters in stages, and in the second stage, exercises were given to look and write sentences so that the size of the letters is half of the size between the two rules. At the end of this step, ten sentences were created as the sixth evaluation. Was given to be.

Table 4.11 shows the evaluation scores at the end of the sixth treatment program.

Table 4.11: Sixth evaluation scores

student name	marks
A	9
B	8
C	9
D	7
E	7
F	9
G	7
H	8
I	7
J	7



The sixth evaluation score is shown in figure 4.6

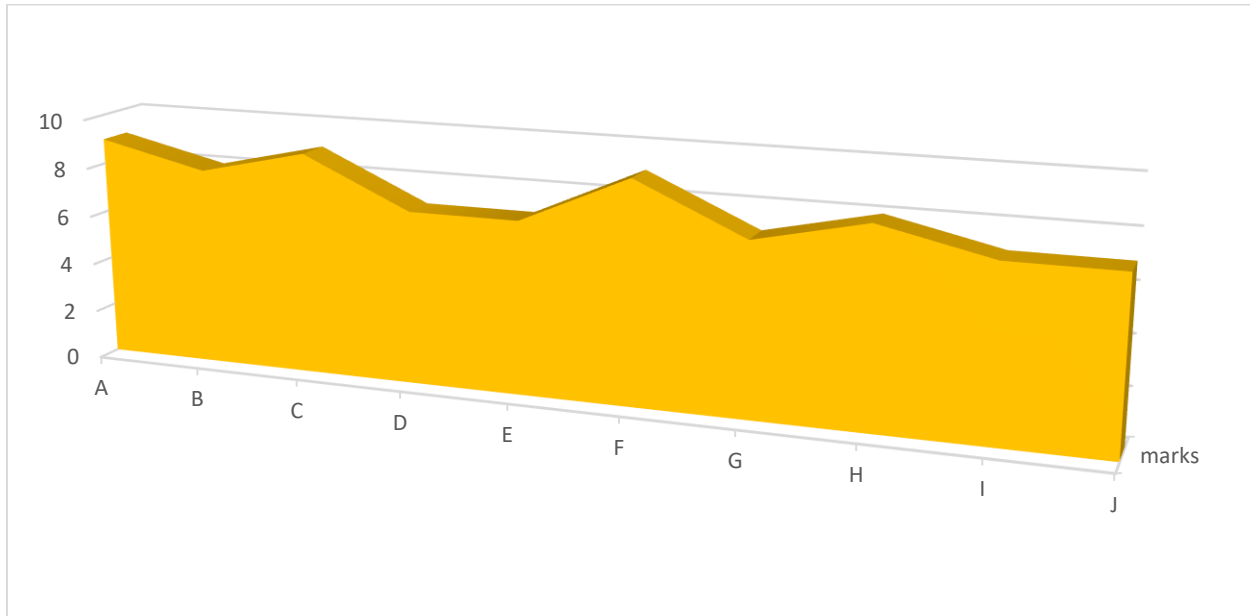


Figure 4.6: Sixth evaluation

At the end of the sixth evaluation, the treatment teaching program was completed and at the end of this step, the same question paper that was given for the exposure test was again given to the ten students selected for the sample. It can analyze the marks obtained by the students in the evaluation of the teaching program as follows. Development in students through remedial teaching program. The summary chart of the marks obtained by the ten students for all the six evaluations is shown in table four and twelve.

Table 4.12: Summary at the end of the six evaluations

students name	1	2	3	4	5	6
A	8	7	7	9	8	9
B	8	8	7	8	8	8
C	8	9	8	7	7	9
D	6	5	7	5	6	7
E	5	6	6	6	6	7
F	8	7	6	9	8	9
G	7	8	7	7	7	8
H	5	5	6	8	8	7
I	4	6	5	7	7	8
J	3	5	5	6	7	7



According to the above four-to-twelve table, it is clear that the students have made progress at the end of the six assessments. All ten students in the sample scored higher in the sixth assessment compared to the first assessment. It is clear that the student has made progress in handwriting at the end of the six assessments. Student B has maintained the same level in all six assessments. C students have made progress in handwriting at the end of the therapeutic teaching program. Student D also made some progress at the end of the remedial teaching program. E Student has achieved a mid-level mark for the final assessment and has made some progress with that level changing slightly up to the final assessment. Student F has achieved success through the treatment program with significantly higher scores on all six assessments. Student G has achieved average marks in all four terms and has developed handwriting through this student therapy program. Student H has achieved intermediate scores in both terms and this student has also developed handwriting. Although student I obtained a lower level of marks for the first assessment, with the gradual increase in the number of marks obtained, handwriting has developed. The student obtained a minimum number of marks for the first evaluation and gradually increased the amount of marks. Through this, it is clear that handwriting is at a weak level and has developed later.

