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Dyslexia and English: Degree of Difficulties Faced by the Students with Dyslexia while Learning English

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ABSTRACT

This research aims to investigate the hypothesis that students diagnosed with dyslexia face a greater amount of difficulty when they attempt to learn a foreign language and especially English. On a survey carried out in the form of a questionnaire, two groups of students completed the same questionnaire regarding their difficulty to learn the basic skills such as reading, writing, listening, and speaking. The questions mostly focused on the difficulty they may face in spelling, reading, and listening which are the main aspects of the language dyslexic students' score lower than students without dyslexia. The answers were evaluated with the use of the statistical method of t-test. The findings of the survey displayed a great difference on the score chosen by the two teams, which indicates the greater degree of difficulty the dyslexic students face confirming the original hypothesis.

Keywords: Survey, Dyslexic and Non-Dyslexic Students, T-Test, Language Skills, English Language Learning

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1. Introduction

Learning difficulties have gained a great popularity the last years not only because of the innovative pedagogical methods but also of the raised awareness among the societies. Dyslexia, in particular, is one of the most serious learning difficulty that affects the life of million children and adults around the world.

Dyslexia is a specific learning disability that is neurological in origin. The person diagnosed with dyslexia face difficulties with accurate and fluent word recognition. What is more, poor spelling is a

very common result of the deficit in the phonological development. Finally, reading comprehension as well as reading ability in general can be influenced and be in a lower level than expected. However, dyslexia also affects the psychology of those experiencing it, leading to low self-esteem, high levels of stress, and even social exclusion.

As students diagnosed with dyslexia face difficulties in learning their mother tongue, having to learn how to express themselves in a foreign language is a demanding and challenging procedure which demands more effort than the other

students. The degree of difficulty these students face, I attempt to exploit with the questionnaire I created. My hypotheses are the following:

- a. If students are diagnosed with dyslexia, they face more difficulties in learning English
- b. If students are not diagnosed with dyslexia, they face less difficulties in learning English

2. Literature Review:

Dyslexia is a life-long condition (Nijakowska, 2010) that can affect many students. This reading disorder can sometimes be confused with laziness, and children are frequently blamed for their difficulties. The first identification of dyslexia is usually attributed to Adolph Kussmaul, who in 1878 coined the term *word blindness* to describe the difficulties some patients encountered while reading common words in the wrong order (Kormos and Smith, 2012: 6). Consequently, in 1887 Rudolf Berlin used for the first time the word *dyslexia*, which stood for word blindness.

Interest in research on Dyslexia has been constantly increasing. The research on dyslexia involves many different disciplines: medicine, psychology, pedagogy each having a different explanation for its causes, a different purpose for devising a definition and they address different audiences (Miles 1995; Sinanidou 1989). Scholars of of varied specializations such as child psychologists, speech therapists, psychologists, educationalists deal with dyslexia and each of them uses a different name (Sinanidou 1989), e.g. ‘specific learning difficulties’ and ‘at risk’ children (Miles 1995) in education. Peer and Reid (2003) argue that not all children with dyslexia have a difficulty with reading, memory and coordination as dyslexia relates to a broad range of difficulties associated with learning. Also, the difficulties of every

person with dyslexia depend on his/her age and the developmental stage s/he is and they change with the passage of time (Anastasiou 1998).

The difficulties of students with dyslexia are more evident in school-age children because their academic success is very important to themselves, their parents and teachers and they are constantly reminded of their weak reading and spelling skills (Boetsch et al 1996).

3. The Present Study

This section presents the findings of my research

3.1. Participants

The questionnaire was distributed to 14 Greek speaking students, male and female, aged 10-16 years old. Participants were separated into two groups; the dyslexic and the non-dyslexic. The males recognized with dyslexia exceed in number to females. For this reason, it was attempted to equalize this by using more females for the non-dyslexic group.

All participants had attended at least 4 years of English instruction in order to have a basic level of knowledge of the English language. The dyslexic students were selected by the diagnosis they had provided to school they are attending.

3.2. Methodology

For the investigation of my research question as to what extend students face difficulties in learning English, I formed a questionnaire. This questionnaire is separated in two sections.

