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The impact of using the psycho-pedagogical model to improve the integration of children with autism in mainstream preschool education

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Abstract

The article presents the results of the psycho-pedagogical experiment carried out in two kindergartens in Galati, on a sample comprising 4 teachers, 12 preschool children with autism and 74 inclusive preschool children. The study aimed to investigate the development process of the integrative system in early education by ensuring the interdependence between material resources, human resources and methodological resources existing in institutions implementing this type of training. The research is of value because it was carried out on an age segment that is little researched and explored, but which is of overwhelming importance in the development of preschool children with ASD in all aspects: psychological, social and emotional. It has been scientifically and practically demonstrated that a thorough training of teachers in mainstream education is required to ensure a successful integrated approach through a rigorous, well-founded intervention in accordance with the specific characteristics of children with ASD and their educational needs.

Keywords:

education, pre-school education, autism spectrum disorder, pre-school teachers, integration, efficient integration model, inclusive pre-schoolers

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1.Introduction

The education of children with disabilities remains a complex issue that depends on several analysis factors, including educational policies, ensuring access to education and respect for this right, the training of professionals in the field, the involvement of families in various educational programmes and, finally, attitudes towards the education of children with disabilities in society in general. At present, we are faced with a number of barriers affecting the quality of optimal integration, barriers which take the form of learning difficulties, and the focus is on the children's shortcomings and less on creating the necessary conditions to ensure active participation in the educational process in mainstream education. Under these circumstances, it is necessary to implement and apply the **model for the effective integration of children with autism (MEICA)** in the mainstream pre-school environment, which involves managing educational change through analysis of teachers' needs, support in planning activities, actual implementation of the plan and measuring the success of the change.

2.The revision of the speciality literature.

The epistemological research basis was grounded in a number of theories and models of approaches to integration offered in the literature. Two categories were identified including classical psychological models and current theories applied in pedagogical practice. From the first category we mention: Theory of Mind Executive Function Theory and Central Coherence Theory. From the category of current theories, we mention Hobson's Emotional Theory, Implicit Learning Theory, Mirror Neuron Theory, Prominent Landscape Theory, S-MAS1P-Socioschema Theory and MAS1P-Mental Age Spectrum within 1 person.

On the basis of the specific theories of this disorder, learning models that explain the general and functional mechanisms as well as the ways of approach in the pathology of autism are outlined: the connectionism or trial-and-error learning model, the instrumental

conditioning model, the Piagetian constructivism model, the social constructivism model of Lev Vygotsky, the sociocultural constructivism model of Bruner, the social learning model and the experiential learning theory.

However, the literature is not replete with **recent studies** that have focused on the autistic population integrated into mainstream preschool education, and there are very few, almost none.

A first study was conducted in Greece (2013-2014) by Aristea Fyssa, Anastasia Vlachou and Elias Avramidis and focused on the understanding of inclusion by mainstream and special preschool teachers in Greece. In 2013, Sheela Upendra, a professor at Pune University, India, intending to assess the knowledge of autism among teachers in different kindergartens in Pune, conducted research using a non-experimental method on a sample of 30 kindergarten teachers.

A different view on the inclusion of children in early childhood education was presented in 2014 Malaysian research by Sailajah Sukumarana, Judith Loveridgeb and Vanessa A. Greenb.

They surveyed both mainstream and special education teachers in integrated kindergartens in Malaysia, asking them about the level and nature of inclusion taking place in their school units and their perceptions and beliefs about inclusion.

The 2016 study by Australians Meike Mackenzie, Kathy Cologon, Marianne Fenech investigated educators' attitudes towards including a child with autism in a mainstream early childhood education and care setting in Australia.

3.Research methodology

The research aims to diagnose the level of knowledge, professional experiences, attitudes and needs of teachers regarding the integration of children with autism spectrum disorder in the preschool educational environment and to provide support through the development and implementation of a model to streamline the integration process of children with ASD.

The research objectives are the following: to determine the level of theoretical training of preschool teachers who have integrated children with ASD into the groups; to identify the needs of teachers in

the successful integration of pre-schoolers with ASD; to highlight intellectual and attitudinal perceptions regarding the integration of children with ASD; to determine the level of mental development of children in the experimental group in relation to chronological age; implementation of the psycho-pedagogical model for the efficiency of the educational process in the integration of children with ASD in the preschool environment and analysis of the effects of the application of the psycho-pedagogical model on the teachers in the experimental sample, the children with ASD and the children in the integration group by recording the results and comparing them in the pre-test and post-test stages.

The hypothesis underlying the experimental research was: we assume that the efficiency of the integrated educational process in the preschool environment increases under the conditions of implementing the psycho-pedagogical model through cognitive, behavioural and socio-emotional stimulation influencing the level of development and integration of children with ASD in the integrative group, but also the level of professional skills of the teachers involved.

