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ASSESSING THE EFFECTS OF DYSLEXIA ON SECOND LANGUAGE ACQUISITION

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ABSTRACT

Dyslexia is a learning disability in the area of reading. It is included in the category of "Learning Disabilities" in the Individuals with Disabilities Education Act (IDEA). The present study has assessed the acquired reading disabilities which are related to the oral representation of language. To achieve the aim of the research, an eight-year-old boy, who suffered from dyslexia, has been investigated and his disabilities have been evaluated. During the process of research, the boy has received some treatments and this conclusion has drawn that treating dyslexia can help a child to improve his other skills of language acquisition. Owing to the fact that dyslexia treatment can help a child in many ways, especially second language acquisition, the findings of this research can be helpful for non-Persian language learners who are acquiring Persian language and teach them how to augment their language skills.

KEYWORDS: *Dyslexia, Dyslexia treatment, Persian language acquisition.*



INTRODUCTION

Reading is more than translating print into the spoken word (decoding). Reading is getting meaning from print. Reading is a relatively new human capability, invented only a few thousand years ago. A child learns to speak at age one; reading is learned beginning at age five or six, and takes several years. Although reading has gotten the third rank among different skills in the natural process of first language acquisition, it is of considerable importance during educating and post-educating periods. Lots of learners encounter some adversities when reading and it can cause difficulties in acquiring other skills and courses. Owing to the fact that reading is of the same importance as other skills in teaching Persian to non-Persian learners, we should pay more attention to the skill of reading in Persian language acquisition and do more researches.

Although most people would recognize the term dyslexia, with a vague definition of it referring to some form of verbal or learning disability, fewer would define it as a specific learning disability primarily related to reading, and even fewer would agree on the behavioral and causal properties of this disability. The term has its origins in 1887, when Rudolf Berlin, an ophthalmologist, described reading difficulty (Rudolph, 1973), but it seems that, after more than a century of research, there is still no consensus as to what dyslexia exactly is. The ICD-10 and DSM-IV refer to a reading disorder that is characterized by lower reading achievement (i.e., reading accuracy, speed or comprehension), not explained by intelligence, vision, or education. During the last decades, there seem to be two schools of theorists on dyslexia: those who strictly define it as a phonological deficit (i.e., a lack of phonemic awareness) that is responsible for reading and spelling errors (e.g., Snowling, 2000); and those who support multiple (or at least two) substrates of cause for a reading disability, including a phonological deficit as a subtype (e.g. Wolf and Bowers, 1999).

Dyslexia is a frequent hereditary reading disability (e.g. Olson, 2002). It is a specific developmental disorder in learning to read, which is not the direct result of impairments in general intelligence, gross neurological deficits, uncorrected visual or auditory problems, emotional disturbances or inadequate schooling (Dilling et al. 1991). In alphabetic writing systems, dyslexia has consistently been associated with atypically low activation in posterior occipitotemporal and/or temporoparietal regions such as the angular gyrus (Rumsey et al. 1997; Brunswick et al., 1999; Paulesu et al., 2001; Shaywitz et al., 2002, 2003).

HISTORICAL REVIEW OF DYSLEXIA

According to aphasiologists, the scientific study of aphasia dates back to the second half of the 19th century when Broca and Wernicke described the two classical forms of aphasia. About 100 years later, Benton and Joynt presented a historical overview on aphasia from the Hippocratic writings (c. 400 BC) to 1800¹. In 1998 there were ten million children between seven and eleven

¹ retrieved from <http://www.tandfonline.com/doi/abs/10.1080/02687030500399293?journalCode=paph20#preview>



years of age who performed below the most basic level of reading achievement (Population Estimates Program, Population Division, US Census Bureau Washington, DC)

In 1760, a Parisian professor named Roorda had a stroke and it caused some problems with his reading, although he did not have any difficulties in writing. He wrote some notes which were later so helpful in Broca's studies (Golfam, 2005, p. 215).