The first section included general questions regarding the name, age, sex, the class each student attends, if they had studied English, how many years they had, and if they had finished their English studies. One last question separated in 3 sub questions was about their knowledge of dyslexia; if they knew what dyslexia is, if they knew somebody with dyslexia, and,



finally, if they had been diagnosed with dyslexia. Some of the questions were “Yes/No” questions and some were open questions.

The second section included 13 specific questions about dyslexia and English. The students had to circle numbers 1 to 5 in a Likert scale that represented their preference. The numbers represented one of the following typification;

- 1 meaning “not at all”
- 2 meaning “a little”
- 3 meaning “enough”
- 4 meaning “much”
- 5 meaning “very much”

The questions included in this section were the following;

1. Do you like English?
2. Is it easy to study your everyday lesson in English?
3. Is it easy to study the dictation in English?
4. Do you understand the instructions given by your teacher in English?
5. Is it easy to read in English?
6. Can you follow the teacher’s instruction to complete a task in English?
7. Do you understand listening exercises in English?
8. Is it easy to remember the words you have learnt?
9. Do you understand the grammar rules in English (e.g. how to form Present Continuous)?
10. Is it easy to follow the correct format when writing an essay in English (e.g. introduction, main body, conclusion)?
11. Is it pleasant to attend English lessons?
12. Is the time given by the English teacher enough to complete a task?
13. Is it easy to express yourself orally in English?

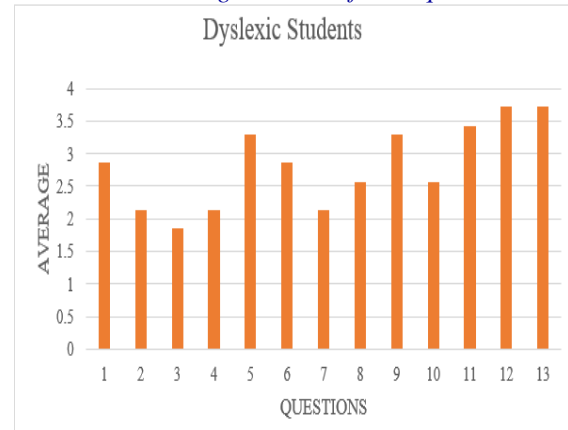
4. Results

All participants answered all the questions both in the first and the second section. They were separated into two

groups, dyslexic and non-dyslexic, and they were given to complete the questionnaire at the same time.

According to the hypothesis the students diagnosed with dyslexia face more difficulties in learning English in comparison to students who had not been diagnosed. Dyslexic students’ answers mostly fluctuated from 1 to 3. Numbers 4 and 5 were seldom chosen which indicated their great difficulty in understanding and learning English. The average number of each question is showed in table 1.

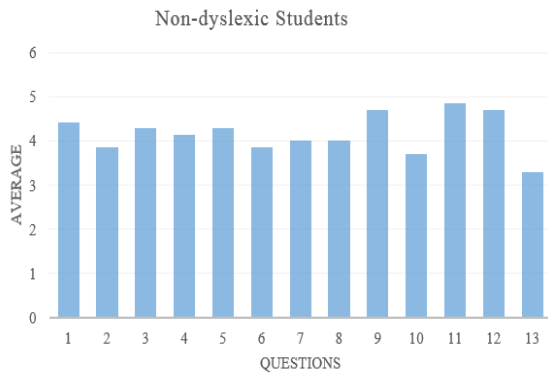
Table 1: The average number of each question



On the other hand, students who had not been diagnosed with dyslexia had mostly chosen numbers 3 to 5 which indicates a lower degree of difficulty in learning English. Although there were cases of choosing a number lower to the above mentioned, especially on questions regarding spelling and reading, that can be explained by lack of inner motivation or inappropriate teaching methods which led to poor school performance.

