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“Key to Behavioral Observation of Developmental Disorders” by teachers in Greek School and the role of ICTs

Irene Chaidi¹, Athanasios Drigas²

¹²Net Media Lab Mind - Brain R&D IIT - N.C.S.R. "Demokritos" , Athens, Greece,

¹Department of Special Education, University of Thessaly, Volos

irhaidi@gmail.com, dr@iit.demokritos.gr

Abstract. Children on the autism spectrum present significant difficulties in recognizing, understanding, and expressing emotions and, consequently, in their socialization. The teachers, to create a personalized education program for the students, record, through direct or systematic observation, important information regarding the manifestation of these emotions. Key is also a recording tool Observation behavior development disorders: Key observation behavioral developmental disorders: Cohen, Stem, & Balaban (1995) (trans. D. Evangelou, ed. S. Bosniadou) in the field of emotion expression. In this paper, the observation key was administered to teachers teaching students with ASD, completed, its results are analyzed and conclusions are drawn.

Keywords. autism spectrum, co-emotional intelligence, key observation behavior development of disorders

1. Introduction

Autistic disorder (autism) is a serious widespread disorder of a person's development, which accompanies the person throughout his life, affecting his perception, thinking and behavior, and is characterized by a) significant difficulties in the development of social and communication skills and mutual interactions of the individual with those around him, and b) limited and repetitive stereotypical interests and behaviors. [1], [2], [3]. People with ASD show deficits in their socio-emotional skills in an area important for their communication and socialization.

Teachers of students with ASD have the primary responsibility for achieving the educational teaching goals as defined in the Comprehensive Curriculum, often differentiating their teaching to ensure the participation and progress of all students in the class and to provide individualized intervention based on the goals of the Individualized Educational Program (IEP), assuming certain responsibilities, to promote the school integration of students with ASD [4], [5], [6].

One of the roles and responsibilities of the teacher in the education of people with ASD is to actively participate in the assessment of the special educational needs of the child and to have a complete picture of his strengths and weaknesses. [7]

The observation: Through observation, which is one of the most direct sources of information, everything related to the research study is recorded, which aims to investigate in-depth questions and investigates the behaviors, actions, and movements of the students.

The types of observation are:

a) direct observation: the observer-researcher is the witness of the individual and collective behaviors without modifying the usual course of communication situations of students at school,

b) participatory observation: the observer-researcher participates in the situation to be examined and

c) the indirect or experimental observation where the observer-researcher studies individual or collective behaviors but this time through circumstances that she will create.

2. Autism Spectrum Disorder (ASD)

ASD is one of the major developmental disorders of the autistic spectrum and a lifelong developmental disorder and is characterized according to [1], [2], [3] by a) significant difficulties in the development of social and communication skills and mutual interactions of the individual with those around him, and b) limited and repetitive stereotypical interests and behaviors.

Individuals on the autism spectrum present the triad of disorders a) difficulties in social interaction, e.g. appearing isolated and indifferent to others, b) difficulties in verbal and non-verbal communication, e.g. do not understand the meaning of common gestures, facial expressions, or tone of voice, and c) difficulties in imagination, e.g. limited range of interests, stereotypes and repetitive patterns of behavior [8]. These difficulties result in people on the autism spectrum facing serious problems in their social relationships, communication, and behavior.

Children with ASD show great heterogeneity in the expression of sociability. Some children show a lack of motivation to interact, which in some cases reaches the point of avoiding interaction, e.g. they avoid touching and eye contact. Some other children with ASD actively seek interaction, but in a way that is not socially acceptable, e.g. interact in a repetitive and monotonous manner. The above serious difficulties in the field of social skills, which is an area of primary importance for the development of the student, dictate the existence of a curriculum with specialized objectives and activities.

Teaching people with autism social skills should be based on flexible teaching strategies and individualized programs. The basic condition for the development of social skills is the existence of motivation for social contacts and relationships that are meaningful for the child. For this purpose, the teacher must create conditions in the classroom where the student with autism is interested in participating.

3. Observation

Observation is a very important research tool with which phenomena and situations are recorded, as they are offered by their nature to the observer, and is one of the most well-known methods used in the study of the child's behavior and development. At the end of the 18th century, doctors, parents, and teachers, "kept" a diary recording in detail the progress of the child's physical, emotional and mental development [9], as, Piaget (1962) based the theory of intelligence development on infancy observing his three children.

At the beginning of a research process, observation allows us to start observing the phenomenon we are interested in, gather some evidence as a start, and continue with more specialized systematic records [10].