Expressive aphasia was first identified by Paul Broca. He figured out that language ability was localized in the ventroposterior region of the frontal lobe. He investigated different causes of motor aphasia such as strokes and bleedings. Kousmal separated motor aphasia from sensory aphasia. Jackson represented the concept of neurodevelopment. Freud, in one of his earliest works, *On Aphasia* (1891), was concerned with speech disorders. He believed that specific regions of the brain were responsible for certain cognitive functions, and various complexes, especially Oedipus complex, can lead someone to aphasia.

In 1895, Ophthalmologist James Hinshelwood describes in medical journal, *The Lancet*, the case of acquired word blindness, where a 58 year old man awoke one morning to discover that he could no longer read. After his report, in 1896, Dr. W. Pringle Morgan writes in the *British Medical Journal* of a 14 year old who seemed to have word blindness from birth. He was described as bright, intelligent and quick, but had great difficulty reading and spelling despite the efforts of his teachers. Morgan wrote: "The schoolmaster who has taught him for some years says that he would be the smartest lad in the school if the instruction were entirely oral."

Samuel Torrey Orton was an American physician who was the first to investigate learning disabilities. He examined the causes and treatment of reading disabilities, dyslexia. Samuel T. Orton and Richard Masland in 1937 in their work, "Reading, Writing, and Specific Problems in Children and Selected Papers", evaluated students referred by teachers because they were in their school work although they had near-average, average, or above-average IQ scores.

Orton believed that word-deafness and word-blindness are not enough to explain aphasia, he introduced "strephosymbolia" as a type of dyslexia consisting of confusion between similar but oppositely oriented letters (b-d, p-q), and a tendency to read backward, a perceptual disorder in which objects are perceived as mirror images. Then, 'dyslexia' and 'alexia' have been coined.

Lauretta Bender and Paul Schilder developed the thesis that many of the language problems facing children with reading disabilities may have as their basis difficulty with the temporal ordering of sequences in a series of hierarchies of organization. They spent a great deal of time working in the broad field of language disability and its relationship with neurological disorders.

The primary professional dyslexia association has been named the Orton Dyslexia Society to continue his work on the prevention, treatment and study of dyslexia and help people who have problems with reading, writing and speaking (Kamali, 1998, p. 97).



DYSLEXIA AND ITS FEATURES

There are seven stages in reading acquisition which can be named in the following manner: 1. Recognition 2. Absorption 3. General comprehension 4. Final comprehension 5. Recording 6. Reminding 7. Written or spoken communication (Tousi, 1996, pp. 18-20). Disorders in any of these stages can make reading disabilities which are mostly accompanied with writing disabilities. Reading disability is still under investigation and researchers try to find accurate definitions for disorder, to determine coherent semiotics, to analyze the cognitive causes, to provide recognition methods, and to choose effective treatment approaches.

In this field, many researchers have posited various theories which can be compared to each other. Some of them are virtually specific and have analyzed how they have been organized, and some are more general which have concentrated on social and emotional variables.

Therefore, dyslexia is a descriptive term which can attribute dyslexia to a child or an adult who cannot read well, in the same vein that a doctor attributes headache to a person who has pain in his/her head (Dadesetan, 2005, p.156).

Different researchers have introduced dyslexia in different ways, but all of them have been in common in this hypothesis that dyslexia can be the result of three following causes in children who have above-average IQ scores:

1. Damages to angular gyrus which cause anomia
2. Growth disorders which cause dyslexia
3. Psychological reasons which can result in reluctance to read a text (Kamali, 1998, p. 95)

Considering various definitions of dyslexia, this conclusion can be drawn that a student has dyslexia who

- Has difficulties just in one or two lessons, not all of them
- Has average or above-average IQ score
- Has no problem with seeing, hearing, and thinking
- Has no emotional problem
- Has some problems with the basic psychological processes (such as visual perception, auditory perception, and written and spoken language perception)
- May have sufficient mental ability but little education development



