

Autism Spectrum Disorder: A Case Study on Students Attainments

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ABSTRACT

Although the development of communication skills in children suffering from Disorders of the Autistic Spectre generally progresses in the same way as in children with typical development, it is however impeded in many ways at various stages of growing up, influenced by the mental ability of the children and the degree of the disorder. As a result, the course of development of communication skills in children suffering from Disorders of the Autistic Spectre is differentiated in comparison with the expected course of development. The aim of this study is to explore the level of linguistic skills of a pre-school child with a disorder of the autistic spectre. In order to explore the above mentioned aim, a qualitative approach was used. More specifically, the child was evaluated through certain linguistic tests whose organization is based on the existing international research. Moreover, a non-structured observation was used in order to record the pupil's difficulties as linguistic tests were being completed and locate any possible avoidance strategies as well as record the time needed to complete the activities. Finally, a structured interview of a child's parents was carried out in order to record all the personal characteristics of a child and fully sketch out the case that is being studied. The results that came out of the qualitative analysis of the data prove the existence of major difficulties in the linguistic field. More specifically, matching and oral response tests proved to be areas of great difficulty. However, the performance level in vocabulary tests with the use of pictures was significantly higher. The findings of the research lead to the conclusion that the linguistic characteristics of speech (phonological, morphological, semantic) of children with Disorders of the Autistic Spectre are significantly inferior compared to the expected developmental course. Moreover, the importance of the use of pictures should also be highlighted as the activities that included picture were the only ones at which the child's performance level was significantly better.

Keywords: Disorders of the Autistic Spectre, linguistic efficiency.

INTRODUCTION

Autism is a chronic developmental disorder that influences all aspects of social interaction and communication of a person. We are used to saying that people with autism are separated –on the basis of their communicational operation- into the following categories: a) individuals that communicate without the use of oral speech and only in order to cover their basic everyday needs, b) individuals that develop oral speech, however with the use of phrases that are repeated and actually use these phrases in order to express feelings and comment and c) individuals that communicate with the use of oral speech almost normally (Vogindroukas, 2015).

These disorders result in a deep influencing of the way the person conceives and experiences themselves, the world, the way in which they are educated, their behaviour, their adaptation and the way in which they function in their everyday life; (Dimitriou, Kosmou and Kyriazi, 2014). The development of communication in children with autism progresses in the same way as in children that grow up normally, but it is impeded in various ways in different developmental stages, as it is influenced by the mental ability of the children and the degree of their autistic disorder. So the development of communicational behaviors in children with autism is different compared to the way things progress in normal situations (Papantoniou and Kampouroglou 2015).

The development of the brain is the one that also influences linguistic progress, as the brain of autistic children reacts differently to surrounding stimuli (Kuhl, 2000).

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On the contrary, children that grow up typically have a brain that can discern similarities and differences in their environment and, based on them, can categorize them, rendering the development of the language possible and easier (Chalkiopoulou, 2010).

Specifically, as far as the ability of autistic children to read is concerned, the educational psychology service and the Ministry of Health and Culture (2014) observed that, through special teaching programs, these children can learn to read, always respecting the individuality of each case. However, it is generally accepted that in order to achieve reading and writing, what needs to be done is to constantly encourage the child and create motives (educational psychology service and ministry of health and culture, 2014).

The aim of this research is to analyze the linguistic efficiency of a pre-school child who is in kindergarten and suffers from Developmental Disorders or is in the Spectre of Autism. More specifically, through this research what is attempted is a) to evaluate the efficiency of the linguistic characteristics of speech, on a level of understanding, organization and expression, b) to assess the ability to understand and organize oral speech and written work which is linked to the learning procedure c) to single out special pupil profiles, in order to plan appropriate programs for autistic children (Tzouriadou, Sygkollitou, Anagnostopoulou and Vakola, 2008).