3.1.1. C) Key observation of behavioral developmental disorders (Cohen, Stern, & Balaban, 1995).

In the first stages of research, we usually start the observation of the phenomenon we are interested in with a direct, physical observation [10] to continue if necessary with more systematic recordings. Direct or systematic observation, although it often involves the risk of subjectivity and does not allow the creation of causal relationships, explanations, and theories, is a source of valuable information for scientists and researchers. In this particular case, the observation is SPECTATOR-NON-PARTICIPATIVE which means that the observation is done by the researcher, and the teachers, parents, and children-students are aware of the presence of the researcher but she does not participate in the activities. That is, the researcher is in the classroom and sits in the back and observes the conduct of the activities.

This particular method aims to observe the child's behavior, which is determined by multiple factors at different levels.

In this specific research, from the behavioral observation key, valuable data will be obtained for the manifestation of the students' emotions in terms of two axes of observation a) in terms of their relationship with the teacher, b) the way of expressing the emotions of the students, c) the understanding of these.

4. Method

4.1.1 The Key observation behavior development of disturbance

A key observation of behavioral developmental disorders: Cohen, Stem, & Balaban (1995) was completed by 11 teachers of students attending the 1st^{Special} Primary School of Amrousi, Public School Unit for Special Education and Education (SMEAE) The sample of this work was selected by random sampling [11] and it consists of 7 boys and 1 girl of school age with a diagnosis of ASD as determined by medical-pedagogical centers of public hospitals and KEDASY (Differential Diagnosis and Support Center), based on the criteria of [1], [2], [3].

4.1.2. Teachers'profile

11 teachers completed the observation key and the teachers were involved in the education of students with ASD in different specialties.

Analytically:

4 Special Education and Education Educators, the students' teachers who deal with the achievement of educational teaching goals and provide personalized intervention based on the goals of the Individualized Education Program (IEP)

1 Psychologist

1 Occupational therapist

1 Gymnast

1Speech therapist

1 Nurse

1 Musician

1 Special Support Staff

4.1.3 Students' profile

The students have been diagnosed with Autism Spectrum Disorder based on the criteria of the 5th^{Edition} of the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association [1], [2] by medical-pedagogical centers of public hospitals and KEDDY (Center for Differential Diagnosis and Support). The general intelligence of each participant was assessed through the Greek version of the WISC-III, and the severity of autism symptoms through the Childhood Autism Rating Scale.

Andrea's chronological age was 13 years old while his general intelligence index was calculated at 42 points based on the Greek version of the WISC-III, which places him at the moderate level of mental retardation, while from the administration of the Child Autism Assessment Scale it emerged that Andreas exhibits mild autism.

The general intelligence index of Herakles was calculated at 40 units based on the Greek version of the WISC-III, which places him at the moderate level of mental retardation, while his chronological age was 12 years and 5 months, while from the administration of the Children's Assessment Scale Autism revealed that Herakles has moderate autism.

Panagiotis' general intelligence index was calculated at 50 points, based on the Greek version of the WISC-III, which places him on the borderline between the level of moderate and mild mental retardation, when his chronological age was 11 years and 10 months. And the administration of the Child Autism Assessment Scale shows Panagiotis with mild autism.

Leonardo's general intelligence index was calculated at 50 points, based on the Greek version of the WISC-III, i.e. the limit between the level of moderate and mild mental retardation, and his chronological age was 10 years and 3 months, while from the administration of the Assessment Scale of Childhood Autism shows that Leonardo has moderate autism.

Makis's general intelligence index was calculated at 41 points, based on the Greek version of the WISC-III, which places him in a moderate level of mental retardation with a chronological age of 10 years, while since the administration of the Child Autism Assessment Scale, Makis appears with mild autism.

George's general intelligence index was calculated at 48 points, based on the Greek version of the WISC-III, at the moderate level of mental retardation, while his chronological age was 12 years and 1 month. From the administration of the Child Autism Assessment Scale, it emerged that George has mild autism.

The chronological age of Nikos was 10 years and 3 months, with his general intelligence index calculated at 38 units, according to the Greek version of the WISC-III, i.e. at the moderate level of mental retardation. From the administration of the Children's Autism Assessment Scale, it appears that Nikos exhibits borderline moderate to severe autism.

Maria's chronological age was 13 years and 2 months, while her general intelligence index was calculated at 40 points, according to the Greek version of the WISC-III, which places her at a moderate level of mental retardation. About the administration of the Child Autism Rating Scale, Maria shows moderate autism.

