

The Contributions of Writing Therapy among Dyslexic Students

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ABSTRACT: *With this study we tried to understand the procedures and evaluate the results of the Writing Therapy in some Portuguese dyslexic students. We carried out an exploratory and qualitative research, based on a case study, started from an intensive collection of information about this type of reeducation and applied semi-structured interviews and documentary analysis. For the interpretation of the results we opted for content analysis, which allows a better reading of the information. The main results reveal the importance of writing therapy on dyslexic students, since according to interviews with students, parents, teachers / therapists and with documentary analysis. This methodology of reeducation is pedagogical and developed in four stages: evaluation, programming, initial phase or reeducation and later phase or techniques and methods of study. We, also, verified that the errors that students had before the intervention are debased or minimized, also bad behavior, rejection of school, insecurity, frustration, isolation, depression, suffering. The therapy increased confidence, self-esteem, promote the balance within the family and can be one more way of inclusion for dyslexic students. Given the type of study we consider relevant the testing of the method to other participants.*

Keywords –Dyslexia, Writing Therapy, Reeducation

I. INTRODUCTION

The study of learning difficulties in reading and writing, and in particular dyslexia, has the interest of the researchers that study the causes of educational success or failure (Buttner G. & Hasselhorn M., 2011; Sartorato, 2015; Moura, O., Pereira, M. & Simões, M. 2018).

Fonseca (1999), defines dyslexia as a lasting difficulty in learning to read and acquire its mechanism in intelligent, scholarly children without any existing sensory and psychic disturbances.

The International Dyslexia Association – IDA (2002) believes that this is a specific learning disability, of neurobiological origin. These difficulties result from a phonological deficit in relation to other cognitive capacities and educational conditions. Secondly there may be difficulties in reading comprehension, reduced reading experience that may impede the development of vocabulary and general knowledge.

In DSM-5 (APA, 2013), dyslexia is inserted into a broader category called Neurodevelopmental Disorders and is referred to as Specific Learning Disorder.

There is no identification of an exclusive cause for dyslexia, but studies show that there are differences in brain development and functioning. There is also a strong indication of the genetic component (Shaywitz S.E. & Shaywitz B.A., 2003; Buttner G. & Hasselhorn M., 2011; Sartorato E., 2015; Kuppen, S. E. A., & Goswami, U., 2016).

However, dyslexic child can learn to read, write and develop their special abilities and talents by offering an education appropriate to their characteristics and needs. The methods of re-education of dyslexia are varied and can be grouped into two large groups: those based on the methods of Mme. Borel-Maisonny and Claude Chassagny (Rocha, B., Rocha, M., Menéres, M, & Almeida, D., 1991; IDA, 2017). The first is more connected to reading and the second focuses on writing, but they are not opposed and can even be used in varying proportions according to the child's age, his intelligence and his degree of dyslexia.

Regarding the Writing Therapy, this one tries to evaluate the concrete deficits of the dyslexic subjects and according to the result of this evaluation, one of two methods of reading applies: the analytical and the synthetic one, as can be seen in the table 1 .

Table 1 Summary of Reading Methods (Torres & Fernández, 2001)

| Synthetic Method | <i>Analytical Method</i> |
|--------------------|--------------------------|
| Study of graphemes | Study of the phrase |
| Syllables | word |
| Words | syllable |
| study of sentences | study of the letter |

The choice of one of the methods will depend on the problem evidenced by the child. If the child has hearing problems, the teaching of reading and writing should privilege the visual modality, since in this case the ability will present a correct functioning. Subsequently, a basic training of hearing skills will be undertaken. If, on the contrary, the child has visual problems, the teaching of reading and writing should emphasize the use of the auditory modality and, little by little, advance to the training of visual abilities. (Torres & Fernández, 2001).

According to Auzias (1970), the goal of Writing Therapy is to achieve maximum efficiency with minimal energy expenditure, but the child can not achieve this goal if he does not face writing with a sense of freedom and autonomy.

Writing Therapy is based on classic studies of the main elements of writing analyzed by Gobineau and Perron (1954): the execution of flexible letters, adapted links between these letters, simplification, regularity, tracing, rhythm and speed (Auzias, 1970). There are many different exercises that develop these elements and help the child overcome issues related to letter writing / drawing.