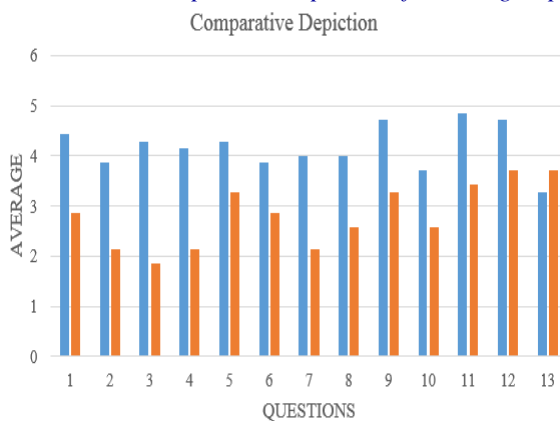
The average of each question is showed in table 2.

Table 2: The average of each question



The comparative depiction of the two groups shows the difference more obviously in table 3.

Table 3: The comparative depiction of the two groups



As it can be inferred from the results, students with dyslexia are experiencing greater difficulties to understand, express in written form, and eventually learn how to write the English language.

Moving on to interpret the data that has been collected a t-test was chosen. The research involved two variables. One independent, the dyslexic and the non-dyslexic students, and one dependent, the extent of difficulty in learning English. The first variable is categorical while the second is continuous.

Using the type for t-test

$$T = \frac{x_1 - x_2}{\frac{Sx_1x_2}{\sqrt{s_1^2 + s_2^2}}} \quad \text{where}$$

The t-statistic is calculated using the prices from table 4a and table 4b

Table 4a:

| Non-dyslexic students | SEX | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 |
|-----------------------|-----|------|------|------|------|------|------|----|----|------|------|------|------|-------|
| S1 | 1 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| S2 | 2 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 |
| S3 | 1 | 4 | 2 | 4 | 3 | 5 | 2 | 4 | 3 | 5 | 4 | 5 | 5 | 2 |
| S4 | 2 | 5 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 5 |
| S5 | 2 | 4 | 3 | 5 | 2 | 2 | 2 | 2 | 2 | 3 | 1 | 4 | 4 | 3 |
| S6 | 1 | 4 | 3 | 4 | 4 | 5 | 3 | 3 | 5 | 5 | 2 | 5 | 5 | 3 |
| S7 | 1 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 |
| | | 4,42 | 3,85 | 4,28 | 4,14 | 4,28 | 3,85 | 4 | 4 | 4,71 | 3,71 | 4,85 | 4,71 | 3,28 |
| | | | | | | | | | | | | | | 1,067 |

Table 4b:

| Dyslexic Students | SEX | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 |
|-------------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|
| S8 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 |
| S9 | 2 | 4 | 2 | 1 | 1 | 2 | 1 | 2 | 3 | 3 | 2 | 4 | 4 | 5 |
| S10 | 2 | 3 | 4 | 2 | 3 | 4 | 4 | 3 | 4 | 4 | 2 | 4 | 3 | 5 |
| S11 | 2 | 2 | 2 | 3 | 4 | 5 | 3 | 2 | 2 | 3 | 5 | 4 | 5 | 4 |
| S12 | 2 | 5 | 2 | 2 | 1 | 5 | 4 | 1 | 2 | 4 | 2 | 5 | 5 | 5 |
| S13 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 4 | 3 | 4 | 3 |
| S14 | 1 | 2 | 1 | 1 | 2 | 4 | 5 | 3 | 2 | 5 | 1 | 3 | 3 | 3 |
| | | 2,85 | 2,14 | 1,85 | 2,14 | 3,28 | 2,85 | 2,14 | 2,57 | 3,28 | 2,57 | 3,42 | 3,71 | 3,71 |
| | | | | | | | | | | | | | | 1,30 |

We get

$$t = \frac{4,16 - 2,81}{\frac{\sqrt{1,067^2 + 1,307^2}}{7}}$$

$$t = \frac{1,35}{\frac{\sqrt{1,138 + 1,708}}{7}}$$

$$t = \frac{1,35}{0,637}$$

$$t = 2,11$$

The degrees of freedom are

$$df = \text{total number of subjects}$$

$$\text{both groups} - 2$$

which means here

$$df = 14 - 2 = 12$$

Looking at a t-test significance table at the 12 degrees of freedom (table 5), it appears that the calculated t-value of 2,11 is greater than the required 1,78. This means that the result is statistically significant and that the analysis is at least 95% sure that the null hypothesis can be rejected. Therefore, the hypothesis that the students with dyslexia face more difficulties in learning English can be accepted.