Participant STUDENTS' demographics are detailed in Table 1.

STUDENTS' PROFILE					
a/a	NAME	AGE (years, months)	INTELLIGENCE QUOTIG (IQ)	SCHOOL CLASS	DIAGNOSIS
1.	Andrew	13 years old	42	6 th grade	ASD with moderate N.Y
2.	Hercules	12 years 5 months	40	5 th grade	ASD with moderate N.Y
3.	Panayiotis	11 years and 10 months	50	5 th grade	ASD with Moderate Mental Retardation
4.	Leonardo	10 years 3 months	50	4 th grade	ASD with Moderate Mental Retardation
5.	Makis	10 years old	41	2 nd grade	ASD with Moderate Mental Retardation
6.	George	12 years 1 month	48	5 th grade	ASD with Moderate Mental Retardation
7.	Nikos	10 years 3 months	38	2 nd grade	ASD with Moderate Mental Retardation
8.	Mary	13 years and 2 months	40	6 th grade	ASD with Moderate Mental Retardation

All the children attended an individual psychotherapy program on an individual level with private therapists at home or in a private center or in a Creative Employment Center (CEC) of the Municipality in which they live before and throughout the research.

5. Questionnaire

Completion of a questionnaire exploring the views of teachers about the education of emotions: **TEACHER OBSERVATION KEY: A. IN RELATION TO THE EDUCATIONAL, B. WAYS OF EXPRESSING FEELINGS, and C. FUNCTIONING OF THE EGO** as part of the questionnaire: "Observation key for the development of developmental disorders" (, D., Stern V., & Balaban N., 1995). (edited by D. Evangelou, edited by S. Bosniadou) in the field of expression of emotions.

A. IN RELATION TO THE EDUCATIONAL		
a/a	Question	ASSESSMENT OF CONDITION REMARK
1	<i>Does the child face difficulties in cooperating with the teacher?</i>	
2	<i>Does the child seem uncomfortable with the teacher's presence in the room?</i>	
3	<i>Does the child tend to withdraw from the activity?</i>	
4	<i>Does the child look scared, and is looking for someone of its own?</i>	
5	<i>Does the child resist the teacher's instructions?</i>	
6	<i>Is the child overly apathetic?</i>	
7	<i>Does the child tend to give up the activity quickly?</i>	
8	<i>Is the child disobedient to the teacher?</i>	

9	<i>Is the child aggressive towards his teacher?</i>	
10	<i>Does the child tend to verbally attack the teacher?</i>	
11	<i>Does the child tend to attack the teacher?</i>	
12	<i>Does the child cling to the teacher during the training session and touch him often?</i>	

B. WAYS OF EXPRESSING FEELINGS

a/a	QUESTIONS	ASSESSMENT OF CONDITION REMARK
1	<i>Can't wait to attend the activity?</i>	
2	<i>Does he give up the activity when he feels that he is not succeeding?</i>	
3	<i>Does the child express anticipation of disasters?</i>	
4	<i>Does he have outbursts of anger during the activity?</i>	
5	<i>Does he react inappropriately to the various stimuli of the activity?</i>	
6	<i>Expresses extreme mood swings;</i>	
7	<i>Has outbursts of laughter, crying, and anger during activity and cannot control them;</i>	
8	<i>Does the child express fears in dramatic play?</i>	
9	<i>Does he cry easily, and unnecessarily during the activity?</i>	
10	<i>When performing the activity looks excessively scared;</i>	
11	<i>Does the child tend to look restless during the activity?</i>	
12	<i>Does the child tend to shout often?</i>	

C. FUNCTIONING OF THE EGO

a/a	C. FUNCTIONING OF THE EGO	ASSESSMENT OF CONDITION REMARK
1	<i>Does the child tend to create imaginary companions during the activity and converse with them?</i>	
2	<i>Does he have difficulty separating the imaginary from the real?</i>	
3	<i>Are you particularly impulsive during activity?</i>	
4	<i>Is he reluctant to try new things in the activity?</i>	
5	<i>Does he tend to talk out loud to himself?</i>	