Torres and Fernández (2001) also add the need to contemplate global and segmental relaxation techniques, which can help the child reduce anxiety, stress, frustration and also low self-esteem. These children are mostly shy, quiet (but restless internally) students with reduced motivation / interest in school and with low levels of self-esteem and self-concept (IDA, 2017).

After reeducation, the Theory of Writing focuses on teaching techniques and methods of study as a means of providing students with strategies that make them more competent and autonomous (Dias & Nunes, 1999).

Although there are several methods of re-education of dyslexic children, there are not many studies in Portugal about the benefits of the work developed in the context of Writing Therapy. In addition, writing therapy is based on the assumption that there is "no dyslexia, but dyslexics", making it necessary to evaluate the concrete deficits of the supposedly dyslexic subjects and, in this way, determine the underlying general problem - visual or auditory (Torres & Fernández, 2001).

In view of the above, we try to explore and understand the impact of writing therapy on dyslexic students?

In order to answer that question, two objectives were defined: to deepen the knowledge about the methodology of writing therapy and understand the results obtained through this type of reeducation. This work may be particularly important in the Portuguese context given the need to explore ways of inclusion of the dyslexic students.

II. METHOD

The present work is a case of study, that follows a qualitative approach, descriptive, based in interviews (Bogdan & Biklen, 1994). We used a non-probabilistic sampling technique, more specifically sampling for convenience. Thus, the study includes six participants: four students (two students are minors, so their parents are interviewed) and two teachers / therapists.

We pre-testing interviews and with the authorization, the interviews were recorded and transcribed for later analysis. All interviews have the record of the date and place where they took place, as well as their duration.

Based on Coelho (2016) and Torres & Fernández (2001), we found the most common errors in dyslexics. In an individual grid the errors that the student presented, before the reeducation by the Writing Therapy, and the errors that presented / displayed after the intervention are registered.

For the construction of the two instruments (interview scripts and error recording grid) it was necessary a meta-analysis of literature to create the profile of a dyslexic student. Is through that profile that the students are compared before and after the intervention. According to Torres & Fernández (2001), Rocha (2004), Ribeiro & Baptista (2006), Tops W., Callens M., Bijn E., Brysbaert M. (2014), Coelho (2016), IDA (2017) this is the profile of a student dyslexic:

Table 2 Profile of a Dyslexic Student

| Variable | Categories |
|-------------------|--|
| Psychology | Low auto concept, insecure and self-enclosed child. Shows failures of attention and concentration, inhibition, and disinterest. Shows insecurity, shame and frustration as a result of their failures and fail to overcome their difficulties. Can become an aggressive, undisciplined child. Their school production can reveal instability, apathy, disorganization and gap between some works and others. Anxiety: sleep and digestive problems, allergies. Uses strategies and tricks for not reading. Quite creative and imaginative, with above average abilities in certain areas (drawing, music, sport ...). |
| Pedagogy | Difficulty in acquiring instrumental techniques (reading, writing and calculation). Language difficulty. Reveals poor school performance and low school grades. Inability to learn and remember words viewed. Difficulty in spelling, in selecting the right words to communicate at an oral and written level. Does not enjoy Reading. Difficulty writing. Inversion of letters and words. Poor visual memory when linguistic symbols are involved. Easy eye movement when reading. Difficulty in applying what has been read to social or learning situations. Confusion between vowels or substitution of a consonant slow and hesitant Reading. Problems in spatio-temporal orientation. |
| Mobility | Little manual dexterity. Problems of orientation or direction. Astrous in structuring and knowledge of body schema. Tending for mirror writing. Slight co-ordination and maturation problems. |

To facilitate the analysis of the interviews, two grids of analysis were elaborated: one for the interviews done to the students and parents and another for the interviews done to the teachers / therapist. It was also decided to use another technique, the documentary analysis of error recording grids that constitutes an important technique in qualitative research (Sousa & Baptista, 2011).

III. RESULTS AND DISCUSSION

After conducting the interviews and their respective transcripts, the data were organized into content analysis grids, as previously mentioned. Thus, after reading the content analysis grid of the interviews with parents and students, higher frequencies were found in the following subcategories (Table 3). The analysis of the interviews with students and parents shows that these groups value their emotional state and their relationship to school and learning much more before beginning the Writing Therapy sessions, and the progress and changes they have made after beginning of the sessions of Writing Therapy.