The experimental research was carried out in two schools in Galati: Normal Schedule Kindergarten No. 40 and Extended-day Kindergarten No. 9, Galati.

Experimental samples include: Experimental sample made of: *Ladybug group* (Normal Schedule Kindergarten No. 40) with the following composition: one teacher, 24 pre-schoolers, 4 of them with ASD and 20 children with integration, and *Smurfs' Group* (Extended-day Kindergarten No. 9) with one teacher, 21 pre-schoolers in total, including 2 with ASD and 19 inclusive children. The control sample comprises the *Little bees' group* (Normal Schedule Kindergarten No. 40) with one teacher and 21 children enrolled, including 3 with ASD and 18 inclusive children, and *Little huskies group* (Extended-day Kindergarten No. 9) with one teacher and 20 inclusive children, including 3 with ASD and 17 inclusive children.

The tools underlying the experimental approach were:

- Training Needs Identification Questionnaire and MEICA Feedback Questionnaire (for teachers).
- Portage test (for ASD pre-schoolers).

- Pre-test Sociometric Questionnaire and Post-test Sociometric Questionnaire (for inclusive pre-schoolers).

In concrete terms, the experimental design was achieved through a series of stages or steps that consistently sought to make the mainstreaming of children with ASD more effective in a rigorously organized and planned approach as follows:

1. Initial diagnosis of significant aspects of integrated early childhood education;

2. Implementation of the psycho-pedagogical model to improve the integration of children with ASD in the preschool environment by organizing training sessions for teachers participating in the experiment and applying in practice the notions assimilated through access to the educational website and open educational resources.

3. Measuring the impact of the implementation of the psycho-pedagogical model and drawing conclusions.

4.Analysis and interpretation of the research data

An analysis of the results of the questionnaire administered to ***pre-school teachers*** revealed the following:

- teachers, although currently working with such children, agree with the idea of special education and separatist forms;
- the level of knowledge of the practical problems of integrated education influences the degree to which teachers act and perceive it - their lack of professional training leads to an inability to approach the educational process from the perspective of special education, inducing feelings/attitudes of rejection and resistance.
- it was found that the stress level of teachers involved in working with children with ASD in mainstream pre-school education would be reduced if there was specialised training in this field.
- teachers consider themselves professionally unprepared for a real successful integration in work with children with ASD;
- there is a general perception that the school and the community have a negative attitude towards the development of integration of special needs children;
- there are a number of barriers or factors blocking integrated education on the part of both teachers and parents and children with disabilities;

- respondents show willingness to be involved in achieving successful integrated education and the effort is quantified as a source of job satisfaction;
- a rationally pragmatic attitude to the process of transition to integrated education through the involvement of a team of specialists is noticed: school managers, psychologists, other teachers and the need for professional skills training to combat the negative effects that block the smooth running of the integrated education process.
- as regards the perception of the integration of children with autism into mainstream pre-school education, 75% see integration as a response to the needs of all children, 75% partially agree that it is a step towards eliminating discrimination, but contrary to these favourable opinions all respondents see this process as difficult due to the lack of training of teachers.
- a low percentage of teachers were found to be aware of autism-related disorders and working with *children with autism* involves extra work, *difficulties in managing behavioural problems and lack of pay*
- in terms of teachers' perceptions of the benefits of integrating pre-school children into the educational environment, the main benefit was found to be *acceptance by others*, followed by two other statements *learning opportunities through contact with other people and will learn new skills*, with a score of 35, followed by a score of 34 for *equality with other children*.
- the analysis of the perception of the responding teachers regarding the difficulties encountered by children with ASD in the integration process revealed a tendency for them to isolate themselves, with a score of 35 points, not to cope with the demanding subject matter, with a score of 31 points, and in third place with a score of 27 points, teachers will not pay enough attention to them.
- another aspect under analysis is the perception of children integrating children with ASD into the pre-school group. It was found that integrating children with ASD into the group would result in a distraction from the normal educational process, and typically developing pre-schoolers would stop learning and be distracted from activities.

In conclusion, the application of the teacher questionnaire revealed the inability of the current educational system to manage the problem of effective integration of children with ASD, with a number of dysfunctions.

The analysis of the evolution of the psychological development of the pre-school children with ASD participating in the experimental approach was carried out by correlating the results obtained by applying the Portage test in the two stages of the research: initial and final. Analysing the differences between the two stages of the research in the Ladybug group of, a positive evolution marked by an increase in the development coefficient and in the mental age is observed (Table 1). The D.I.C. subject who obtained the highest score in the initial test 68.33 shows a significant evolution compared to a final score of 69.80. In the case of the I.G.M. subject there is a stagnation in the evolution of mental development, which can be justified by the manifestation of hostile behaviour towards teachers and colleagues and a total lack of involvement in the problems and tasks of the preschool environment.

