

The Effect of Using Problem-Based Learning Approach on  
Developing EFL Writing Skills among Students with Learning  
Disabilities in Primary Stage

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## أثر استخدام مدخل التعلم القائم على المشكلة في تنمية مهارات الكتابة لدى الأطفال ذوي صعوبات التعلم بالمرحلة الابتدائية

مستخلص:

هدفت الدراسة إلى التحقق من فعالية برنامج قائم على مدخل التعلم القائم على المشكلات problem-based learning في تنمية مهارات الكتابة لدى الطلاب ذوي صعوبات التعلم بالمرحلة الابتدائية، واتبعت الباحثة المنهج التجريبي، حيث تكونت عينته من مجموعة تجريبية (30) طالباً من طلاب الصف الخامس الابتدائي، مُشخصين على اظن لديهم صعوبات في الكتابة باللغة الإنجليزية، تم عمل قياسين قبلي وبعدي على مقياس مهارات الكتابة، وأظهرت النتائج فعالية البرنامج في تنمية مهارات الكتابة اليدوية والتهجئة والتعبير الكتابي والكتابة كعملية والكتابة كمنتج والكتابة ككل، وتمت مناقشة النتائج، وتقديم بعض التوصيات والبحوث المقترحة في ختام الدراسة. كلمات مفتاحية: صعوبات الكتابة، التعلم النشط، المنهج التجريبي، النمذجة، التعزيز.

### **Abstract**

The study aimed to examine the effect of using Problem-based Learning (PBL) Approach on developing EFL writing skills among students with learning disabilities in the 5<sup>th</sup> year at the primary stage. The study begins with a review of literature and previous studies dealing with Problem-based Learning and writing skills. The researcher prepared a list of writing components as a guide for the design of the instruments. The researcher designed a pre/post writing test and a rubric for learners with writing disabilities. The researcher also designed the proposed program. Participants were a group of students with learning disabilities in writing (n= 30) to get involved in the program's activities. Participants were submitted to a pre and posttest. Then, the scores were analyzed. The results showed that PBL Approach was highly effective in developing target writing skills of the participants.

**Keywords:** Problem-based Learning, writing components, learning disabilities.

## Introduction

Writing skills are one of the main communications and expressing tools for students to evaluate their performance in a written context. Learners depend on writing skills in many of their life treatments, activities, and tests. Although teachers depend on writing skills to determine the students' level in acquiring knowledge through written expression. So, the researcher notes that it's necessary to enhance and develop students' writing skills.

Writing is a common mode of communicating and demonstrating knowledge (Rouhani, Nafchi, & Ziaee, 2016). Among the first things that children learn to write are the alphabet letters and their first names; they then use those letters to spell simple words and eventually string words together to form sentences (Puranik, et al., 2018).

Also, written expression is an essential skill the learner should have to actively function in today's society (Corkett & Benevides, 2016), the elements of written expression require a set of complicated abilities that go beyond the act of holding a pencil and putting words on paper and encompass the complex interaction among physical, cognitive, and sensory systems (Coffin, et al., 2016).

Mastering handwriting is also essential for children that it is important to try to find new methods for facilitating its learning and rehabilitation (Danna, & Velay, 2015).

Despite the importance of writing, some students have learning disabilities in writing, learning disabilities have spread to all levels of education. We can observe learning disabilities in Kindergarten (Gottfried, 2017); Primary school (Dennis, Sorrells & Falcomata, 2016, Ok & Bryant, 2016), Middle school and High school (Brown, & Cinamon, 2016), and in the university (Harkin, Doyle & Mc Guckin, 2015).

The act of writing presents difficulties for 10–30% of elementary school students (Rosenblum, Weiss & Parush, 2004). For many learners, especially those with a learning disability (LD), writing can be a source of frustration (Corkett & Benevides, 2016), also, many students with LD

experience difficulties mastering the process of writing (Graham, Harris, & Larsen, 2001).

There is a diverse social problem experienced by children, adolescents, and adults with learning disabilities (Wong & Donahue, 2002). Study findings by King'endo, & Nyaga (2015) reveals that 75 percent of teachers lack instructional materials that cater for learning disabilities (LD). Only 25 percent of teachers can identify cases of LD and give special attention. Lack of standardized tools for assessment at the EARC center may have led to poor identification and placement of LD. The researcher concluded that learning of the learners with dysgraphia (dysgraphia is a term used to refer to writing disabilities) is inadequate and this has been contributed by; lack of enough teachers trained in LD to identify learners with dysgraphia and apply appropriate teaching strategies, inadequate instructional materials that cater for LD and lack of standardized tools for assessment at the EARC center. The study recommends that the Ministry of Education should oversee special education training to all education officers and teachers.

