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Creating a Mediating Literacy Environment for Children with Autism - Ecological Model

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1. Introduction

Positive long-term outcomes for individuals with autism spectrum disorders are strongly correlated with social communicative competence (National Research Council, 2001). Thus, when developing a comprehensive educational program, intervention should be across everyday social contexts and a range of social partners', not just the initial teaching situation. Although a range of methodologies call for the implementation of supports at specific times of the individuals day, vulnerabilities in social communicative competence are evident across every activity, every social partner and every social contest (Rubin et al, 2009. P-195). Literacy in this broad sense is a vital tool for students with autism to understand their life-environment and integrate in the community as adults (Alberto et al, 2007). Therefore we extend the meaning of "literacy" in the context of autism beyond the ability to read and write texts, to the more fundamental processes of production and reception of information between the individual and the environment, which fulfill communicational, social, educational and recreational needs. Theoretical literature emphasizes visual perception as a major way of learning for students with autism, and is crucial in the development of literacy.

Interest in the literacy experiences and achievements of children with autism is relatively new. The impetus for this interest has evolved from a variety of sources, including the inclusion of more children with atypical levels of disabilities into the general education schools (Kaderavek and Rabidoux, 2004, p-237). Despite the increased attention directed to promoting literacy for inclusion, we currently have limited theoretical and practical models. The goal of this chapter is to present a working model that illustrates the process of constructing a visual literacy environment in an inclusion program at a school for autistic students over the course of five years. The model development is the product of a systematic thought process and it has important contribution in a few fields:

1. The educational model is the main outcome granted by the school to the Special Education system. The model can be easily replicated as a consequence of the methodological display of its components.
2. A common language: the educational model insures that the communication will be based common use by of the of teaching methods by the school staff.

3. An ecological system vision: the long term systematic development enables the study of the pattern of links and that exist between the different elements in the school.

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2. Methodology

2.1 Research method

Case study is a common array in qualitative research. According to Stake (Stake, 1995), when the research goals are the understanding of human experience, case study is the appropriate method. Stake notes that the most interesting cases in education and social studies are of people who operate within interactive organizational settings. In this study, the organizational setting is an entity with boundaries that are set by a given timeframe – the timeframe is five years of learning. The place – the place investigated is the Ofer Special Education School for children with autism. The participants – the participants are all the participating professionals, the families of the students and the community at large. The change presented in this article is a complex change. Vosniadou and his colleagues (Vosniadou et al., 2001) claim that change processes occur gradually. The investigation of a long-range ethnographic case makes it possible to follow the gradual change processes, define the change and gain an insight to those the professionals working within the educational system. The choice to investigate pedagogical change in a special education school is due to a number of reasons: the first one is that it is possible to learn from this school since it is an experimental school. In addition, an investigation of this kind of school makes it possible to present a comprehensive description including a large number of details, thus enabling us to gain new insights. Finally, as Shulman notes (Shulman, 1986), case study is appropriate for educational research when the situation is complex and when it is difficult to operate a methodology of controlled variables within the given situation.

Ethnography – This is a scientific field dealing with the study of the customs of a single society. The ethnographic approach is focused on direct personal observation of social behavior within a specific culture in terms that are as close as possible to the way that the members of that particular culture perceive the world (Geerts, 1973: 1983). Ethnography was chosen as the methodology for this study due to various reasons: first, ethnographic research requires a wide, in-depth and comprehensive view, as much as possible, while stressing what is called in research "self-explanatory understanding". Schutz (Schutz, 1971) stresses that the self-explanatory understandings turn into social and cultural understandings manifested in the context of that particular culture only. The current study focuses on the development of a social culture within an educational organization for students with autism. Secondly, the ethnographic methodology makes it possible to focus on interactive systems and on processes related to behavioral patterns in situations involving complex psychological dynamics (Manor-Binyamini, 2010). It can be assumed that the development of the topic investigated follows the definition of complex psychological dynamics. Thirdly, this methodology, requiring a long range daily involvement in the research field, make it possible to use "Thick Description" (Geerts, 1973), i.e. a rich description of reality.