The structure of this thesis initially consists of a bibliographical review concerning autistic children. Further on, the methodology that has been used in order to carry out the research is presented. Later, the ethical issues that arise through this kind of topics are mentioned, emphasizing on the way in which principles of conduct were applied in the research. The results and the discussion of the findings follow; at this point, all the information is analyzed and the experimental data are presented and there is also a commentary on the basic findings, compared to previous researches. Finally, there is a review of the basic findings compared to research questions that had been posed initially.

METHODOLOGY

In order to explore the above mentioned research questions, the qualitative method was considered to be the most suitable one and was therefore chosen. According to Paschalioris and Milessis (2005), the recording of the data in the qualitative method is not done in the form of statistical data, as is the case in the quantitative method, but with 'lexical groups'. This happens because in this way the researcher can analyze in depth the ideas, notions and behaviors of the participants who are involved in the specific topic dealt with in the research (Matzoukas, 2005). Paschalioris and Milessis (2005, pg 22) add that 'the qualitative research includes a number of separate researches mainly known as follows: historical research, action research, case study, content analysis, ethnographic research, life stories or biographical research'.

The advantages of the qualitative method are that the research is done in detail and evidence is provided; there is also the chance to look into certain issues without prior adjustment or check and the participants in it help the researcher understand better the environment that they are researching (Iossifidis, 2003). More specifically, this research is a case study.

RESEARCH QUESTIONS

- What is the qualitative estimate of the linguistic characteristics of speech (phonological-morphological-semantic) of a pre-school child with Disorders of the Autistic Spectre on a level of intake, organization and expression?
- What is the level of the child's performance in activities relevant to Picture Vocabulary, Correlation Vocabulary, Intaken Vocabulary, as well as Oral Vocabulary?
- What are the qualitative characteristics that make up the language profile of an autistic pre-school child?

SAMPLE PARTICIPANTS

This sample consists of a pre-school child with general developmental disorders. Moreover, the child's mother through whom the full recording of his personal data was carried out participated in the research. The research was carried out in three days in order to facilitate the child and not get him tired; this is how the research was completed. The child is a 5-year-old boy. Throughout the research, there was no problem with the child. The child co-operated with the supervisor from the very first meeting. The child has a very good relationship with the other children, plays and co-operates with them. Moreover, he can take care of himself quite well. The selection of the sample was done based on certain techniques. In this case, the technique that was used for this specific research is the one of non-probability, emphasizing on the studied sample. According to Zaphiropoulos (2005), when circumstances do not allow probability sampling, such as the quick conduct of the research, then the sampling is carried out without probability, as is the case in the event of a pilot research. The results of a research carried out through non-probability sampling are not general and they involve the sample and the study specifically.

SELECTION DATA TOOLS

In order to materialize this research, a Psychometric-Differential Assessment was carried out through the Linguistic Proficiency Test, $\Lambda\text{-}\alpha\text{-T-}\omega$ (I), which was given under the supervision of a person suitably educated for the assessment and the differential diagnosis of a person with this specific test (Appendix 1). The test in question consists of the personal examination papers, through which the profile of the person that is being examined will be formed, regarding his ability to express himself on a vocabulary level and also his ability to define common words. The test contains at the beginning a picture-vocabulary and the child's task was to identify the pictures that the researcher told him to show. In the second part of the test, there was the intaken vocabulary; at this point the researcher asked the child a question and the child had to find the right picture. For example, the question was 'Which flower is the one that has thorns?' and the child had to show the rose. In the third part of the test, the researcher gave the child words and the child had to say what we do with these words in our everyday life, eg. the researcher said the word 'bed' and the child had to say that we sleep on it.

Moreover, what was also used was the non-structured-participational observation in order to record the child's difficulties during the completion of the test, the possible use of evasion strategies but also the time needed to