Table 4.13 shows the values obtained when measures of central tendency were calculated for the six evaluations.

**Table 4.13: Measures of central tendency for evaluations**

Exercises	1	2	3	4	5	6
Median	6.2	6.6	6.4	7.2	7.2	7.9
Mode	8	5	7	7	7.8	7
Moderate	6.5	6.5	6.5	7	7	8

Since the first evaluation, the value obtained for the median has gradually increased. Looking at the values obtained for the mode, we can see the highest number of points obtained in each evaluation. Looking at the values obtained for the median, the values obtained for the first three evaluations are the same and the values obtained for the other evaluations are increased.

Table 4.14 shows the values obtained when the measures of dispersion are calculated for the evaluations.

**Table 4.14: Values obtained when measurements are calculated on scatters for evaluation**

Exercises	1	2	3	4	5	6
Range	6	5	4	5	3	3
Standard Deviation	5.8	6.24	6.06	6.81	6.82	7.48

After analyzing and interpreting the scores obtained by the students for the six assessments conducted during the remedial teaching program, the scores obtained by the students were considered for the final test.

The marks obtained for the final examination are shown in Table 4.15 below.

**Table 4.15: Marks obtained for the final test**

student name	marks
A	88
B	85
C	90
D	72
E	75
F	83



G	82
H	78
I	66
J	57

4.17 The marks obtained by the students for the final examination are shown below in the figure

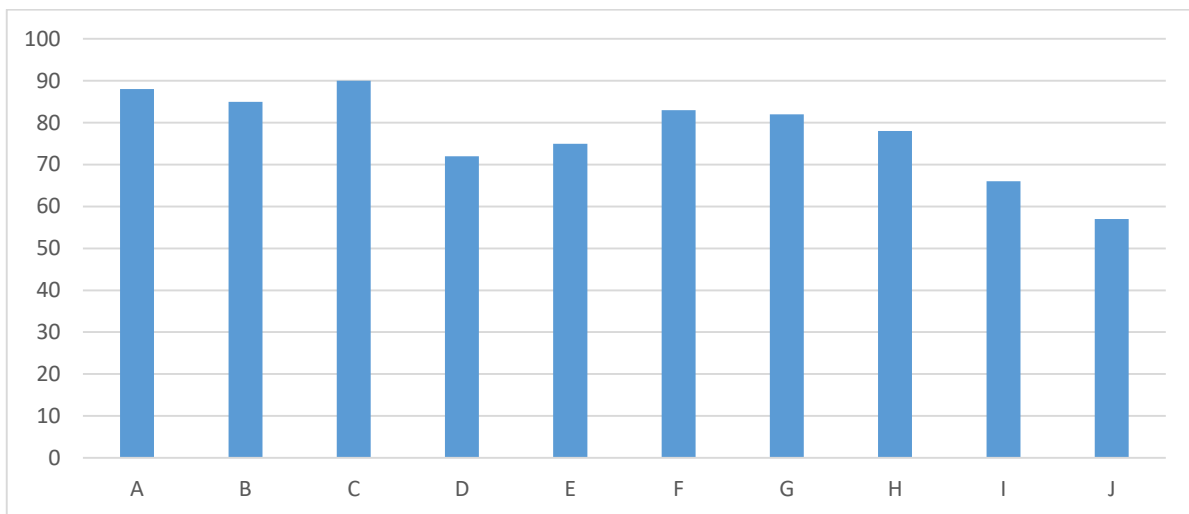


Figure 4.17: Marks obtained for the final test

After the final evaluation, the first observation sheet was completed again. Table 4.16 shows the values obtained in the second observation sheet.