2.2 Research process

The study presented in this article followed the work of approximately 70 professionals as well as 90 students and their families at a special education school attended by students with autism at the age of 6-21. The study conducted between 2004-2009 made use of interviews, observations, documentation of interdisciplinary team meetings and videos of lessons. The data collection was made in a number of centers: the students, the school, the parents and the community.

2.3 Research tools

Interviews – The type of interview used in this study was a semi-structured interview. The advantage of an interview of this type is that it is guided and focused according to the topics associated with the research goals, and at the same time, it makes it possible for the interviewee to have the freedom of wide range responses. In addition, this type of interview makes it possible to effectively utilize time. This type of interview is methodical in its essence and it makes it possible to compare the responses of different interviewees (Zabar Ben-Yehoshue , 1999). Another major/important point is that an interview of this type is most suitable for the clarification of a research question that does not focus on the actual existence or non-existence of the objective reality but rather on the meaning given to it by the person investigating. The interviews were narrative. The interviewees were educators, aides and parents. Each interview lasted approximately one hour. All interviewees were asked the same questions and all of them expressed their consent to participate in the study. The interview and the observation are the main data collection tool in qualitative studies (Friedman, 2005).

Data collection through observation included approximately 30 observations of lessons that took place in each classroom once a week. The population present at the lessons were the teacher, the aides and the students. The aides were instructed on how to work during these lessons.

At addition to observations of lessons, video recording were made of approximately ten lessons at different classrooms in the school. Video recording make it possible to see the participants' body language, the classroom atmosphere as well as the communicative and behavioral aspects, such as: gestures and the students' initiative beyond the words pronounced during the lesson. Video recording are an additional source of information

The study has also recorded approximately 40 meetings of the interdisciplinary team / the educators on this topic. The meetings were documented throughout the five years of the study. Each meeting lasted for approximately two hours and regularly took place on Tuesdays. Each meeting was attended by the school's entire multi-professional team. The meetings were part of the team's institutional learning courses each year.

2.4 Analysis of the data

Analysis of the data was based on the processes of grounded theory. This analysis included three phases:

The first phase of the analysis – initial analysis. It started with the ongoing reading and observation of the research materials collected. The reading and observation activities were conducted by the two researchers and an additional professional. They read and observed all the research findings individually. In addition, three meetings took place, during which a joint analysis of the interviews was made. Also, each of the researchers observed on her own the lessons that had been recorded, while focusing on the participants' body language and the

classroom atmosphere. The goal of the ongoing and complete reading and observation was to provide us with a wide and comprehensive orientation without losing the context of the data (Dey, 1993; Charmaz, 2000). At this phase, we divided the data into data segments, each of them serving as a 'meaning unit'. Each 'meaning unit' was a segment of data that dealt with a certain topic. We named each of the meaning units by names that reflected the name of the segment. The names were as close as possible to the language of the population investigated, involving almost no conceptualization, without attempting to find a common denominator with equivalent meaning units. At this phase, we carefully examined the data, verbatim, line after line and sentence after sentence. In each line, we asked what the topic of the line/sentence was – without losing the whole picture of the entire information.

The second phase of the analysis – mapping analysis. We examined each meaning unit that we had created in the initial analysis as well as the names accompanying them, and we searched for the connections and/or relationships existing between them. We formulated categories and sub-categories by combining meaning units having the same topic and giving the same name to all the units that had been diagnosed as having the same topic. These meaning units were identified as belonging to sub-categories, and later on, to one category (Pidgeon & Henwood, 1996). We made comparisons while searching for relationships between the meaning segments, and searching for associations between the categories. In addition, we combined categories into themes.

The third phase of the analysis – focusing analysis. At this phase of the analysis, we focused the categories and the data segments attributed to them into a coherent explanation for the themes and we analysed them. The product of this phase is the ethnographic model that will be presented later on. Since the study is ethnographic, we analysed the findings of the study. The research team presented the findings to the entire school team throughout the years of research and received feedback from them.