Various researchers have found different causes of dyslexia and there is no exact answer for the question “what are the reasons for reading problems?” For instance, Hinshelwood (1917) believed that ‘word blindness’ was the result of the left angular gyrus’s damage which was congenital. Orton (1937) attributed it to practical neurological disorders of strephosymbolia. Rabinovitch (1968) introduced neurological, emotional and brain disorders as the reasons of dyslexia; Kritchly (1964), Thomson (1966) and Bender (1968) believed that delay in the gradual development of cerebral cortex causes reading problems. Orton has conducted lots of researches since 1957 and has defined dyslexia in the following manner (Tabrizi, 2007, p. 10):

1. Not being ready for reading
2. Physical disability such as visual or auditory
3. Insufficient environmental strength
4. General delay in speaking progress
5. Limited vocabulary
6. Cultural and social disabilities
7. Personal characteristics (emotional and compatibility problems)
8. Social elements
9. Environmental features
10. Not being paid attention at school, and continuously changing schools and teachers
11. Inappropriate conditions at home
12. Imperfect educational methods and facilities at school
13. Incomplete content of readable texts
14. Lack of perception at spatial situations
15. Lack of lateral dominance at brain
16. Impaired motor function
17. Inability to distinguish similar words

Although dyslexic children are not completely the same, they have some characteristics in common such as:



1. The preponderance of males with reading disabilities have been proved. Out of 12 cases, 9 of them have been males.
2. They have behavioral problems in the class.
3. They are reluctant to read
4. Not being able to build a vocabulary of words
5. Not being able to concentrate on something for a long time
6. Lack of concentration
7. Mostly failed in their school work
8. Most of them suffer from physical disabilities such as visual and auditory problems
9. They often encounter emotional issues
10. They feel disappointment, inaptitude and timidity
11. Being doubtful whether to read orally or not, and stutter while reading
12. Moving their head instead of their eyes when reading a text
13. Reading word by word and separately
14. They sound out words with a monotonous tone and require great effort to read
15. Inattention to punctuations and comprehension of the text
16. Even when they are reading slowly, they move their lips or they see the word in their mind and read it
17. They guess words which are irrelevant to the content or phonetic structure
18. They repeat or displace new acquired words
19. Lack of sufficient visual and auditory memory
20. Lack of sufficient auditory ability
21. Their family put a lot of pressure on them to improve test scores at school or they have an extreme negative attitude towards school's performance
22. They are not compatible at school
23. They do not have adequate social growth



Reading disorders can be classified into different groups, for instance, evolutionary, adventitious, phonologic, surface and deep disorders, each of which has its specific treatment (Ghasemi, 1997). Next section deals with dyslexia preliminaries and treatment strategies.

DYSLEXIA TREATMENT

Some preliminaries are required before treating or rehabilitating a dyslexic.

4.1. PRELIMINARIES OF TREATMENT AND REHABILITATION

Preliminaries of treating and rehabilitating a dyslexic can be categorized in the following manner:

1. Therapist's motivation
2. Good communication between therapist and dyslexic subject, and subject's willingness
3. Listening carefully as the dyslexic subject begins to read
4. Filling the given questionnaire to the subject's parents and teacher
5. Getting some information about the subject's IQ score
6. Doing team work and referring the subject to a specialist if it is out of our expertise
7. Interviewing the subject and making a friendly relationship with him
8. Testing the subject's reading level through the application of his course books at school
9. Evaluation and recognition: To recognize a subject's level of disability in reading, it is suggested to give some texts to the subject and ask him to read. Then, his level of comprehension, recognition and disabilities can be appraised. Tabrizi (2007) posited a table for disabilities evaluation and classification, and named it SMN. To have a quantitative research, the number of the mistakes have been compared and proportioned to the number of the words in a text, and then we have begun treatment of the cases who had the most frequent mistakes. Each part of the table is allocated to a specific disorder. For instance, if the student's disorders are assigned to numbers 1 to 19 in the table SMN, appendix 1 represents numbers 1 to 19. Treatment strategies should be sought and rooted in some problems related to language and speaking. Next section begins with the strategies of dyslexia treatment.
10. Designing a treatment plan
11. Providing some accessible, rudimentary and simple facilities for children to use them at home