Also, indicated that boys in primary schools had the highest percentage of poorly written work, eligible handwriting, and poor pencil control. Both boys and girls had an equal number in inconsistency in letter formation 121 and in messy written work. Girls with difficulties in inaccurate copying written work were more than boys. The results showed that all the head teachers interviewed agreed with the presence of learners with dysgraphia in their schools (King'endo, & Nyaga, 2015).

Students with specific learning disabilities (SLD) have disparate neuropsychological processing deficits that interfere with academic achievement in writing fluency, spelling, and/or written expression (WE). Although there are multiple potential causes of written expression learning disabilities, there is a paucity of research exploring this academic ability from a neuropsychological perspective (Fenwick, et al., 2016).

Because of the problems that learning disabilities may cause, and the negative effects on children writing, several studies had addressed writing disabilities. Kaldenberg, et al. (2016) had studied the common

characteristics of writing interventions for students with writing disabilities. Corkett & Benevides (2016) conducted a study on exploring the writing abilities of students with learning disabilities.

A lot of Educational treatments have appeared to help students with learning disabilities, as copy cover and compare (CCC) spelling intervention for an elementary student with learning disabilities (Breach, McLaughlin & Derby, 2016), morphemic vocabulary instruction on prefix vocabulary and sentence comprehension for middle school students with learning disabilities (Brown, Lignugaris-Kraft, & Forbush, 2016).

Other studies were interested in identifying and supporting EFL with learning disabilities (Burr, Haas, & Ferriere, 2015; Ferlis, & Xu, 2016), and also in teaching English as a foreign language to students with learning disabilities at the intermediate and advanced levels (El-Koumy, 2016).

Some of these studies tried to use a Problem- Based Learning approach (PBL) for students with learning disabilities, Stefanou, et al (2013) examined the relationships between contexts in which learning occurs and students' behaviors, cognitions and motivations. In this study, student self-regulated learning strategies in problem-based learning and project-based learning environments were examined to determine whether student self-regulation outcomes differed depending on the instructional design. The results have indicated a positive effect of using PBL.

Rosinski & Peeples (2012) examined how PBL activities in a first-year writing class and an upper-level professional writing and rhetoric class led students to develop rhetorical subjectivities. Agbor-Baiyee (2002) examined the design and implementation of a 15-week problem-based learning writing course for graduate students in medical science. Warren, Dondlinger, Barab (2008) examined whether game elements could be used along with Problem Based Learning (PBL) in a digital learning environment to improve student writing. The results also have indicated a positive effect of using PBL in writing development.

Problem Based Learning has been experimented as pedagogy in various disciplines and contexts around the world and recognized as effective teaching-learning method. Unlike many conventional methods, it

involves students for effective learning through discussing and finding solutions to authentic problems among themselves (Dastgeer, & Afzal, 2015).

Hence, the researcher was encouraged to investigate the effect of using problem-based learning approach on developing EFL writing abilities among students with learning disabilities in 5 primary grades.

### **Statement of the Problem:**

The problem of this study can be identified in the weakness of writing abilities among the 5<sup>th</sup> primary grade EFL students with writing disabilities (Dysgraphia). This requires appropriate strategies and suitable approaches to help them. The present study aims to use a problem-based learning approach to improve writing abilities for students with writing disabilities, through a training program.

### **Study Questions**

The present study attempted to answer the following main question:

What is the effect of applying Problem-based learning (PBL) on developing EFL writing abilities among students with learning disabilities in the primary stage?

So, the following sub questions would also be answered:

- 1-What are the features of the Students' learning disabilities?
- 2-What are the features of the students' writing skills?
- 3-How far can a program based on PBL affect the target students' writing skills?

### **Hypotheses of the Study**

The following hypotheses have been tested:

- There are no statistically significant differences between the mean scores obtained by the participants in the pre-test and those of the post-test with regard to Handwriting abilities.
- There are no statistically significant differences between the mean scores obtained by the participants in the pre-test and those of the post-test with regard to Mechanics and Spelling abilities.

- There are no statistically significant differences between the mean scores obtained by the participants in the pre-test and those of the post-test with regard to expressing ideas abilities.
- There are no statistically significant differences between the mean scores obtained by the participants in the pre-test and those of the post-test with regard to writing as a whole.
- There are no statistically significant differences between the mean scores obtained by the participants in the post-test and those after 6 weeks of ending the program with regard to writing as a whole.

#### **Delimitations of the study:**

This study was delimited to:

- A group of EFL students (n=30) with learning disabilities.
- Some writing components; namely, Handwriting, Mechanics and Spelling, expressing ideas, writing some simple products.