complete the activities. '*Participational observation is a very special strategy and method used by people to gain access to the internal, seemingly subjective, aspects of the human existence*' (Magos, 2005, pg.10). Direct and face-to-face contact offers abilities and a few advantages as it initially helps the researcher understand the framework in which the activities are carried out, thus resulting in the conquering of a substantial holistic aspect and also as it allows the researcher to participate in these activities. However, participational observation also has some difficulties such as, for example, the experience that researchers have regarding classroom environment, which results in the fact that they do not comprehend certain things that happen in their range of vision. In the same way, though, an observer who is not in direct contact with the field of classrooms faces problems, as they can understand the general ideas and not the particular ideas that arise from the close relationship that develops between teachers and their pupils (Magos, 2005). More specifically, the method that was used was non-structured observation and closed type questions. Cohen et al. (2008) mention that in non-structured observation what is sought is not so clear, so the person who is doing the research should observe what is going on before they decide how important it is for the research. Moreover, Cohen et al. (2008, pg. 514) add that 'half-structured and non-structured observations offer a review of the data following observation before they give certain ideas concerning the explanation of the observed cases'.

Finally, a structured interview was carried out with the mother of the child in order to record the personal characteristics of the child and fully outline the case that is being studied. The interview is the most widespread method used in qualitative research in order to select data. It is the procedure in which a person asks questions and another person answers them. An interview has a variety of uses and kinds. The kind of interview that the researcher uses is the structured interview which is relevant to the questionnaire and selects some more details. The researcher asks a set of strictly predetermined questions and the answers that they are expecting to receive also concern very specific issues. This means that all participants are given the exact same questions, with the exact same wording and in the exact same sequence by a researcher who has been trained to behave to every participant in the same way (usually a neutral one) (Papaioannou, Theodorakis, Goudas 2015). With this combination, several results were gathered and their recording was carried out with both statistical and lexical elements which are based on validity and reliability thus approaching the subject holistically.

RESEARCH PROCEDURE

According to the research procedure, the composition of the research essay is based on a specific structure, thus giving answers to several questions relevant to the time period and the place. Initially, the time period that the research was carried out was two months: from 10 May until 30 April. This period of time was enough so that the participants wouldn't feel pressed for time. During the same period of time, the results of the data were analyzed and processed. The place where the data were selected was chosen bearing in mind the level of familiarity that the participants have with the place. The selection of data was carried out in a special education centre in Attiki. The participants were approached by the researcher initially by phone and then with direct contact; these participants were given an analytical description of the aim of the research. The participants were given an informative letter (appendices 1,2,3) and a consent form (appendices 4,5,6) which had to be completed by participants thus declaring

that they wish to participate. The analysis of the different areas is the way in which the analysis of qualitative data was carried out. As Georgiadou and Kostitsi (2012, pg. 36) mention, in the case of the analysis of separate subjects, 'there is focusing on the searching and finding of several chosen terms within a text or texts, although the terms-ideas may be as much obvious and directly defined as indirect and descriptively defined'. Moreover, the researcher got together with the child three times in order to make sure that the recording of the data in the research tool is done correctly. The research lasted around one and a half hours every time. During the session, a second person who was trained on the application of the specific tool was also present. Consequently, the one researcher carried out the process while the other one was simply observing. However, Iossifidis (2003) also points out certain disadvantages that the qualitative method has. A few of them are the following: it is based only on a minimum sample; there is a reduction in its comparability and ability to be generalized; it is mainly based on the ideas of the researcher; and, finally, there may be a change in the case that is being studied due to the participation of the researcher. In order to compensate for all the above-mentioned disadvantages of the qualitative research, we chose to realize a combination of methodology techniques in order to achieve methodological triangulation, which will lead us to safe conclusions. What is meant with the term 'triangulation' is 'the combination of a lot of methods in the study of the same case' (Denzin, 1978). In other words, it is the use of more than one research technique in the study of the same research field where each one is used in order to confirm the results of the other. When one technique is used later, it confirms –but also develops- the results of the previous ones (Olsen, 2001). Triangulation is based on the principle that only one method cannot reflect the multidimensional social reality. In order to achieve this, there has to be a combination of more than one method. With the combination of multiple methods, sources and theories, it is possible that certain different dimensions of the research object may arise. In order to protect the qualitative tests, and in order to achieve validity and reliability, the technique of triangulation needs to be used. According to Kyriazopoulos and Samandas (2011, pg. 99), *'this technique is a method which is materialized with various techniques, in order to guarantee the fidelity, authenticity, reproduction ability and stability of the research results'*. It is necessary for each researcher - before they start their research – to carry out a pilot research as, according to what Magos (2005) mentions, a pilot research is done in order to test and improve the original scheduling.

