

THE EFFECT OF USING QALAMIY TOWARDS PENCIL GRIP AND HANDWRITING QUALITY OF YEAR 2 SPECIAL REMEDIAL PUPILS

^aMohd Fauzi Azraii
^bJames Geoffrey W. Molijoh

^cInstitut Pendidikan Guru Kampus Kent, Tuaran, Sabah, 89207 Malaysia.

^azied21@gmail.com
^bjamesmolijoh@yahoo.com

Abstract: *This qualitative study through observation using experimental method in a form of case study was carried out on three year 2 special remedial pupils who faced difficulty in writing and had low performance in academic. The pupils underwent pre test and post test by copying at near point a piece of simple sentence that contained four words and 20 letters. After the pre test, pupils used Qalamiy for five weeks to support the formation of their dynamic tripod pencil grip and later improve their hand writing. Handwriting assessment was done based on the procedure from the McMaster Handwriting Assessment Protocol 2nd Edition (2009). Comparison was made by looking at the type of pencil grip and quality of handwriting based on letter formation characteristics, frequency in erasing and rewriting the letters, balance and thickness of lines of letters, distance between words and between letters, letter size balance and correct spelling. Findings showed the use of Qalamiy could help formation of mature pencil grip and increased the quality of handwriting in terms of balancing the distance between letters as well as distance between words and also the size of the letters. The results of this study can give knowledge to teachers to focus on the aspect of pencil grip, assess the quality of handwriting and also implement research-based intervention as an option in addressing the issue of language literacy especially handwriting.*

Key words: *Pencil grip, Qalamiy, handwriting, intervention.*

INTRODUCTION

Pencil grip ability is important for a pupil to write. Premature pencil grip usually becomes a normal problem for children. Difficulty in pencil grip can affect the ability to write. Early writing is also the best assumption to children to form later reading ability (National Early Literacy Panel (NELP) (National Early Literacy Panel (NELP) 2008). PISA Report (Programme for International Student Assessment) 2012 shows the decrease of Malaysia achievement in literacy from 414 points in 2009 to 398 points in 2012.

Use of light adaptive tools is found to increase the ability to hold pencil (Lim Chen Yin, Mohd. Hanafi Mohd. Yasin & Mohd. Mokhtar Tahar. 2012). Writing skills in the early phase is the best sign to expect later reading skills (Cabell, S. Q., Tortorelli, L. S., & Gerde, H. K. 2013).

PROBLEM STATEMENT

Solving writing problem for children at an early phase is important for the occurrence in reading and later knowledge acquisition for the living quality of the person. Problem in hand writing can also increase the difference for children

to master higher skills like spelling and writing text (Sermin & Ann 2013). Abdul Rasid Jamian (2011) explained that writing problem is the incompetencies of eyes and hands coordination in writing. Improper way of holding pencil can cause failure in writing lines and accurate form. According to Yusof & Walter Alvin (2010), inadequate focus given by teachers towards the writing skill mechanism in school resulted in the hand writing that lacks quality and difficult to decipher or read.

Heidi Schwellnus, Heather Carnahan, Azadeh Kushki, Helene Polatajko, Cheryl Missiuna dan Tom Chau. (2013) said that pencil grip is normally classified based on position of the thumb, number of fingers holding the pencil and position of finger joints that is at a dynamic position grip. He added, the thumb and the pointer are placed parallel to each other and facing in the opposite location in holding pencil. Through observation conducted, it was found out that teachers rarely teach their pupils the correct way to hold writing tools while writing (Lim Chen Yin, Mohd. Hanafi Mohd. Yasin & Mohd. Mokhtar Tahar. 2012).

Purpose of Study

The purpose of this study is to see the types of pencil grips amongst special remedial pupil class in order to get hand writing feedback after intervention using a light adaptive tool Qalamiy. This paves more options to educators to plan effective remedial program in teaching and learning contexts of special remedial class in primary schools

Researcher Question

1. What is the form of pencil grip and special remedial pupils' hand writing quality before using Qalamiy?
2. What is the form of pencil grip and special remedial pupils' hand writing quality after using Qalamiy?

STUDY METHOD

This qualitative study based on observation uses experimental approach in form of case study. The implementation of this study involves baseline measurement, introduction of independent variable and remeasure reactions, then the independent variable is seperated and then baseline measurement is taken again (Sherri 2006). This method is assumed to be accurate because when independent variable give effect to changes to dependent variable, then it cn be said that the independent variable is the cause to changes in the dependant variable (Creswell 2005). In this study, the light adaptive tools, Qalamiy, and three special remedial pupils are the variables to be observed through pretest and posttest.