The general aspect is the evolution of the experimental sample, which shows that participation in the experimental approach had positive results in terms of psychological development and integration prospects within the group of children.

Table 1. Comparative analysis of mental development in the experimental group (LADYBUG GROUP) in the research stages.

Pre-schooler initials	Chrono logical age	Development areas						Development coefficient
		Socializing	Language	Self-service	Cognitive	Motor	Mental age	
EXPERIMENT-PRE-TEST GROUP								
Ladybug group								
C.D.A.	4 years/ 48months	23 months	18 months	35 months	39 months	40 months	31	**64.58**
D.I.C.	4 years /48months	26 months	27 months	35 months	34 months	42 months	32.8	**68.33**
I.G.M.	4.5years/ 53 months	25 months	20 months	29 months	31 months	39 months	28.8	**54.33**

P.M.A.	4.8years/ 56 months	29 months	36 months	31 months	34 months	28 months	31.6	**56.42**
EXPERIMENT- POST-TEST GROUP								
Ladybug group								
C.D.A.	4.3 years / 51 months	25 months	20 months	36 months	40 months	45 months	33.2	**65.09**
D.I.C.	4.3 years/ 51 months	27 months	30 months	38 months	35 months	48 months	35.6	**69.80**
I.G.M.	4.8 years/ 56 months	25 months	20 months	29 months	31 months	39 months	28.8	**54.33**
P.M.A.	5.1 years/ 59 months	32 months	39 months	32 months	36 months	30 months	33.8	**57.28**

In the case of pre-schoolers with ASD belonging to the Smurfs group (Table 2), there is an insignificant evolution of the subject D.F. and a regression of the subject D.B., who obtained a coefficient of 78.82 in the initial stage and a score of 75.59 in the final stage. The pre-schooler's regression can be justified by violent manifestations of behaviour - aggressive behaviour towards teachers and classmates, a total refusal to get involved in the proposed activities, and a lack of interest on the part of the family, aspects which led to an increase in the phenomenon of integration in the preschool environment.

Table 2. Comparative analysis of mental development in the experimental group (SMURFS' GROUP) in the research stages.

Pre-schooler initials	**Chronological age**	**Development areas**						**Development coefficient**
		Socializing	**Language**	**Self-service**	**Cognitive**	**Motor**	**Mental age**	
EXPERIMENT-PRE-TEST GROUP								
Smurfs' group								
D. F.	4.6 years /54 months	52 months	48 months	34 months	37 months	39 months	42	77.7

D. B.	4.3 years / 51 months	48 months	49 months	38 months	37 months	29 months	40.2	78,82
EXPERIMENT-POST-TEST GROUP								
Smurfs' group								
D. F.	4.9 years / 57 months	56 months	51 months	34 months	39 months	42 months	44.4	**77.89**
D. B.	4.6 years / 59 months	53 months	51 months	43 months	39 months	37 months	44.6	**75.59**

In general, the conclusion that emerges is that the participation of children with ASD in the programme for improving integration in the pre-school environment has had positive results in terms of mental development and has contributed to increasing the developmental quotient in direct relation to chronological-mental age.

As for the control group, it was found that the developmental coefficient values of the subjects in the Bee Group remained constant compared to the initial stage, only in the case of subject M.N. a decrease in the score from 62.08 to 58.82 was recorded, a regression argued by the worsening of integration problems caused by the lack of intervention and their resolution. In the case of the strong-willed group, the same tendency of maintaining the values of the pre-experimental stage was observed, but also a regression of the subject M.P. from 55.76 to 51.15 due to problems in the family environment caused by the divorce between the parents, whereas an initiative of self-stimulation and hyperkineticism had been observed.

The analysis of the results from the perspective of **inclusive pre-schoolers** was based on the sociometric test in the first stage of the research and reapplied in the final stage to determine the changes produced from the perspective of interactions with children with ASD measured in choices/rejections. Analysing the frequency of choices and rejections, it can be seen that in the case of the experimental group in the post-experimental stage, the number of rejections of the integrative pre-schoolers towards children with ASD decreased, showing a tendency of acceptance of them by increasing the degree of tolerance. In the case of the control group, the results are similar to

those of the pre-experimental stage, with an increase in the number of rejections within the group.

Conclusions

The results of the psycho-pedagogical experiment highlight the functionality of the psycho-pedagogical model of integrated learning efficiency in the preschool environment through the development of social, emotional, behavioural aspects that complement each other and interconnect in a harmonious process and lead to the confirmation of the hypothesis and the demonstration of the solution of the scientific problem. The training and development of professional skills of the teachers involved led to changes in approach in pedagogical practice, elimination of stress caused by the inability to achieve integration of children with ASD and to a new innovative vision of tolerance and acceptance of atypical pre-schoolers. The experimental impact was also evidenced by the high level of group cohesion: the number of acceptances within the group increased, eliminating manifestations of rejection by the inclusive children.

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