#### **Design of the study**

The researcher used the one group pretest-posttest design for the following reasons:

The researcher aimed to determine the status-quo of the participants concerning their ability to write correctly before being introduced to the proposed program. At the end of experimentation, the researcher wanted to measure the effect of using problem-based learning on developing the learners' writing ability and to compare the results gained by the pre/posttest.

#### **Instruments:**

- A pre/post writing skills test

#### **Aim**

The researcher prepared this test to assess EFL writing disable learners' writing. Using this test, the researcher could measure how much the students had developed throughout the experimentation. They were given the test both before and after the experimentation.

### Description

The test consists of 3 parts:

- Look and answer the questions.
- Look at the picture and write three sentences.
- Punctuate the following.

### Piloting the test

The test was piloted on a group of EFL writing disable learners (n=30) at the fifth grade of Al-Mouz Private School. The test was piloted for the following reasons:

#### - Determining the test time

The time of the test was calculated after piloting the test. This was done by calculating the time that each learner took to answer the test, and then calculating the average time for the whole group. Thus, the average time of the test was found to be 12 minutes.

#### - Calculating internal consistency

To ascertain the internal consistency of the writing abilities which were measured through the test, Pearson's correlation coefficients between each part and the total score of the test was calculated after subtracting the targeted writing ability from the total score. The following table (1) shows Pearson's correlation coefficients:

Table 1

Pearson's correlation coefficients between the degree of each component and the total test score (Corrected Item-Total Correlation)

Writing test component	Its correlation coefficient to the total score
Look and answer the questions	0.69**
Look at the picture and write	0.72**
Punctuate the following	0.76**

\*\*Level of significance 0.1



Table 2 indicates that all the components are statistically significant. This indicates the internal consistency of the test.

### **Checking the suitability of the test questions to the target students:**

The questions were all introduced to the students to check their level of difficulty and the learner's ability to understand them.

### **Test reliability**

The test reliability was examined by the following methods:

#### **Alpha coefficient Cronbach**

Alpha- Cronbach was found to be 0.884 and this indicated that the test had a high degree of reliability.

#### **The split-to-halves method:**

The correlation coefficient was calculated between the two halves of the test and found to be 0.74, and the correlation coefficient after correction of the fragmentation effect of the "Spearman-Brown" equation was 0.85, which indicates the accuracy and reliability of the test.

#### **Interrater reliability**

The correlation coefficient between the two correction scores (by another teacher<sup>1</sup>) was calculated and the correlation coefficient was 0.94. This is a high value indicating a very strong correlation, which indicated that the test had a high degree of reliability.

#### **Test validity**

Test validity was verified through submitting the test in its initial form to a group of EFL specialized jury members. The jury members were requested to determine its appropriateness and suitability for the targeted students. Some amendments were made to the items of the test based on the comments and suggestions of the jury members. A number of sentences "three sentences" in the second part "Look at the picture and write three sentences" was seen as inappropriate, according to some jury members

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<sup>1</sup> Nadia Adam, English teacher at Al-Moez Privet School.

they suggested that they should be 5 sentences at least; to examine all as possible writing abilities.

### • The writing skills rubric

The researcher designed a rubric in order to assess the learners' writing abilities in the pre/posttest.

#### The structure of the rubric

Deciding the final form of the list of writing abilities, the researcher developed the rubric that consisted of five writing abilities. Each of the five components was rated according to a rating scale ranging from 1 to 5, as indicated below:

- Excellent: 5
- Proficient: 4
- Approaching: 3
- Limited: 2
- Below: 1

#### Validity

The validity of the rubric was verified through asking the advice of some jury members. All their insightful comments and modifications were presented in the final form of the rubric (Appendix D). For example, in the initial form, the rating scale started the other way round; from 1 to 4.

Writing test component	Its correlation coefficient to the total score
Expressing ideas	0.79**
Mechanics and spelling	0.74**
Handwriting	0.78**

\*\*Level of significance 0.1

Table 2 indicates that all the components are statistically significant. This indicates the internal consistency of the rubric. In addition, the

researcher had to design a program based on PBL Approach to help the disable learners develop the writing skills.

## • The Program

### Aim

This program aimed at developing EFL writing abilities for 5 primary students.

### Performance objectives of the program

By the end of this program, the students were expected to:

#### (A) Handwriting:

- To Use left to right directionality
- To Use return sweeping (return to the left for the next line)
- To use appropriate spacing between letters
- To use appropriate spacing between words

#### (B) Mechanics and spelling:

- To use sound/symbol relationship for writing words
- To use basic punctuation
- To use capitalization
- To spell words correctly
- To use resources to spell words

#### (C) Expressing ideas:

- To use simple sentences to convey ideas.
- To use words appropriately to write sentences.
- To use short forms of phrases.
- To use correct regular singular/ plural nouns in appropriate simple written context
- To use correct prepositions in appropriate simple written context
- To answer Yes/No questions
- To answer Wh-questions
- To write simple description of actions/objects/ weather
- Identifying objects.