3. Findings

It is possible to present the research findings in a summarizing model. We will present the model and explain each of the spheres involved in it, including examples that will demonstrate the practice existing in the school that is being investigated (See figure number 1)

The model is as follows:

The model presented consists of three spheres:

The first sphere, which is the external sphere, is focused on the participants of the educational activity. They include the following: students-classroom, family, school and community. The second sphere, which is more internal, presents three major themes upon which the school work is based. These themes are as follows: literacy, inclusion and mediation (this sphere is the basis for the school work and we will therefore discuss it at length in this article). The last sphere, which is the most experienced internal developmental transition present throughout the years by the students of this school starting from first grade up to the transition into the community. This sphere has five types of Transition Phases.

3.1 The first sphere

Details on the population taking part in the educational activity

Student/classroom – The school population has on the autism spectrum disorders varying degrees of intellectual disability – from mild intellectual disability to intermediate

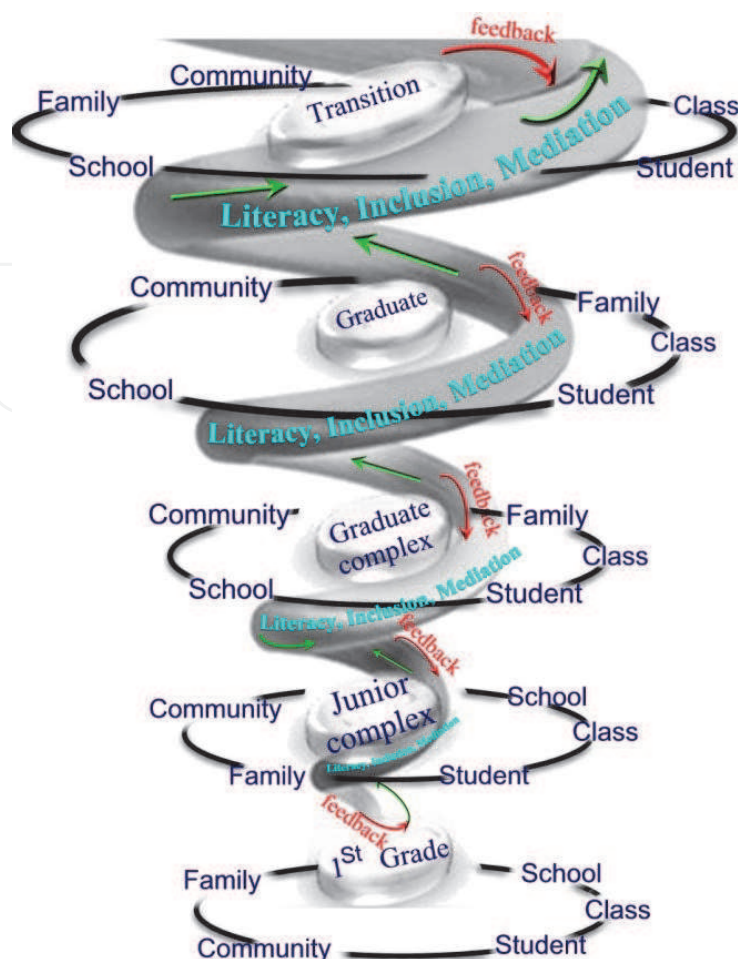


Fig. 1. Mediating Literacy Environment for Children with Autism- Ecological model

intellectual disability. The main diagnosis of the students is autism. Approximately 50% of the students are non-verbal. Approximately 80% of the students are assisted by Augmentative and Alternative Communication (AAC) at varying levels of complexity. Approximately 85% of the students acquire reading skills with the help of PCS symbols. Some of them make progress towards the acquisition of phonetic reading.

The classroom - There are approximately 13 classrooms in the school. Each class has approximately 8 students. There is a teacher and an aide in each class. Each class has a homeroom teacher and complementary teacher. The school has a school syllabus from which the team assembles the classroom syllabus at the beginning of each school year. In addition, the classroom team prepares the IEP for each student, which is based on the strength and needs according to the school and class syllabuses. The IEP is written in collaboration with the family, the group home (in case the student that lives outside the family home), additional caregivers within the community, if there are any, taking into account the difficulties and needs of the family. The discussions on the students/class progress are conducted with the multi-professional team which includes the class educational team, the aides, the Para-medical, professional and care-giving team.