It should be noted that all the interviewees of this group emphasized that the students showed significant improvements in several areas (emotional, pedagogical, social).

Table 3 Interviews with students and parents.

| Subcategory I - Knowledge of Dyslexia | of | Subcategory I - Before beginning the sessions of Writing Therapy | Subcategory I - After the beginning of the sessions |
|---------------------------------------|----|--|---|
| Highest number of | | Highest number of frequencies in | Highest number of |

frequencies in subcategory III - Emotional consequences
 subcategories III - EmotionalStateandRelationshipwithSchool / learning
 frequencies in subcategory III - Progress / Changes

As for the content analysis grid of the interviews with teachers / therapists (Table 4), there were higher frequencies in the following subcategories:

Table 4 Interviews with teachers / therapists.

| | |
|--|---|
| Subcategory I - Before beginning the sessions of Writing Therapy | Subcategory I - After the beginning of the sessions |
| Highest number of frequencies in subcategories III - Relationship with school and learning (behavior and integration) | Higestnumber of frequencies in subcategory III - Work developed |

From the content analysis grids of the interviews to the students and parents and the interviews to the teachers / therapists, a new framework was elaborated (Table 5) with the cross-referencing of the data obtained in all the interviews. In each subcategory the highest frequency was highlighted, either parents and students or teachers / therapists. It is observed that the two groups value different points: while the pupils and parents emphasize the results much more, the teachers / therapists further evidence the process, the method job.

Table 5 Crossing the interviews.

| Category | Subcategory I | Subcategory II | Frequency Students and Parents | Frequency Teachers / Therapists |
|------------------------|----------------------------------|---|--------------------------------|---------------------------------|
| Therapy Writing | Before the Beginning of sessions | Mistakes | 12 | 12 |
| | | Relation with school is learning (behavior integration) | 20 | 14 |
| | | Emotional state | 21 | 11 |
| | | Profile of the student in the family context | 6 | 8 |
| | After the Beginning of sessions | Work developed | 15 | 37 |
| | | Progress and changes | 21 | 12 |
| | | Student profile on family context | 2 | 7 |
| | | Continuation of studies and admission in job world | 3 | 9 |

In addition to the interviews, it was necessary to analyze the individual error recording grid that were filled out with the help of the teachers applicators / therapists and based on the students' work, where they record the errors that the students presented before and after the intervention, with the intention to verify if the errors remain even after the work done through the Writing Therapy (table 6).

Table 6 Students errors before and after Writing Therapy (WT) .

| Errors | Student A. (24 months WT) | | Student B. (24 months WT) | | Student C. (18 months WT) | | Aluno D. (18 months WT) | |
|--|---------------------------|----------|---------------------------|----------|---------------------------|----------|-------------------------|----------|
| | Before WT | After WT | Before WT | After WT | Before WT | After WT | Before WT | After WT |
| Skip or rewind lines | Yes | No | Yes | No | Yes | No | Yes | No |
| Omit letters | Yes | No | Yes | No | Yes | No | Yes | No |
| Confuses similar spellings | Yes | No | Yes | No | Yes | No | Yes | No |
| Reverse letters | Yes | No | Yes | No | Yes | No | Yes | No |
| Confuses spellings similar but with different orientation | Yes | No | Yes | No | Yes | No | Yes | No |
| Confuses letters | Yes | No | Yes | No | Yes | No | Yes | No |
| Reverse syllables or words | Yes | No | Yes | No | Yes | No | Yes | No |
| Repeat letters, syllables or words | Yes | No | Yes | No | No | No | No | No |
| Disrespects the rules spelling punctuation and accentuation | Yes | No | Yes | No | Yes | No | Yes | No |
| Copy wrongly the words | Yes | No | Yes | No | Yes | No | Yes | No |
| It reveals difficulties in composition and organization of ideas | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Reveals lack of organization space | Yes | No | Yes | No | Yes | No | Yes | No |
| Presents calligraphy unreadable | Yes | Yes | Yes | No | Yes | No | Yes | No |