12. Informing the subjects' parents and equip them with book therapy

5. TREATING LANGUAGE AND SPEAKING DISABILITIES

As it has been mentioned, if the student's problems are related to numbers 1 to 19 of table SMA, his language and speaking disabilities should be treated. Rabinovitch believes that dyslexia is in direct relation to language and speaking disabilities (Fallah Chai, 1995); therefore, it can be rooted in the first years of childhood.

The following tips are suggested to treat and rehabilitate a dyslexic:

1. We should determine the sound we are going to teach, for example 'r'. Then, we pronounce some words and ask the student whenever he hears the sound, he indicates it. For instance, sky, room, cloud, book, stairs, and so on.
2. We can pronounce some nonsense words and ask him whenever he hears the sound, he gives a sign. For example, rou, bou, mou, tou, fou, mer, dar, and so forth.
3. We can hold an object or point to a part of the body and mispronounce its name, and then we ask him to recognize our mistake and correct us. For example, we can hold a pencil, and say 'tencil', 'mencil', 'rencil', ... then he pronounces the correct word which is 'pencil'.
4. We can choose some words which can be easily mispronounced such as 'aluminum' that can be told 'amulium' by a child, then we teach him the correct form. After that, we can plan a game in which we pronounce the wrong form of the word, and the student corrects us.
5. We can pronounce some words and ask the student to repeat them.
6. We can pronounce some words incompletely, and ask the student to make it complete. For example, we say 'flo' and the student completes it and says 'wer'.
7. We can sound out the letters of a word separately for example 'f-lo-wer' and ask the student to pronounce it wholly 'flower'.
8. We can repeat the previous exercise while pronouncing some words which have the same ends, and ask him to repeat the end of the word after telling the complete word. For example, we can say 'p-l-ay' and ask him to say 'play', and then he should say the last part of the word which is 'ay'.
9. We can prepare some pictures that have the same beginnings and ask him to say their names and repeat the first part of the words, for example person, period, practice, personality, perfect, ...
10. We can show some pictures to the student. There should be two words among them which start alike. Then, we can ask him to tell us those two words.



11. We can repeat the previous exercise. But this time, the end of two words should be similar, and ask him to find those two words.
12. We can exercise those parts that the student has still problems.
13. We can show some relevant pictures to the student and ask him to explain its story and try to pronounce needed words correctly.
14. Therapist can demonstrate the alphabets to the student and him to pronounce them. We should repeat this exercise until become sure that he has learned all the alphabets.
15. Therapist can write all alphabets on a board or pieces of paper or show him the alphabets by using slides and pronounce some of them randomly. Then, we can ask him to find the pronounced letter and indicate it.
16. Therapist can write the alphabets on some pieces of paper, and each time gives the student some of the letters and asks him to make a word with those letters. For example, the therapist can give the student the letters 'd', 'k', 's' and 'e'. The student can make the word 'desk' with given letters.
17. We can pronounce some sounds and ask the student to make a word with the sounds, for example, we can sound out 'c-l-o-c-k', and the student pronounces 'clock'.
18. The student can imitate different animals' sounds like rooster, hen and other birds. It can help him to recognize sounds better.
19. Therapist can sound out some words and ask the student to repeat them. Then, the therapist can ask him to repeat the first sound of each word.
20. Like previous exercise, therapist can sound out some words and ask the student to repeat them. Then, the therapist can ask him to repeat the last sound of each word.
21. Therapist can sound out some words and ask the student to recognize the middle sound of the words.
22. Therapist can whisper a song, and then ask the student to repeat it.
23. We can ask the student to stand somewhere, and blindfold his eyes. Then, therapist circulates around him, while sometimes changing his direction, and pronounces a word. The student should recognize the sound's direction and points to the direction.
24. If the student can be successful in previous exercises, we can work on phonological components, leaving out parts of words, and sounding out words. Due to the fact that in Persian there are some sounds which are similar but they have different spellings, we can teach the student these similar sounds.