The school - The school investigated was founded 15 years ago. It was recognized as an experimental school by the Department of Experimental Schools, Ministry of Education, Israel. At the time of the study, there were approximately 90 students learning in eleven homerooms. The team includes 70 persons (including administrative personnel). The school

operates for eleven and a half months during the school year, five days a week between 8:00 am and 4:45 pm, and on Fridays between 8:00 am and 12:45 pm. There is an additional activity in school operated by the Alut Club (Alut – The Israeli Autism Society) on days when there is no activity conducted by the Ministry of Education (on holiday eves and holiday breaks). 25% of the students are girls and 75% are boys. 30% of the students live in group homes outside their family homes. The age of students is between 6-21. They are divided into two age divisions: the younger division (age 6-13), the older division (age 13-21). The divisions are distinguished according to the level of the contents being taught as well as the emphasis on daily activities. For example: emphasis within the older division is on the inclusion in work within the community. The school provides ongoing training and guidance of teaching interns as well as student/teachers and para-medical professions. The school is a regional school accepting students from approximately ten districts. In addition, the school accepts students from a variety of cultural backgrounds (secular, religious, Jewish, Christian, Muslim and new immigrants from different countries).

The family – According to professionals, the role of the school is to create a sense of parental capability and equip the home with tools that make it possible to cope with the students in their home as well. The school is attentive to the needs of the families. It accompanies the families with the help of the school's educational, care-giving and medical (pediatrician, psychiatrist, neurologist) team. A social worker and psychologist are available in the school for the parents, helping them to cope throughout the years of study in the school.

During the experiment, the team became aware of the great importance of the family's involvement in the students' educational and therapeutic progress. Therefore, several family workshops have been developed. These workshops are intended to provide the enormous needs of the families and to strengthen the dyadic contact between the parents and their children. In addition, the team members became aware of the significance of the relationship between the siblings of children with autism, and the need to provide support to the siblings as well. (See details later on).

The community – The community includes all the entities with which the students are in contact with outside the school, such as: inclusion schools, the Children's Library at the University of Haifa, the Art Museum, the IDF (Israel Defense Forces), dentists, residential facilities within the community, workplaces etc.

3.2 The second sphere

As can be seen in Illustration No. 1, this sphere is the base of the school activity, and therefore we are going to discuss it in-depth. The experiment involved three major topics throughout the five years of the research duration: literacy, inclusion and mediation. Throughout these years, it was possible to follow the three themes and the way that they were structured into the school work. We are going to present each theme including examples in each of them.

Literacy

Literacy is a communicative tool for students with autism. Literacy within the school investigated includes a variety of visual means, including visual reading, the global identification of words and graphic symbols assisting the students decipher the environment in which they live and act in it according to acceptable codes. Table No. 1 presents the literacy centers in school in regard to the transition stages. We stress that for each age group, there are adjustments made according to the students' level and ability.

Transition stages	Alternative supporting communication	Reading & writing	Listening & speaking	Genres
Entering first grade		Emphasis on different reading methods and adjusting them for the school students. Using accepted symbol system to produce written communication	Responding to initiated communication	Following directions
Younger age group		Attempting to teach phonologic awareness and not only logo-graphic awareness. Writing the alphabet Writing words and expanding the written vocabulary	Responding to initiated communication. Initiative for communicative social interaction	Greetings Songs Short story Fables
Older age group		Emphasis on the use of global words (identification, comprehension of meaning, ability to choose a word and use it in daily living. Writing words and expanding the written vocabulary. Writing sentences, if possible.	Responding to initiated communication. Initiative for communicative social interaction. Initiated participation in learning processes and social processes	Newspaper? Advertisements in all of the media channels. Supermarket list. Invitation. Note. Announcement.
Preparing to go into the community		Guiding the community on the topic of autism, the importance of visual support, and the existing tools intended to improve the students' comprehension and expression. The communities learn about the tools and structure the environment for the students.		