Table 5:



t Table

| cum. prob | t _{.50} | t _{.75} | t _{.90} | t _{.95} | t _{.99} | t _{.995} | t _{.9975} | t _{.999} | t _{.9995} | t _{.9999} |
|-----------|------------------|------------------|------------------|------------------|------------------|-------------------|--------------------|-------------------|--------------------|--------------------|
| one-tail | 0.50 | 0.25 | 0.20 | 0.15 | 0.10 | 0.05 | 0.025 | 0.01 | 0.005 | 0.001 |
| two-tails | 1.00 | 0.50 | 0.40 | 0.30 | 0.20 | 0.10 | 0.05 | 0.02 | 0.01 | 0.002 |
| df | | | | | | | | | | |
| 1 | 0.000 | 1.000 | 1.376 | 1.963 | 3.078 | 6.314 | 12.71 | 31.82 | 63.66 | 318.31 |
| 2 | 0.000 | 0.816 | 1.061 | 1.386 | 1.886 | 2.920 | 4.303 | 6.965 | 9.925 | 22.327 |
| 3 | 0.000 | 0.765 | 0.978 | 1.250 | 1.638 | 2.353 | 3.182 | 4.541 | 5.841 | 10.215 |
| 4 | 0.000 | 0.741 | 0.941 | 1.190 | 1.533 | 2.132 | 2.776 | 3.747 | 4.604 | 7.173 |
| 5 | 0.000 | 0.727 | 0.920 | 1.156 | 1.476 | 2.015 | 2.571 | 3.385 | 4.032 | 5.893 |
| 6 | 0.000 | 0.718 | 0.906 | 1.134 | 1.440 | 1.943 | 2.447 | 3.143 | 3.707 | 5.208 |
| 7 | 0.000 | 0.711 | 0.896 | 1.119 | 1.415 | 1.895 | 2.365 | 2.998 | 3.499 | 4.785 |
| 8 | 0.000 | 0.706 | 0.889 | 1.108 | 1.397 | 1.860 | 2.306 | 2.896 | 3.355 | 4.501 |
| 9 | 0.000 | 0.703 | 0.883 | 1.100 | 1.383 | 1.833 | 2.282 | 2.821 | 3.250 | 4.297 |
| 10 | 0.000 | 0.700 | 0.879 | 1.093 | 1.372 | 1.812 | 2.228 | 2.784 | 3.169 | 4.144 |
| 11 | 0.000 | 0.697 | 0.876 | 1.088 | 1.363 | 1.795 | 2.201 | 2.718 | 3.106 | 4.025 |
| 12 | 0.000 | 0.695 | 0.873 | 1.083 | 1.356 | 1.782 | 2.179 | 2.681 | 3.055 | 3.930 |
| 13 | 0.000 | 0.694 | 0.870 | 1.079 | 1.350 | 1.771 | 2.160 | 2.650 | 3.012 | 3.852 |

5. Conclusion

This research aimed to investigate to what extent students diagnosed with dyslexia face difficulties in learning English in contrast to students with no learning difficulties.

Two hypotheses were addressed

- If a student is diagnosed with dyslexia they face more difficulties in learning English
- If a student is not diagnosed with dyslexia they face less difficulties in learning English

To investigate these hypotheses a questionnaire was formed and two groups of students, dyslexic and non-dyslexic, answered it.

The results led to infer that students with dyslexia face great difficulties, as they scored low in the above mentioned questionnaire while non-dyslexic students scored higher for the same questions. This can be a mean to understand the inner difficulties dyslexic students face and provide a different type of education and evaluation to those experiencing them.

All in all, dyslexia is a life-long condition. The characteristics may differ depending the age, the educational intervention, and the severity of the symptoms. However, all dyslexic students present problems in reading, writing and spelling as dyslexia is a disorder affecting mostly these aspects of language. Alongside problems are related to grammar

and syntax as well as listening and speaking, in a lower degree though. Finally, the psychological effects are also important causing high levels of anxiety and even frustration. It is a multi-dimensional disorder that affects the entire personality of the person diagnosed.

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