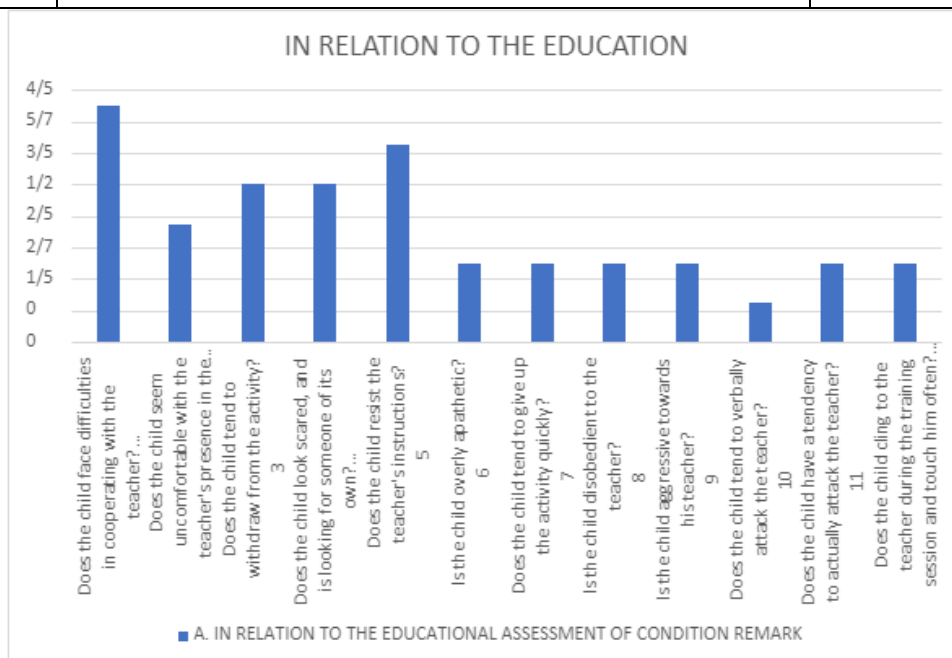
6. Evaluation – Results

6.1.1. Results

THE KEY OBSERVATION BEHAVIOR DEVELOPMENT OF DISTURBANCE
Key observation behavioral developmental disorders: Cohen, Stem, & Balaban (1995) was given to 11 teachers and the evaluation results, which emerged and recorded the behaviors of the students, are as follows:

a) In relation to the teacher

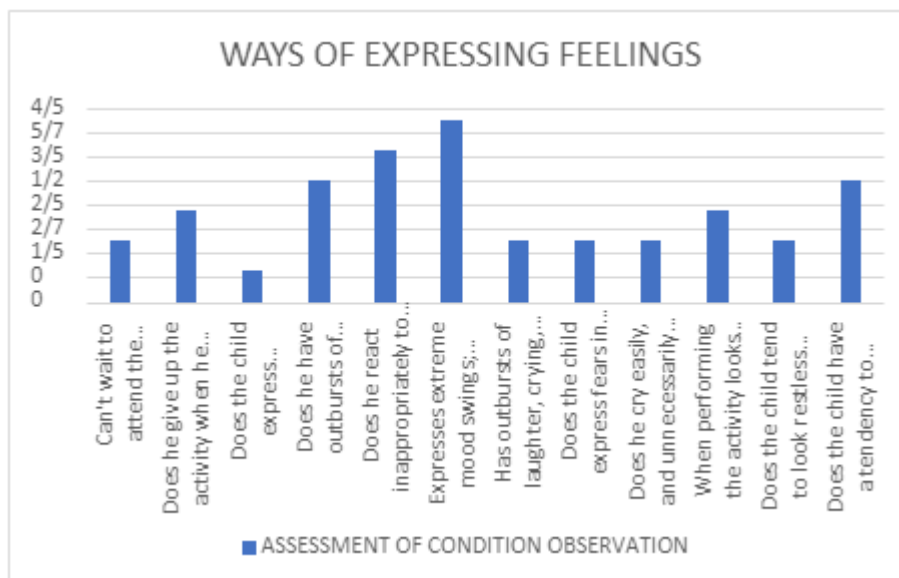
A. IN RELATION TO THE EDUCATIONAL		
a/a	Question	ASSESSMENT OF CONDITION REMARK
1	Does the child face difficulties in cooperating with the teacher?	3/4
2	Does the child seem uncomfortable with the teacher's presence in the room?	3/8
3	Does the child tend to withdraw from the activity?	1/2
4	Does the child look scared, and is looking for someone of its own?	1/2
5	Does the child resist the teacher's instructions?	5/8
6	Is the child overly apathetic?	1/4
7	Does the child tend to give up the activity quickly?	1/4
8	Is the child disobedient to the teacher?	1/4
9	Is the child aggressive towards his teacher?	1/4
10	Does the child tend to verbally attack the teacher?	1/8
11	Does the child tend to attack the teacher?	1/4
12	Does the child cling to the teacher during the training session and touch him often?	1/4