Table 4.16: Observation Paper Number Two

Students name	observed weaknesses				
	1	2	3	4	5
A	-	-	-	-	-
B	-	-	-	-	-
C	-	-	-	-	-
D	-	-	-	√	-
E	-	-	-	-	√
F	-	-	-	-	-
G	-	-	-	-	-
H	-	-	-	-	-
I	-	√	-	√	√
J	√	√	-	√	√



The percentage of students showing weakness is shown in Table 4.17 below

**Table 4.17: Percentage of students showing weakness**

Observed weaknesses	Percentage (%)
1	10
2	20
3	0
4	30
5	30

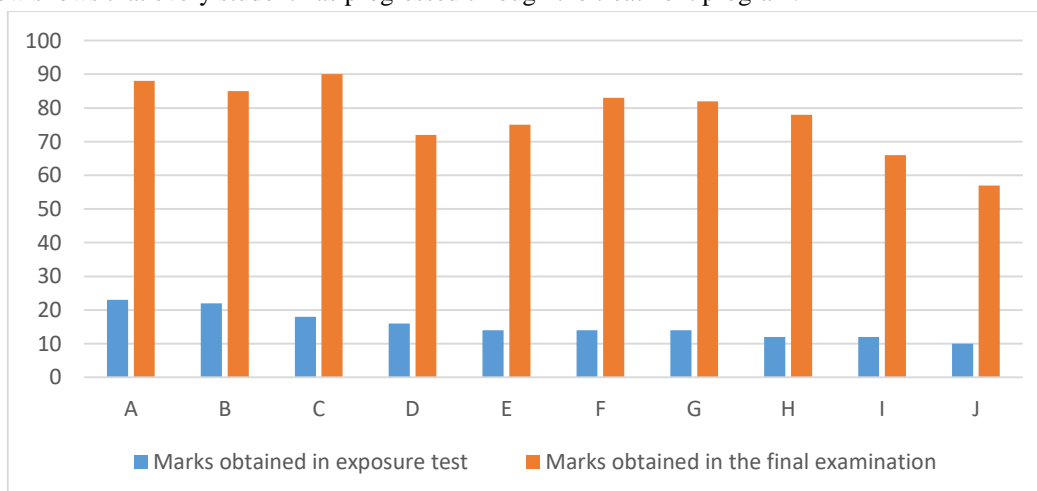
Table 4.18 below shows the marks obtained by the ten students selected as the sample for the exposure test and the marks obtained by those ten students in the final test.

**Table 4.18: Scores obtained for the two experiments**

students name	Marks obtained in exposure test	Marks obtained in the final examination
A	23	88
B	22	85
C	18	90
D	16	72
E	14	75
F	14	83
G	14	82
H	12	78
I	12	66
J	10	57

Observing the above table, it is clear that every student scored more marks in the final test than in the exposure test. That is, every student has made progress through the treatment program and every student has been able to develop handwriting according to the size and shape of the prescribed elements.

Figure 4.18 below shows that every student has progressed through the treatment program.



**Figure 4.18: Comparison of scores obtained for the two experiments**





A comparison of measures of central tendency for the two experiments is shown below in Table 4.19

**Table 4.19: Comparing the Two Studies (Measures of Central Tendency)**

	Exposure test	Final test
Median	15.5	77.6
Mode	14	–
Moderate	14	80

Table 4.20 shows below the values obtained when the measures of dispersion are calculated to compare the two tests.

**Table 4.20: A comparison of the two studies measures of dispersion**

	Exposure test	Final test
Range	14	34
Standard Deviation	4.08	9.81

As per the measurements calculated above, it is clear that the dispersion of the marks obtained in the final test is more than the marks obtained in the exposure test. That is, every student has been able to get more marks in the final test than in the exposure test. The data collected by completing the two observation sheets before and after the treatment teaching program are summarized in Table 4.21 below.

**Table 4.21: Comparison of Observation Papers**

Observational Weaknesses	First observation paper	Second observation paper
1	90%	10%
2	60%	20%
3	70%	0%
4	100%	39%
5	100%	39%

According to the above note, in the second observation paper, the observed weaknesses of the students have decreased, writing handwriting without proper shape by 80%, writing handwriting in different sizes by 40%, handwriting incompletely and writing in parts by 70%, and difficulty distinguishing between 2, 3, 4, and letters by 70%. This shows the success of the remedial teaching program to overcome writing weaknesses according to the proper size and shape of handwriting.

## 5. CONCLUSIONS AND SUGGESTIONS

### 5.1. Conclusions

The main medium through which human-discovered knowledge is transmitted from generation to generation is the written system. The development of writing skills is an important cultural achievement in the formal education process. According to the treatment teaching program implemented under the research objectives based on this research which was launched under the title of overcoming the weaknesses seen in writing the proper size and shape of the handwriting of fourth grade students regarding handwriting which provides the basic basis for writing among the four language skills. Conclusions and suggestions related to the research have been presented.