Considering the fact that there are different and even opposite perspectives about treatment strategies of dyslexia, the current study has focused more on the theory of Zhirout (2001, p. 229). He believed that dyslexia can be treated easier if we solve the dyslexic's language and speaking disabilities.

6. RESEARCH METHODOLOGY AND RESULTS

To achieve the aims of this study, the authors have visited two institutes: 1. Sevom Shaban School for impaired students 2. A public school. There were many dyslexic students in Sevom Shaban School, but due to the fact that they also suffered from some other disabilities and dyslexia treatment had to be accompanied with other disabilities' treatments, we preferred not to apply treatment strategies of dyslexia on them since it was out of this study's area. There were 7 classes of first and second grade in the public school. We asked the teachers of this school to introduce those students who had average or above-average IQ scores but couldn't read as well as other students. They introduced an 8-year-old student from second grade named Ali, and we started dyslexic treatments on him. He was the second child of a family of three children. He had average scores and his family never thought he was suffering from dyslexia. After some interviews, consultations and preliminaries, we decided to have 20 consecutive sessions of 20 minutes (in the presence of his parents). The applied treatment strategy was a combination of suggested patterns in previous section and the authors' linguistic knowledge. It should be also pointed out that his family paid much attention and repeated his exercised at home. The results were amazing and in the end, Ali was fluently capable of reading his first grade books. In addition, he could get better scores in his second grade lessons especially dictation. The worthiest of all benefits was that he could be released from lots of pressure and anxiety.

7. CONCLUSION

A person with dyslexia is someone with average to above average intelligence whose problem in reading is not the result of emotional problems, lack of motivation, poor teaching, mental retardation or vision or hearing deficits. The term dyslexia, however, is defined in different ways. While reading is the basic problem, people include different aspects of reading and related problems in their definitions.

Dyslexic people have some features in common. For instance, they are often reluctant to read; they are not able to concentrate on something for a long time, they suffer from lack of concentration, they are under a lot of pressure from their family to be successful at school. Dyslexia can be classified into different groups, but the present study focused on language and speaking disabilities. To treat a dyslexic, some preliminaries were required among them 'evaluation and recognition' were of great importance. After providing the preliminaries, treatment strategies were applied apropos of the subject and type of dyslexia. Finally, an eight-year-old child was chosen and treated based on the mentioned patterns and theories in the article. As a result of conducted treatments, the child could be released from his problem of dyslexia.



This conclusion can be drawn that dyslexia can be treated, and treating dyslexia can positively affect other aspects of learning. Not only can it be beneficial in first language acquisition, but also it can be helpful in second language acquisition.

APPENDIX 1

A part of table SMN (reading disabilities)

1. Mispronunciation
2. Omitting some sounds from a word
3. Replacing a sound with another sound in a word
4. Difficulty in recognizing similar sounds in a word
5. Difficulty in recognizing the sounds of alphabets
6. Replacing some sounds with each other
7. Pausing or hesitating when speaking
8. Difficulty in leaving out parts of words
9. Inability to sound out common one-syllable words
10. Inability to sound out multi-syllable words
11. Difficulty in sounding out the words which contain 'ü' sound
12. Difficulty in sounding out the words which contain 'i' sound
13. Difficulty in sounding out the consonants
14. Difficulty in sounding out the words that should be extended
15. Reading very slowly
16. Inability to connect the letters and associate letters with sounds and read the word
17. Repeating a part of a word
18. Repeating a part in some words of a sentence
19. Repeating a letter of a word



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