Observing the results of the observation, it is found that the students present difficulties in social relations - relationships with the teacher (1, 2, 5), and the most important thing is that half of the students move away from the activity and look scared (3,4).

b) In relation to the way of expressing their feelings

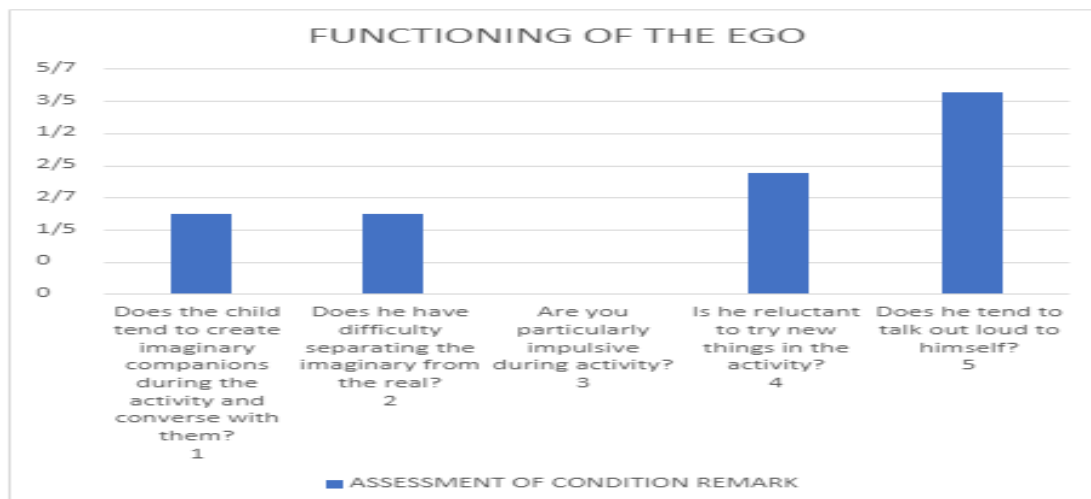
B. WAYS OF EXPRESSING FEELINGS		
a/a	QUESTIONS	ASSESSMENT OF CONDITION REMARK
1	Can't wait to attend the activity?	1/4
2	Does he give up the activity when he feels that he is not succeeding?	3/8
3	Does the child express anticipation of disasters?	1/8
4	Does he have outbursts of anger during the activity?	1/2
5	Does he react inappropriately to the various stimuli of the activity?	1/2
6	Expresses extreme mood swings;	5/8
7	Has outbursts of laughter, crying, and anger during activity and cannot control them;	3/4
8	Does the child express fears in dramatic play?	1/4
9	Does he cry easily, and unnecessarily during the activity?	1/4
10	When performing the activity looks excessively scared;	3/8
11	Does the child tend to look restless during the activity?	1/4
12	Does the child tend to shout often?	1/2



The majority of students show mood changes (4,5, 6,7,12) as well as reactions of fear, abandoning the activity (3,8).

c) With the functioning of the student's "EGO":

C. FUNCTIONING OF THE EGO		
a/a	C. FUNCTIONING OF THE EGO	ASSESSMENT OF CONDITION REMARK
1	Does the child tend to create imaginary companions during the activity and converse with them?	1/4
2	Does he have difficulty separating the imaginary from the real?	1/4
3	Are you particularly impulsive during activity?	0
4	Is he reluctant to try new things in the activity?	3/8
5	Does he tend to talk out loud to himself?	5/8



Concerning themselves, the answers that record the majority of students addressing themselves stand out (5) and are reluctant to experiment with new things in the activity (4).

Conclusions - Perspectives Conclusions- Perspectives

Studying the above results shows that the key to observation by recording the behavior of the students towards the teacher and himself but also the manifestation of his emotions, conclusions are drawn and information is recorded that together with other data collection tools will help the teacher or the researcher to design an A student's individualized education program to train him/her in deficit areas or behaviours. Moreover the combination of the above with digital technologies in education domain, could be very productive, successful and facilitates and improves the educational procedures via Mobiles [16-25], various ICTs applications [26-66], AI & STEM [67-81], and games [82-88]. Additionally the combination of ICTs with theories and models of metacognition, mindfulness, meditation and emotional intelligence cultivation [89-115] as well as with environmental factors and nutrition [12-15], accelerates and improves more over the educational practices, results and the design of personalized educational procedures.

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