The implementation of this study is based on constructivist theory by Vygotsky. This theory involves active process whereby pupils construct their own understanding on certain subject as a result of their intercation with the environment (Noor Azliza & Lilia, 2012). The innate cognitive structure in pupils is used by the teacher to help pupil constuct concept or new knowledge based on two important concepts namely Zone of Proximal Development (ZPD) and scaffolding. In this context, the ability to solve problem on their own with the potential development level and support of instructional materials are used to the maximum temporary form for pupils to achieve their performance to the highest level. After they have constructed new concept, the teacher surrendered the responsibility developing performance to pupils and take away their help (*scaffolding*) given (Leong, 1998; Hammond & Gibbons, 2001). This concept gives achievement space based on Zone of Proximal Development and adaptation of instructional materials that forms dynamic tripod pencil grip and later increasae the quality of hand writing.

Sample selection is done through purposive sampling

because it quickens the getting of data through participants that are seen can give much information (Cavana et al., 2001). For the purpose of this research, the researchers chose all the three year 2 special remedial pupils of SK Kebangsaan Pekan Tuaran, Sabah. All the research participants are special remedial pupils that have undergone test yet have not succeeded to pass the construct one LINUS screening that is to identify and write consonant and vocal letters.

The instrument used by the researcher is based on the The Mc Master Handwriting Assessment Protocol Second Edition (2009) because the usage can identify the pencil grip posture and later on measure the writing product as needed by the researcher. The pencil grip posture observed is based on the order of posture development of pencil grip (Schneck & Henderson 1990) while hand writing is analysed based on characteristics of letter formation that are incorrect, dirty effect in the writing that are frequently erased, letter lines that are not even, writing pressure that are not balanced either all too dark or too bright, distance between letters and sentence that are not balanced and the size of letters that are not even. Other characteristics that are observed are spelling error and its frequencies.

The reseacher of Qalamiy selected because the design is suitable and forms a natural dynamic tripod grip while on use. The position of pencil is found to be stable when it si placed in the shaft provided. We have space fpr the thumb and pointer while the middle finger functions as complementary to the formation of tripod dynamic. The positions of these fingers should be correct to form the dynamic tripod grip. The participants grip are more stable because Qalamiy has design that fills the palm when in use besides small humbs that stimulate small muscles on the palm. The researcher sees that Qalamiy is a suitable tool and accurate to be used to achieve the objective of this study.

When the participants of this study copies those sentences, the researcher functions a nonparticipant observer whereby the data is collected without the researcher being intergral part of the study conducted (Cavana et al, 2001). The reseacher observed way of gripping the pencil and record the findings natularistically. Photos as to how the participants grip the pencil while writing are taken using Sony Xperia Z tablet with the capacity of Camera digital 8 megapixel.

The research participants copied from short distance (*near point copying*). The text copied are placed within the distance of 15 centimeter in front of the research participants. The text are then copied to the normal exercise book that they use in the classroom. The sentence that is copied is *Kakak petik bunga mawar* that contains four sentences and twenty words.

Findings of the study

The finding of this study is explained as that compare and

contrast important points on every item evaluated for each participant of the reseach (Cavana et al. 2001).

1. Types of Posture Pencil Grip of the Reseach Participants

The form of pencil grip of participants can be seen in thefollowing table:

Before using Qalamiy	After using Qalamiy
P1-Grip is not matured	P1-Dynamic Tripod Grip
P2-Dynamic Tripod Grip	P2- Dynamic Tripod Grip
P3- Grip is not matured	P3- Grip is not matured Resembles to grip of four finge (Schneck & Henderson, 1990) a almost alike dynamic quadrup matured (Schwellnus et al 2013)

2. Analysis of quality of writing of research participants

Analysis of hand writing quality was conducted based on the characteristics fixed shows the following findings:

- a. Formation of letter that is not accurate
 In the pre test, the formation of letters for P1 is accurate for all words that contained 20 letters except for the letter *k*. There are three *k* letters that were written in capital letters when it is in small letters. The height of letter *t* also not tall enough. For P2, there are formation error for all five letters of *a* in the phrases copied. Besides that, the formation of four *k* letters also found to be inaccurate because the height of the small letter *k* that are not tall enough. There are also formation error for the letter *g*. For P3, participant has produced formation of three small *k* letters that looked like capital letters. Weakness also been detected for the formation of *g* letter and the height of small *t* letter that are not tall enough.
 In the post test, letter formation shown by P1 still shows three small letters *k* being written in capital letters. The height of the letter *t* also not tall enough. For P2, the smal letter *a* still shows incorrect formation. Same with the letter *t* which has insufficient height. There are also the small letter *r* that are written in capital letters. As for P3, the participant has produced height formation of two *k* small letters and one *t* small letter that are not tall enough.
- b. Stains effect on writing that is frequently erased.
 Stain effect and writing that is erased repeatedly is also analysed. In the pretest, P1 shows two erasing effect on letter *a* and *p* while the erasing effect on letter *a* is not complete and caused stain effect. For P2, there is no erasing effect done and for P3 there is stain effect in the letters *b* and 'g' where there are repeated letter lines. In the post test, P1 wrote with no erasing effect and stain.
- c. Uneven letter lines
 The letter line is an important feature to be analysed. In the *pretest*, P1 wrote with letter line which is well and tidy. For P2, there are uneven letter lines on letters *k* and *b* respectively and for P3, there are five uneven letter lines on the letters *k*, *b* and *g*.
 In the post test, P1 wrote the letter lines evenly in all letters whereas for P2 there are few letter lines that are not even namely the letters *k*, *t*, *u* and *a*. For P3, few letter lines that are not even are the letters *k*, *p* and *b*.
- d. The pressure in writing is not balance (Too Bright or Thick)
 Pencil pressure when writing has to be balance and stable to produce writing darkness that are even. The unstable pressure caused handwriting that are too thick, bright or a mixture of between thick and bright. During pre test, P1 had produced handwriting which is overall had pencil pressure that was balance and stable except for letter *p*. P2 also produced hand writing that had balance pencil pressure whereas P3had few letters namely *k*, *b*, *g* and *a* being given too much pressure as compared to other letters.
 In the post test, P1 produced handwriting that had quite a balanced pencil pressure whereas P2 showed less balanced pencil pressure in the letters *k*, and *u*. As for P3, effect of overuse of pencil pressure was seen on letters *k*, *p* and *b*.
- e. Distance between letters and between words
 Consistent distant between letter and between words is a good characteristic in writing. Finding in the pre test shows that the handwriting of P1 produced distance

between letters that is too close that allowed touching or continuation of between letters. The researcher saw few letters that touched each other namely the letters *K* and *a* in the word *kakak*; *n*, *g* and *a* in the word *bunga* and *w* touched the letter *a* in the *mawar*. The distance between the words *petik* and *bunga* are also close to each other and not consistent with the distance between other words. For P2, the distance between letters is also not consistent where there are letters that touched each other namely the letters *m* and *a* in the word *mawar*. The distance between the letters in the word *mawar* are found to be very close as compared to the letters in the word *kakak*, *petik* and *bunga*. As a whole, the distance between letters are found to be quite loose and not consistent. For the distance between words, finding shows distance that is quite close to each other between words until it shows distance between words *petik* and *bunga* not far difference with the distance between the letters *i* and *k* in the words *petik*. In P3, the distance between letters are not consistent where distance between the letters in the words *kakak* and *petik* are found to be quite loose compared to distance between letters in the words *bunga* and *mawar*. The distance between words on the other hand are found to be quite balanced between all words.

In the post test, finding shows that P1 produced hand writing with distance between letters that are consistent. The same goes to distance between words. For P2, there is one situation that the letters touched each other namely the letters *g* and *a* in the word *bunga*. For other words, the distance between letters are found to be quite consistent and same goes to the distance between words. For P3, the participant produced handwriting with the distance between that are quite consistent. Nevertheless, distance between the words *kakak* and *petik* are found to be not consistent with distance between other words.

- f. Balance of letter size and spelling error and frequency
The characteristic letter size is also very important and assessed by the researcher. In the pre test, P1 had written the letter size that is not balanced where there are letters that are written big as compared to letters namely letters *m* and *k*. Imbalance also noticed in the words copied. For P2, every word also shows letter size that is not balanced whereas in P3 started to write with average letter size in the words *kakak* and *petik* but eventually became small as in the words *bunga* and *mawar*. This situation can be obviously seen.

In the post test, P1 wrote the letter size that are more balanced in every word. For P2, the letter size still shows imbalance in the words *kakak*, *petik* and *bunga* though quite balanced in the word *mawar*. P3 in the letter size still shows size that is not balanced in all words.

DISCUSSION

This study is aimed at looking at the posture of pencil grip and to assess the quality of the handwriting of the participants of the study. There are significant differences in the pencil grip postures and handwriting quality of the year 2 special remedial pupils after using Qalamiy as compared to before using Qalamiy. The use of Qalamiy in this study shows changes in the aspects of balance between the

distances between words. There are also formation of letters and thickness of letter lines that are obvious. The use of Qalamiy within the longer duration can increase the quality of handwriting of special remedial pupils.

The Star newspaper dated 13 December 2014 reported online in *Harian Metro* that Qalamiy could be a tool to hold pencil and was able to help pupils learned to write as early as two years old and designed to strengthen finger muscles. The statement below elaborated:

'Harian Metro reported that a training management company, IMTEQ Solution Sdn Bhd, had produced a pencil holder to help children learn how to write from as early as two years old. The invention, called Qalamiy, or pen in Arabic, is designed ergonomically to strengthen finger muscles. IMTEQ Solution executive director Dr Rosman

Iteng said Qalamiy was also suitable for adults who had suffered a mild stroke or were disabled, and found it difficult to write.'