There is a positive correlation between participation in remedial teaching notes and handwriting development, i.e. students with handwriting difficulties can be developed and freed from those weaknesses through proper guidance. Before going to higher grades, students who have difficulties in writing handwriting should be treated in the primary classes to get rid of those difficulties. It is easy for students with those difficulties to continue handwriting correctly. In the primary classes of the school, the development of skills related to handwriting of students should be a mandatory objective of the acquisition process. Writing, which is a more basic language skill than speaking and reading, is a psychological skill. For this, mental guidance is important, as well as the kinesthetic



skills of the hands and fingers. Hence handwriting skills acquisition activities and prewriting practice before starting handwriting. At the beginning of handwriting, free writing should be allowed in books without rules instead of books with rules. The teacher should take more time and dedication to give the habit of writing according to the size and shape of the handwriting in relation to the respective grades.

Before getting used to writing letters with squiggles, you should get used to writing sentences without squiggles and before getting used to writing squiggles, you should also get used to reading poems, etc. with squiggles. More time and commitment should be given to give a clear picture about the use of Pillam. For that, the following sequence can be followed.

- Writing simple letters
- Writing letters using a pen
- Writing letters using cursive
- Writing letters using long letters
- Writing letters using a mirror
- Writing letters using a mirror.
- Writing letters with a long mirror
- Writing letters with a papilla
- Writing letters with a long papilla
- Writing letters with a kombua
- Writing letters with a kombua and hulling

Letters with a uniform shape are easier to learn at once. It is not appropriate to teach the letters of the Sinhala alphabet in the same order. Handwriting needs interest as well as mental motivation, therefore students should be encouraged to write their own handwriting by writing their names on their favorite liquids, looking at writing and so on. At the initial stage of learning to write handwriting, the shape of the handwriting should not be criticized for its accuracy, etc., and corrections should be made by encouraging the students' abilities.

## 5.2. Suggestions

Conducting flipping exercises for students to develop basic hand skills to develop handwriting skills. To impart manual skills i.e. to develop and direct the fine muscles of the hands, giving students the opportunity to make komputus, flowers, nuts, amen, clay, slicing. To introduce students to the task of hand writing, the lines needed to get the shape of the letters, the pre-writing exercises, from simple to complex, are given to the student in the primary classes. Before learning to write handwriting, developing the child's speaking ability to use the language orally, i.e. giving the opportunity to speak frequently, encouraging asking questions, looking at pictures to describe and telling a story, etc. Recognizing distinctive differences in handwriting at the first key stage Provides visual discrimination skills needed to remember dissimilarities. At the beginning of hand writing, giving pencils, colored chalk, etc. to write easily and familiarizing the students with the way to hold the pencil and the correct way to sit and hold the paper while writing. Organize activities in the classroom to develop a love for handwriting and create motivation through praise and recognition. Demonstrating an example of large handwriting in the classroom and creating an environment in the classroom that motivates the child to engage in the task of writing Copy writing and letter writing contests organized in the classroom.

Provision of additional reading and writing books suitable for each age group and providing opportunities and incentives for the use of library books. Implementation of a treatment program in every class to pay more attention to students who have handwriting impairments in every class in every school. If the weakness in handwriting is seen even when the student reaches the secondary level from the primary class level, further intervention in the development of handwriting skills is carried out. 1st grade handwriting practice using very limited time not to tire the student focusing only on the shape of the letters in the initial writing practice. To accustom the students to write according to the shape, size and shape of handwriting, observation, guidance, corrections, suggestions, etc. The teacher considers it his responsibility. Advising parents to inquire about their children's educational activities, look into their needs, deal well with the environment and maintain a good relationship with the child.



### 5.3. Limitations of the study

While conducting the research, the following limitations were established keeping mind the conference and time of the study. Considering the practical issues only Polegoda maha Vidyalaya was selected for the study sample among the schools in the horana region. Only ten students who scored the minimum marks were selected through a discovery test conducted on forty five grade four students. Limiting the study sample to ten students and the parent sample to ten. To find out only about the weaknesses that can be seen in writing according to the size and shape of the letters and to plan and implement a treatment teaching program to avoid the weaknesses and present conclusions and suggestions to avoid weaknesses. Limited to statistical methods such as data analysis, data tabulation, data graphing, frequency distribution, measures of central tendency, measures of dispersion etc.

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