Table 1. The Literacy Centers in Each of the Transition Stages

Inclusion

The model guiding the experiment in the school investigated is the ecological model. This model assumes that the student is not the source of the problem, and that therefore he/she is not the only change agent. Therefore, in order to create change in the quality of inclusion, the school team should carry out the change – the adjustments required – within the close and faraway environment, assuming that this change would affect the student's functioning. This means that the goal of the school is that the community carrying out the inclusion (the nuclear and extended family) the homeroom class in special education, the inclusion class, the class given at the community center, the Sick Fund physician, the residential place, the workplace etc.) will eventually be able to take up the school's role in guiding the student and in assisting him/her in the best and safest absorption into it while providing support and guidance by the school team. Due to the awareness of the difficulties involved in the field and the desire to make the inclusion process more effective for the school students as well as the teacher and students in the regular schools, a new role has been created in the school – the coordinator of inclusions. The position of the coordinator of inclusions involves the following:

- The preparation of the teacher and students carrying out the inclusion prior to the arrival of the students with autism at the inclusive setting.
- Follow-up of the students' progress and guidance of the teacher carrying out the inclusion throughout the inclusion process.
- The formation of contact between the homeroom teacher carrying out the inclusion and the homeroom teacher of the student being included for the purpose of adjusting the teaching materials, the continuation of work within the classroom and the provision of assistance to the team carrying out the inclusion.
- Ongoing training for the aides carrying out the inclusion on behalf of the school.

According to the analysis of the research findings, the way in which the school team perceives the inclusion within the community is that first of all it is related to the inclusion of the students within their **homes**, and with **the students' family members**. The school's role is to create a sense of parental capability and equip the home with the tools required to cope with the students at home too. The school attends to the needs of the families. There are support groups (parents, siblings) and a variety of dyadic workshops (agriculture, leisure time) intended to serve as support as well as enrich the parents' toolbox.

There are different types of inclusions in the school intended to "adjust" the "appropriate attire" to each student, out of the awareness that inclusion is important and that the students are capable of being in an inclusion setting. The school assumes responsibility and it mediates between the various inclusion spheres since the inclusion activities require collaboration between the classroom teams, between the school teams and the teams outside the school as well as between the parents and the school team. Details of the inclusions existing in the school are given below. Table No. 2 presents the nature and spheres of inclusions existing in the school in the transition phases.

Mediation

Mediation in the school is manifested in making the environment accessible to students with autism. During the years when the experiment was conducted, the school professionals perceive the concept of making the environment accessible by including the following elements:

Transition Phases	Inclusion Forms	Inclusion Spheres
Entering first grade	Forming a class within a new setting	Inclusion within the classroom's students Dyadic activities in collaboration with parents and under the guidance of a music therapist.
Younger age group	Learning inclusions Social inclusions Parties for age groups Going out into community public institutions (university, museums, supermarket etc.)	<ul style="list-style-type: none">• Inclusions within the school – the students learn outside their homeroom classes, i.e. they are placed in other classes according to their level, ability and fields of interest. For example: a student who likes English and this subject is not being taught in his/her homeroom class, is placed in another class during English lessons.• Inclusions in regular schools in a variety of subjects (Hebrew, mathematics, English, computers, art, music, gym etc.).• Inclusions within the school – students from regular schools arrive at a lesson/therapy in the school.• Inclusion of a student in another class – outside his/her homeroom class.• A variety of therapies given to pairs of students (art, music, movement, yoga, animals, communication etc.).• Mentoring activities: one student serves as a mentor to another student;• An older age group class serves as mentors to a younger age group class. This mentorship serves as a way to learn to assume responsibility, to be able to provide explanations, accompaniment and assistance to others. (It is important to note that sometimes inclusion starts as full mentorship provided by the older student to the younger one, and as the process continues,