Hence, Qalamiy is a light adaptive tool that can help in the formation of dynamic tripod pencil grip that stimulates finger muscles and this can increase handwriting quality of the special remedial pupils taking into consideration its usage in elevating the ability of the fine muscles as well as helping eyes and hands coordination. This corresponds with St. John (2013) which states that pupils who cannot write should be helped by addressing weak factor of muscles.

CONCLUSION

Qalamiy which is built of materials that is free from allergy effect and non-toxic is proven to help pupils who have difficulty in holding pencil. For the special remedial pupils, it is an important alternative to increase handwriting quality at the beginning stage of writing. The outcome of the special remedial pupils in literacy can be seen in the quality of their handwriting which gives direct effect on their ability to read. It is very important for teachers and parents to know that quality level of special remedial pupils can be helped to improve.

The outcome of this study had given the interpretation which concludes that Qalamiy being a light adaptive tool helps to hold pencil correctly most likely increases the quality of handwriting among special remedial pupils. Nevertheless further studies are needed to support the finding of this study and to ensure that Qalamiy can be a practical tool in helping to increase the quality of special remedial pupils.

REFERENCES

- Abdul Rasid Jamian.2011. Permasalahan Kemahiran Membaca dan Menulis Bahasa Melayu Murid-murid Sekolah Rendah di Luar Bandar. *Jurnal Pendidikan Bahasa Melayu*,1(1): 1-12
Cabell, S. Q., Tortorelli, L. S., & Gerde, H. K. (2013). How do I write? Scaffolding preschoolers' early

- writing skills. *The Reading Teacher*, 66(8), 650-659.
- Cavana, R., Delahaye, B. L., & Sekeran, U. 2001. *Applied business research: Qualitative and quantitative methods*. John Wiley & Sons Australia.
- Creswell J.W. 2005. *Educational Research, Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, Second Edition, Pearson Education, Inc., Upper Saddle River, New Jersey, hlm 283.
- Hammond, J., & Gibbons, P. 2001. What is scaffolding? *Teachers' voices 8: Explicitly supporting reading and writing in the classroom* 8.
- Heidi Schwellnus, Heather Carnahan, Azadeh Kushki, Helene Polatajko, Cheryl Missiuna dan Tom Chau. 2013. Writing Forces Associated With Four Pencil Grasp Patterns in Grade 4 Children. *American Journal of Occupational Therapy*, Vol. 67, 218-227.
- Heidi D Schwellnus. 2012. Pencil Grasp Pattern: How Critical is it to Functional Handwriting? Tesis Ph.D. University Of Toronto.
- Leong, D. J. 1998. Scaffolding emergent writing in the zone of proximal development. *Literacy* 3(2): 1.
- Lim Chen Yin, Mohd. Hanafi Mohd. Yasin & Mohd. Mokhtar Tahar. 2012 Genggaman pensel kanak-kanak bermasalah pembelajaran dalam meningkatkan kemahiran menulis. *Jurnal Pendidikan Bahasa Melayu (MyLEJ)* 2 (1): 65-77.
- National Early Literacy Panel. 2008. *Developing early literacy: Report of the National Early Literacy Panel*. Washington, DC: National Institute for Literacy
- Noor Azliza Che Mat & Lilia Halim. 2012. Reka bentuk dan keberkesanan pembelajaran berbantuan multimedia pendekatan konstruktivisme bagi sains KBSM. *Jurnal Teknologi* 36(1): 19-38.
- Schneck, C. M., & Henderson, A. 1990. Descriptive analysis of the developmental progression of grip position for pencil and crayon control in nondysfunctional children. *American Journal of Occupational Therapy* 44(10): 893-900.
- Sermin Tukul Kavak dan Ann Christen Aliasson 2013 Development of handwriting skill in children with unilateral cerebral palsy (CP). *Disability and Rehabilitation*, 2011; 33(21-22): 2084-2091
- Sherri L. Jackson 2006. *Research Methods and Statistics*, Second Edition, A Critical Thinking Approach, Thomson Wadsworth, Belmont, USA.
- St. John, S. 2013. Factoring in Fine Motor: How Improving Fine Motor Abilities Impacts Reading and Writing. *Illinois Reading Council Journal*, 41(4), 16-24.
- Yusop, B. H. M., & Walter Alvin, J. 2010. Disgrafia dan cara membantu: kajian kes ke atas murid program integrasi pendidikan khas. *Jurnal Penyelidikan Tindakan IPG KBL*(4): 1-22