We found that all pupils showed improvement in almost all of the errors they showed prior to the intervention. Not all students took the same time to achieve these goals, students A and B took 24 months and students C and D took 18 months, which reinforces the flexibility of the student's profile based on the diagnostic evaluation. Finally, according to what the Therapists have exposed, it can be understood that the Writing Therapy method is developed in the following steps, as can be seen in Table 6:

Table 6. Stages of the Writing Therapy Method

| Stages | Method |
|-------------------------------------|---|
| Evaluation | The student is referred by the Development Consultation, family doctor or by family decision. The student is evaluated by a team, therapist / teacher, speech therapist and psychologist, who, through the necessary tests, confirm (or not) the diagnosis and establish the working areas (deficit). |
| Programming | Based on the evaluation, a program is designed according to the student's profile, that is appropriate to their needs (pedagogical, emotional, intellectual or phonological). There is no standard program: other theories are used to create a service profile that is effective for that particular student. It focuses on learning to read and write and that this happens relies on components of other methods and other theories to complete the re-education program of that particular student. There is no time outlined for the re-education program: either it can last for six months or two years, it depends on the student. |
| Initial Fase or Re-education | The introduction to reeducation is done through the motor area, since writing is a motor act and, therefore, the foundation of this motor act is initially worked in a playful and then in a more systematic way, where the question of laterality, the rhythmic, equilibration and spatial orientation will be worked on with the student. There is a consolidation of the relationship with the therapist, as well as the acceptance and understanding of the problem by the student, which translates into an increase in confidence in oneself and in the teacher / therapist. The reeducation work always begins with the exchanges that were identified as being the most |

| | |
|--|---|
| | <p>significant in the initial evaluation and progress is made to the less significant ones.</p> <p>There is a collaboration with the student's teacher (s), giving information about the work that is being developed and requesting their participation whenever possible.</p> <p>Adjustments are made to the re-education program whenever the therapist deems it necessary and requests the close collaboration of the other technicians (speech therapist, psychologist ...) whenever this is in the best interests of the student.</p> <p>The question of color is introduced to facilitate decoding for dyslexic students, particularly those with mixed dyslexia characteristics, using color letters with contrasting colored background in the middle of the white text, so that the sound that is completely imperceptible for the student has a contrast such that some intellectual / cognitive switches are lit each time he sees that color; do not understand the grapheme / phoneme relationship, but perceive it with the phoneme / color relation (with contrasting background in white and black sheet).</p> <p>At a certain point the student no longer needs the color and does the correct reading of the word.</p> <p>The therapist explains, trains, and motivates the student's parents to the re-education process, including strategies for work to continue at home or at school.</p> <p>Students are encouraged to read aloud as a way to increase their confidence.</p> |
| Subsequent phase or Techniques and Methods of Study | <p>After re-education, and exchanges / errors are discussed, techniques and methods of study are introduced that allow students to continue their work in a more structured way: they function as tools that allow them to be more autonomous in their learning process.</p> <p>Much of the interpretation / perception of texts is done, but it is also closely allied to mathematics. Support is provided to study at times of evaluation, as well as in the production and presentation of works (orientation). The student is encouraged to read for recreational reasons, at his option, gradually stimulating the taste for reading.</p> |

In a comprehensive reading of the results, we can say that main principal behind this methodology of reeducation its pedagogical. It is more than a method, it is a work strategy. This strategy is continually open, under construction and always able to serve the student. There is no standardized work program in opposition to other methods that focus on only one deficit area, where students generally have several deficit areas. Errors and exchanges are just one part of the problem that covers much more than the pedagogical area.

The analysis of interviews with students and parents revealed that this group is poorly informed about dyslexia, presenting unclear notions about the problem. It is believed that this fact is due to the lack of awareness and information that still exists in Portugal around this neurological dysfunction.

The cross-referencing of the interview data to the students and parents and to the teachers / therapists allowed us to verify that they value different dimensions: the students and parents emphasize much more the results much and in the opposite the teachers / therapists evidence much more the process, the method of work. We admit that because parents do not participate in the sessions and only watch their children's progress and due to the facts of the students they are more focused on the improvements they feel and less on the way they have achieved them.