		it is possible to see how both of them grow, and at the end – there is no difference between the mentor and the trainee).
Older age group	Learning and social inclusions Parties for age groups Going out into community public institutions (university, museums, supermarket etc.) Workshops: jewelry, chorus, orchestra Preparation for going out to live in group homes Inclusions within the workplace	<ul style="list-style-type: none">• Inclusions in regular schools in a variety of subjects (Hebrew, mathematics, Bible, English, computers, art, music, gym etc.).• Inclusions within the school – students from a regular school arrive to lessons/therapy within the school.• Inclusion of a student in another class – outside his/her homeroom class.• A variety of therapies given to pairs of students (art, music, movement, yoga, animals, communication etc.).• Mentorship activity; one student serves as mentor for another student; an older age group class serves as mentor for a younger age group class.
Preparation to go out into the community	Providing guidance to the community carrying out the inclusion on the topic of the autistic disorder, the importance of visual support and the tools existing for the improvement of the students' comprehension and expression. The community learns how to use the tools and structure the environment for the students.	

Table 2. The nature and spheres of inclusions existing in the school in the transition phases

1. An environment that is clear and structured for the student, based upon literacy means due to being familiar with the characteristics of the autistic disorder, and the visual channel being the strength of these students.
2. A safe and familiar environment that minimizes anxiety.
3. An environment that enables the students to express themselves and is responsive to them, i.e. it is flexible enough to "follow" the students.
4. An environment requiring that the students utilize their potential, i.e. an environment presenting challenges and new situations to the student and encouraging them to adjust.
5. An environment that provides the students with the tools to adjust and gives them the time required to adjust safely and successfully. The team enables the student to have the

experience, make mistakes, ask and request help prior to helping the child. According to this perception, doing things rather than letting the students do it themselves would only serve the short-term goals for the students but would cause long-term damage. Mediation helps students understand and internalize the material studied.

Based upon this definition, the work carried out in the school as part of this experiment, as observed and documented during the year of the research simultaneously, by each of the participants was as follows:

1. **On the student and class level** – teaching communicative tools, the way to act within the family and community, and coping with transitions, difficulties and frustrations. As part of the initiative, the students are provided with literacy tools required for communication (communication boards, social stories, behavioral codes etc.). Unlike other schools that teach literacy for the purpose of obtaining information and enrichment, the teaching of literacy at the Ofer School is not only the goal but mainly a means of achieving communication – for the purpose of improving the students' comprehension and expression.
2. **On the team level** – professionalism on the topic of autism, the implications of this disorder, the characteristics of learning and the ways to bypass the communication and language difficulties. Learning occurs within workshops and team meetings through the literature review of articles, joint learning, the teaching of colleagues etc.).
3. **On the family level** – Guidance and consultation, participation in professional workshops given to the educational team, empowerment of parental capability, active participation in the school activities. Full participation of the family in the work process, guidance by the educational and therapeutic team, dyadic workshops, workshops for siblings and sending supportive communication cards and teaching materials to the students' homes. Continuous updating through the school website and forum – it is difficult for many parents to go out when their son/daughter is home, and therefore, many parents do not participate in meetings, courses and parent-teacher meetings. The school website and forum serve as an important tool in maintaining contact with the school: the forum provides professional answers to parents' questions. There are many links on the school website to other websites on autistic disorder and there is a database of symbols for home use by the parents.
There is ongoing contact with **residential settings outside the home** (group homes and workplaces within the community) according to need.
4. **On the community level** – Guidance and consultation (on autism, the implications of this disorder, the characteristics of learning and the ways to overcome the communication and language difficulties), accompaniment of the settings carrying out the inclusion (the principals, teachers and students) – prior to, during and after the completion of the students' studies at the school, being in touch with additional educational settings prior to the students' entrance into school (kindergartens, schools), presenting the school work model: in professional conferences dealing with autism, communication and literacy, participation in a number of experimental schools on behalf of the Department of Experimental Schools, Ministry of Education, Israel, establishing district courses in educational settings for students with autism in order to expose the work method practiced in the school and provide instruction to educational and therapeutic teams, hosting the visits of university students studying in the departments of communication and special education of the universities and colleges in the region, instruction of special education and communication interns studying at the universities and colleges in the region.