RESULTS

The aim of the research is to detect and pinpoint mistakes that were made by a pupil that has been diagnosed with Disorders of the Autistic Spectre from the Centers of Diagnosis and Support (ΚΕΔΔΥ). In order to ensure anonymity and the protection of personal data, the name of the pupil is not mentioned. The pupil was given a set of graded tasks, which had been taken out of a test that includes various tasks, such as picture-vocabulary, correlation vocabulary, intaken vocabulary and oral vocabulary.

The child on whom this case study was built was 5 years old. 'P' has been diagnosed to belong to the autistic spectre. The child goes to a regular kindergarten, where he is among children of regular education, he has made friends with them and he plays with them. 'P' also has a cousin.

A research tool was applied in order to check up on the child's vocabulary. The results were positive because the child could recognize several pictures even if his vocabulary was not so developed due also to his age. The results for the child were found to be positive, as was the case in the research carried out on the computer. (Ferko 2011)

At this point, we should also answer the questions that arose at the beginning of this case study. A) What is the qualitative assessment of the linguistic characteristics of the speech (phonological, morphological, semantic) of a pre-school child with General Developmental Disorders, in the Autistic Spectre on the level of comprehension, organization and expression? B) What is the level of the child's performance in activities concerning Picture-Vocabulary, Correlation Vocabulary, Intaken Vocabulary as well as Oral Vocabulary?

In the first Sub-task, the one of Picture-Vocabulary, the pupil was able to identify correctly 40 out of the 46 pictures that he was asked to spot. The only pictures that he was not able to identify were the orange juice, the old man, the caravan, the pupil, the thermometer and the compass.

In the second Sub-task, the one of the Correlation Vocabulary, the pupil was able to identify correctly 20 out of 30 pictures that he was asked to spot. The aim of the sub-task was to identify pictures based on their similarity to the picture-stimulus.

In the third Sub-task, the one of the Intaken Vocabulary, the pupil was able to identify correctly only 6 out of the 12 pictures that were presented to him.

In the fourth Sub-task, the one of the Oral Vocabulary, the pupil was able to answer correctly only 6 out of the 29 tasks that he was presented with.

In the first part of the task, the aim was for the pupil to spot one whole word having been presented with the first syllable and a short description of the word. The only words that he was able to identify were the 'ball, father, lion and peel'.

In Part B of the task, the aim was for the pupil to delimit each word that he was presented with. In this task, he managed to define correctly only the words 'bed' and 'sad'. At this point, it should be mentioned that the problem is not located on a semantic, but mainly on an expressive level.

In the fifth Sub-task, the one of Articulation, the pupil was able to answer correctly only 6 out of the 29 questions that he was presented with.

In Part A of the task, the aim for the pupil was to spot the word in question with the use of a picture of an object and, at the same time, he was checked on the articulation of the word mentioned. The only words that he was able to identify correctly were the toothbrush, the hairbrush and the razor.

In Part B of the task, the aim was for the pupil to spot the word in question with the use of a short phrase, checking up on its articulation at the same time. In this task, the child was able to define correctly only the words 'church, man, evening school'.

At this point, it should be mentioned that the problem is located on a semantic level as much as an expressive level.

In the sixth Sub-task, the one of Phonemics Completion the pupil was able to answer correctly only 4 out of the 30 tasks that were given.

In this task, the pupil had to find the complete word through the use of individual phonemics of the word. The only words that the child managed to produce correctly were the words 'mother, ball, cat and sea'.

At this point, it should be mentioned that there was generalized difficulty with the problem mainly identified on unknown words.

In the seventh Sub-task, the one of Phonemics Analysis, the pupil was not able to answer correctly any of the 29 questions that were given.

In this sub-task, the aim was for the pupil to identify the sounds that make up this particular word.

At this point, it should be mentioned that the problem was generalized as it was impossible for the pupil to split even small words like 'chicken'.