**(D) Writing as a process (prewriting, drafting, revising, editing, publishing).**

-To use a basic writing process to develop writing:

→Prewriting

→Drafting

→Revising

→Editing

→Publishing

**(E) Writing as a product (resulting in word samples).**

-To express personal information

-To express Dates and Times.

- To express his/herself.

-To write a grocery list.

**Content of the program**

Throughout the program, the students were given several sessions in order to develop their writing abilities. It consisted of 37 sessions. The first session of the program was an opening and orientation session during which the researcher tried to introduce the outline of the whole program to the students. By the end of this session, the students were supposed to have an overall idea about the program. Concerning the other sessions, different activities were introduced to help Ss with writing disabilities to develop their writing skills. The students' interests and needs were considered while choosing the activities.

**Duration of the program**

The program lasted for three months. The researcher met the students three times a week, while each session lasted for an hour and a half. The total number of hours for teaching the program was 63 hours.

**Learning and teaching strategies/techniques**

Problem-based learning was the main strategy that was used to achieve the target of the program and to facilitate the researcher's mission in creating an active learning environment. It was helpful as it enabled the learners to play an active role in the learning process. They listened, searched, reflected and discussed. They were engaged in problem-solving

and collaborative activities. They were divided into several groups to finish certain tasks. They cooperated to achieve predetermined goals. Role-playing activities were included in the program. Students took on different roles in a given situation. They tried to act these roles efficiently.

The researcher tried to put every student in a problem that he/she faced and form a writing disability for the student, while other learners were trying to observe and write down the solutions that their classmates thought of and tried to solve the writing disability. Moreover, the learners were asked to find different problems in each session. Learners were also involved in think-pair-share activities. They thought of a problem or writing disability individually, shared their thoughts with their partners and finally shared their ideas with the whole class.

### **Assessment**

The researcher used a test and a rubric to assess the learners' progress throughout the program. The rubric consisted of five writing abilities namely:

Handwriting, Mechanics and spelling, expressing ideas, writing as a process (prewriting, drafting, revising, editing, publishing), Writing as a product (resulting in word samples).

To assess the learners' progress, the researcher designed a pre/posttest. The test was administered on the learners on the first and last session. The researcher, then, compared the results of the pre and post writing abilities test to measure the learners' progress throughout the program.

### **Results of the Study**

The results of the study were the following

There are statistically significant differences at the 0.01 level between the mean scores obtained by the participants in the pre-test and those of the post-test with regard to Handwriting abilities in favor of the post-test scores.

There are no statistically significant differences between the mean scores obtained by the participants in the pre-test and those of the post-test in using Mechanics and spelling abilities in favor of the post-test scores.

There are statistically significant differences at the 0.01 level between the mean scores obtained by participants in the pre-test and those of the post-test in Expressing ideas abilities in favor of the post-test scores.

There are statistically significant differences at the 0.01 level between the mean scores obtained by participants in the pre-test and those of the post-test in using Writing as a process ability in favor of the post-test scores.

There are statistically significant differences at the 0.01 level between the mean scores obtained by participants in the pre-test and those of the post-test in using Writing as a product ability in favor of the post-test scores.

There are statistically significant differences at the 0.01 level between the mean scores obtained by participants in the pre-test and those of the post-test in using writing as a whole ability in favor of the post-test scores.

There are no statistically significant differences between the mean scores obtained by participants in the post-test and those after 6 weeks of ending the program in using writing as a whole ability.

### **Conclusions:**

It can be concluded that there are statistically significant differences between the mean scores of the study participants on the pre and post writing skills test regarding the development of the “writing skills” in favor of the posttest scores. This indicates that using the PBL is highly effective in developing “writing skills” among students with learning disabilities in the primary stage .

### **Recommendations**

Based on the reached results, the study recommends the following:

- More opportunities to practice writing skills should be provided to the students in the primary stage .
- Students should be encouraged to practice more PBL activities .

- Teachers should pay much attention to writing skills as an integral language component that students themselves seek to develop .

### **Suggestions for Further Research**

Researchers may consider the following suggestions to investigate the adequacy of utilizing PBL for further research :

- Exploring the effect of utilizing PBL on diverse learning outcomes .
- Choosing different students from different educational levels and applying the same current study on them .
- Developing the students writing skills using different activities.

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