Transition Phases	Literacy means to making the environment accessible	The importance of accessibility for students with autism
Entering first grade	Structuring the daily agenda with words or alternative supportive communication. Dividing the lesson into defined and measurable units; beginning, middle and end. Providing details of the products expected at the end of the task (for example; two worksheets; gluing 10 labels continuously; inserting cards into 20 envelopes etc.). Preparing ahead of time to anticipated changes (for example: a substitute teacher, going out on a trip, a guest arriving at the classroom) through the use of symbols and social stories.	Concern over the unknown and unexpected make the students with autism feel tense and distract them. A change in their daily routine (even change that is perceived by us as being "a change for the better") can cause emotional turmoil and anxiety. Structuring the daily agenda visually at the beginning of each day, clarifying what is to be expected every hour and every lesson, and preparing the students ahead for time for each change helps calm them down and enable them to focus on the task ahead of them.
Younger age group	The "Café Ofer" menu – the students order drinks and food from the waiters by using menus with symbols. Defining the behavioral rules in inclusion while using clear rules or symbols for the purpose of clarifying what is expected from the students who are going through the inclusion process: what is allowed, what is prohibited, recess time, when inclusion begins and ends.	The use of menus makes it possible for students experiencing difficulty in speech to realize their right of choice and reduce their dependence upon the accompanying teacher/aide. Clear behavioral rules reduce anxiety and help the students understand what is to be expected of them at the place that carries out the inclusion process.
Older age group	The "Café Ofer" menu – the waiters receive orders from students who experience difficulties with speech through the menu that includes symbols. The use of a menu with symbols at the dining room – each student orders his/her lunch from the menu. The work rules or behavior rules expected at the place of inclusion are presented ahead of time and placed in a location that is accessible to the students. Defining the beginning and end of the work, the daily agenda and the production expected (in school or at	The use of menus – the waiters mediate to their colleagues rather than the teaching team.

	the workplace) – all of this is done through the use of visual cues that the students are able to comprehend.	
Preparation to go out into the community	<p>Prior to the inclusion process, the community learns about the purpose of having the environment structured for students with autism and its importance for utilizing the students' potential.</p> <p>This is a WIN-WIN situation: the community gains a person who is less dependent. The community is capable to cope with the difficulty on its own, and the students gain a community that includes them due to being willing rather than by being coerced to do so out of the Special Education Law.</p> <p>As the inclusion process proceeds, the school representative fades out and transfers the responsibility for structuring the environment and mediating the environment to the students and to the representatives of the community carrying out the inclusion.</p>	

Table 3. Mediation as a means to making the environment accessible

- **A Dictionary of Symbols** has been developed by the school, the goal of which is to enable the multi-professional team to use a uniform language in all of the classes and age groups. The use of a uniform language is essential mainly at the time of transition from one class to another, between age groups, between different teachers and upon going out into the community. The uniformity of symbols makes it possible to have a continuum. It leads to uniformity for both the team and the students.
- Clarification: additional means for the accessibility of the environment are added at each age group – this is done in addition to continuing the use of the means learned in the earlier classes according to need and the extent of detail that each student requires.

The third sphere – as can be seen in the illustration, No. 1 forms the inner sphere of the school work and it represents the transitions. The professionals perceive the transitions as a continuum of learning and development in regard to each student starting from the first day in school up to the age of 21. According to this perception, the school team establish a transition plan. We are going to expand the discussion on two major transitions for the family and the students: the transition from kindergarten to the Ofer School, and the transition from the school into the community. The reason for the focus on these two transitions is as follows: the first grade is the entrance into school. The class resembles a kindergarten setting at the beginning of the year. During the year, the students acquire learning habits and a school

setting. The students begin to take part in the activity of the entire school. In the second grade, the students move to a phase in which they are part of the school and then, they start going out to inclusion within the community. The difference between sixth grade and seventh grade is in the contents of their studies and in the topics emphasized. The focus starts to be on the anticipation towards the training for adult living as well as working and living within the community. This includes functional relatedness to the academic lessons such as reading (for example: reading a recipe, writing a supermarket list), arithmetic (for example: the use of money and , reading the clock and telling the time of day.) and civics (receiving an Israeli Identity Card is one example).