Regarding documentary analysis, in particular the analysis of the individual error recording grids, after crossing the data for the four students, it can be verified:

- that all pupils showed improvements in almost all the errors they had previously shown, before the intervention;
- not all students took the same time to achieve these goals: some succeeded at the end of an 18-month intervention, while others needed 24 months to achieve the same goal.

This data reinforces the flexibility of the student profile traced from the diagnostic evaluation and how each student has his / her work rhythm that must be respected.

It seems that it can be affirmed that Writing Therapy has a very positive impact on dyslexic students, since according to interviews with students, parents, teachers / therapists and with documentary analysis:

- the errors that students had before the intervention are debased or minimized;
- even the cases referred to as mixed dyslexia, very difficult to treat due to the complexity of their characteristics, end up being readers (not proficient but at least functional);
- everything else is minimized like bad behavior, rejection of school, insecurity, frustration, isolation, depression, suffering ...
- increased confidence and self-esteem;
- balance within the family.

IV. CONCLUSION

With this study we can explore the impact of writing therapy on dyslexic students, particularly to deepen the knowledge about the methodology and, also, comprehend the results obtained through this type of reeducation.

We verified that the Writing Therapy is developed in four stages: evaluation, programming, initial phase or reeducation and later phase or techniques and methods of study.

In addition, the application methodology is based on the following principles: evaluation by multidisciplinary team, individualized intervention, use of diversified strategies, outline an intervention plan appropriate to the child's abilities and difficulties, child responsibility as the main agent of change, trust with the therapist / teacher, articulation with all the intervenients in the educational process of the child, playful activity. This work may be particularly important in the Portuguese context given the need to explore ways of inclusion of the dyslexic students. At present, schools, students, parents, teachers and therapists have to respond to the new challenges of Inclusive Education in Portugal. Decree-Law number 54/2018, of July 6, was published which establishes the principles and norms that guarantee inclusion, as a process that aims to respond to the diversity of the needs and potentialities of each and every one of the students through increasing participation in learning processes and in the life of the educational community.

So, teachers and therapists have to face this challenge: not only to apply inclusive pedagogical practices and strategies, but to help the educational community to do so as well.

It is necessary to reinforce the importance of encouraging the existence of environments of cooperation and collaboration between the different professionals, since it allows to know new ways of acting, of being, of teaching, of including ... since they are all different from each other one can take advantage to learn from it and evolve as professionals.

However, dyslexic students do not often feel included in school, in the class, as we can see from the testimonies presented in this study. The learning of reading and writing becomes very unproductive, uninteresting, and the student does not find in them any motivation that increases the enthusiasm and the levels of attention. The behaviors changes as a reflection of the problem and the frustration with the learning difficulties that they feel. Inappropriate behaviors, aggressiveness, isolation, depression, and demotivation are a consequence of dyslexia. The emotional issue is thus the most serious, dramatic and most striking problem in the short and long term in the lives of these children.

Hence the importance of reeducation through Writing Therapy as a way of attenuating, minimizing the global aspects of dyslexia. Dyslexia is a learning difficulty that can, through an early intervention and reeducation lead the student to a good school performance: It is too important to give these students "tools" that they adopt as theirs and later to help them carry out their self-corrections, allowing them to pursue studies and pursue a professional course. Your difficulty becomes your instructor.

It is also verified, in our investigation, that the success of students learning through writing therapy is manifested at many levels of the students: psychomotor, phonological, emotional, pedagogical and social components. This is a process that we can call re-educational and integral, and that has a very positive impact on dyslexic students. All students that we observed showed improvement in almost all of the errors they showed prior to the intervention. The therapy contribute to the grow of self-esteem, promote the balance within the family and can be one more way of inclusion for dyslexic students.

During the research process we feel that the problem of dyslexia is a problem that these students carry not only in their school life, but also in their personal and family life. If this problem can be attenuated with an early intervention in reeducation, in particular through a method such as Writing Therapy, as our study points out, there is an urgent need to take consciousness and act to help children, families, schools and society at large. construct an integral intervention.

Finally, we reiterate that this is a explorative and qualitative research, based on a case study, it is not possible to make generalizations, which is the main limitation of this study, but it can be a starting point for future studies, namely the testing of the method to others participants.

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