In the eighth Sub-task, the one of the Phonemic Identification, the pupil was able to answer correctly 26 out of the 41 questions that were given.

In part A of the task, the pupil had to identify 8 out of the 14 words of the same sound on the basis of the sentence that followed.

In part B of the task, the pupil had to identify the word that was required based on its first syllable, its last syllable or with the omission of a phoneme. Generally, there was a set of 21 questions 18 out of which were answered correctly.

In the ninth Sub-task, the one of Morphosyntactical Comprehension, the pupil was able to answer correctly 8 out of the 13 questions that were given.

In this task, pictures were given and the aim was for the pupil to identify the picture that corresponds to the sentence that was read out to him.

In the tenth Sub-task, the one of Morphosyntactical Completion, the pupil was able to answer correctly 8 out of the 13 questions that were given.

In this task, the pupil was given a certain sentence and a corresponding stimulus and he had to identify the word that was missing from the sentence that was read out to him.

CONCLUSIONS

The reason for autism remains unknown. Autism is a chronic developmental disorder, which influences the fields of social interaction and communication of a person. Scientists believe that autism is a neurological disorder which

influences the functionality of the brain. Reliable diagnosis is possible at the age between 2 and 3 years. As a result, the study of such cases in pre-school age is very important, as the complexity of the problem is brought forward and there is the possibility to find solutions and propitiate certain situations within the school environment.

The complexity and the lack of homogeneity in the symptoms of autistic disorders makes it difficult to reach absolute results, as well as diagnostic decisions; each case is different. However, this does not mean that the research and the study cannot produce absolute results in certain cases.

Besides, the aim of this study was to strengthen the qualitative characteristics of the knowledge that an autistic child has as well as the characteristics of his behavior and his response to his picture-vocabulary, correlation vocabulary, intaken and oral vocabulary.

The results show that the difficulties in the area of language were brought forward to a great extent especially in the cases of correlation and oral response, while in the cases of picture-vocabulary there were good results, always relevant to the influence of colors and intense pictures on the brain of such a child and the way in which this helps join words and pictures correctly.

If the measurements were quantitatively of a higher level, a statistical analysis of the data could also be carried out, parallel to the qualitative one. This constitutes a major disadvantage of this research. Moreover, another contributory factor was the unwilling cooperation on the part of the child from a certain point and on. This impediment could probably be surpassed if there was more frequent contact between the researcher and the child, probably in his everyday school environment. Moreover, the familiarization of the researcher with the child, probably in his school environment would constitute a factor that could lead to the ironing out of differences as to incorrect interaction aiming at reaching results.

The limited research in other fields of the language, such as the field of grammar, is the reason why we do not yet have adequate data concerning any grammatical weaknesses that may appear in autism. This is why we analyzed certain researches that were carried out on children with autism and we tested their vocabulary. The research showed positive results and with a lot of effort the children could develop their vocabulary.

In addition, this study shows how necessary it is to carry out more research on certain people, especially on the level of pre-school age as that is when the level of expression through language, mathematics (Charitaki, Baralis, Polychronopoulou, Lappas, & Soulis, 2015a, 2015b), education, interaction of knowledge and expression as well as communication with other people could be improved in some cases.

It would be good to focus not only on the research and the materialization of specialized programs for children with autism, since it has been proven that the combination of experimentally alternative techniques through manuals can improve the communication of the child and his adaptation in the school environment, as is the case in children with Down syndrome (Baralis, Soulis, Lappas, & Charitaki, 2012; Charitaki, Baralis, Polychronopoulou, Lappas, & Soulis, 2014a, 2014b), autism (Charitaki, 2015).

Finally, it has been proven that sign language is used by a lot of autistic children who were not in a position to develop oral speech mainly in America and England, while in Greece, the limited use of the Greek sign language leads to a slower flow of the above mentioned venture. This is the reason why special attention should be paid to the communicational systems that contribute to the development of the linguistic ability of autistic children; special attention should also be paid to speech therapy and ergotherapy, as long as the autism spectrum does not include diseases that are cured through medication.

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