A practical description of the two programs is as follows:

The program of the transition from kindergarten to school:

- a. Inviting the kindergarten children to activities throughout the school year.
- b. Inviting the parents of the kindergarten children to an introduction meeting with the school.
- c. Prior to the arrival of students from kindergarten to first grade, the school team receives the child's file from the kindergarten teacher (diagnoses, observations) – and the entire information enters the school at the same time. The relevant information is also transferred to the social worker in the municipality. (According to the Privacy Protection Law, the transfer of information is made only following the parents signed written consent).

The program of transition from school to the community:

- a. An occupational team has been established in the school. This team includes an occupational therapist, professional teachers and an educational team of the older age group which has prepared a study array for the students towards going out to work within the community.
- b. Instruction and accompaniment for the students when they go out to a workplace that is suitable to their ability and fields of interest. There is instruction and accompaniment at the workplace by the educational team on behalf of the school. The instruction of the team includes explanation on the essence of making the environment accessible to the students through the use of literacy means and the provision of tools for the right accessibility.
- c. As part of the learning of occupation and work experience, the "Café in School" was established. The students learned about the management and operation of a Coffee Shop in a theoretical and practical manner. The food at the Coffee Shop was prepared and served by the students. The Coffee Shop served the students and the team once a week. The students' parents are invited during events that take place at school to sit at the Coffee Shop and enjoy what their sons/daughters had prepared.

4. Discussion and summary

The discussion will focus on the contribution and limitations of the model presented in this chapter. This model has a number of theoretical and practical contributions:

- a. This model demonstrates that children with autism as well as children with multiple-problems and complex disorders develop to a great extent according to normal developmental stages. As the environment would make it possible to have a variety of options and would adjust to the student instead of expecting the student to adjust to the environment, so would the students' development be better and their inclusion within society would be of greater quality.

- b. The model developed at the school shows that a comprehensive educational environment that applies a variety of therapeutic methods, i.e. an environment that is familiar with a wide variety of treatment methods of autism and that knows how to make an educated decision that is suitable to the needs of each student (rather than work according to a single method) in a flexible manner in the learner's natural environment, advances the learner's development.
- c. Some of the activities that have taken place at the school throughout the years of the research are group activities (unlike one-on-one work). In other words: the school setting makes it possible to establish groups of students according to subject, age, the students' fields of interest. This is impossible to do in a one-on-one intervention.
- d. In the practical aspect, the model serves as a contribution to the inclusion of students with autism within schools that carry out the inclusion since it can be implemented in schools that are inclusive.
- e. The study and the school's entrance into a research-based experimental process lead to the development of a professional team. This kind of team asks questions and is aware of the need for different solutions for both the individual student and for the same student during the different spheres of his/her life.
- f. The research work along the work at school leads to the development of a multi-professional team possessing professional humility and collaboration with the parents.

4.1 Limitations of the study

The model presented does not provide an answer to multi-cultural conditions, to immigrants from Russia, to Arab children, to differences in culture. This is a topic that needs an answer. There are several students of Ethiopian origin in the school. There are Arab students in the school where the school has no interaction/contact with their communities. There are also Ethiopian children for whom there is no knowledge or tools for cultural issues and challenges that a child with autism would raise in this community, and the same is true for the religious community.

It would be desirable to expand the work and research on this work with the family, starting from the nuclear family and the extended family. Following this study, the need to expand the work model with the nuclear and extended family was raised. This topic was raised during meetings with parents who pointed out the challenge that they are facing from the moment that their child is diagnosed as being on the autistic spectrum.

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Autism spectrum disorders are a major topic for research. The causes are now thought to be largely genetic although the genes involved are only slowly being traced. The effects of ASD are often devastating and families and schools have to adapt to provide the best for people with ASD to attain their potential. This book describes some of the interventions and modifications that can benefit people with ASD.

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