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**The Association between the Ecological Concept,  
(Professional Interpersonal Communication,  
Organizational Professional Efficacy) and Perception  
of IEP Building, and Student Progress: Comparison  
between Multidisciplinary Staff in Special Education  
Preschool for Children with Developmental Delays  
and Preschool for Children with ASD**

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## **Abstract**

**The main aim of the study** was to examine the relationship between the ecological perception (professional interpersonal communication, organizational professional efficacy) and the perception of the Individual Education Program (IEP) as a mean for formulating mutual goals and student progress: comparison between multidisciplinary teams in preschools for children with developmental delays (DD) and in preschools for children with autistic spectrum disorder (ASD).

The ecological perception focuses on human development through relationship patterns between the individual and his environment and environmental factors (Bronfenbrenner, 1977, 1979; Landesman-Ramey et al., 1996; Shogren & Turnbull, 2006). The ecological perception is reflected in patterns of relationships between team members in organizations (Bronfenbrenner, 1979). In special education settings, this perception is reflected in professional interpersonal communication and organizational professional efficacy. These abilities are crucial for cultivating the quality of life and formulating satisfactory mutual IEP goals for the school day for the population with special needs (Arias et al., 2018; du Plessis et al., 2020; Friend, 2000; Igel & Malichi, 2007; Regev & Reiter, 2011; Shavit & Reiter, 2016; Wright & Kersner, 1998).

**The Individual Education Program (IEP)** is a framework for planning work with students according to their personal needs. IEP goals are based on children's function in various spaces and during daily activities in the preschool, in order to enable their optimal development and their participation in diverse areas and activities. Perceptual differences between the multidisciplinary team members challenge the teams when formulating mutual IEP goals for special education preschoolers (Guralnick & Bruder, 2016; Hott et al., 2020). No studies that examined the relationship between the ecological perception and the perception of IEP among multidisciplinary teams in special education preschools were found.

The present study examined the relationship between the ecological perception in terms of perception of professional interpersonal communication and organizational professional efficacy and the perception of IEP as a mean for formulating mutual goals and for student progress among multidisciplinary teams in two types of preschools: preschools for children with developmental delays (DD) and preschools for children with autistic spectrum disorder (ASD). Students in preschools for children with DD

have not achieved developmental milestones in several cognitive fields, compared to their peer group. They have difficulty passing a standard assessment due to their age or functional status. They will therefore need a reassessment to determine the level of developmental delay after the intervention (American Psychiatric Association [APA], 2013; Choo et al., 2019). Students in preschools for children with ASD were diagnosed as being on the autism spectrum. This is a chronic neurodevelopmental disorder characterized by impairments in communication and social reciprocity, limited interests, repetitive behaviors, and deficits in the sensory regulation system (APA, 2013).

The IEP comprises an important component when preparing the work plan for these children. It is therefore important to examine the relationship between the ecological perception in terms of professional interpersonal communication and organizational professional efficacy and the perception of IEP in multidisciplinary teams that work in these preschools. These teams consist of teaching staff and health professionals.

**Method:** The participants included 209 teaching staff and health professionals: preschool teachers, speech language therapists (SLP), occupational therapists (OT) and assistants who work in two types of special education preschools: 83 work in preschools for children with DD and 126 work in preschools for children with ASD.

The research tools included three questionnaires dealing with two aspects of the ecological perception: a Professional Interpersonal Communication Questionnaire (Hoegl & Gemunden, 2001), a Collegiate Questionnaire adapted to the preschool (Gavish & Friedman, 2007), an Organizational Professional Efficacy Questionnaire (Tschannen-Moran & Barr, 2004); two questionnaires dealing with the perception of the IEP: one focusing on the formulation of mutual goals (Shaked, 2006) and one focusing on student progress (Goerge, 2018).

**The findings will be presented with reference to the study aims and its three parts.**

## **Part A: Differences in the ecological perception and in the perception of IEP of the special education preschool multidisciplinary team with reference to the type of preschool**

The aim of this part was to examine whether a difference exists between the multidisciplinary teams of preschools for children with DD compared to multidisciplinary teams for children with ASD in their ecological perception (professional interpersonal communication and organizational professional efficacy) and in their perception of IEP (as a mean for the team to formulate mutual goals and promote student progress).

**We hypothesized** that the ecological perception of multidisciplinary teams of preschools for children with DD would be higher than that of teams in preschools for children with ASD.

**Results:** Due to the large amount of data, we will present only the main findings. A two-way (2x4) MANOVA showed parallel and differential topics in the ecological perception and in the perception of IEP in the multidisciplinary teams of preschools for children with DD and in preschools for children with ASD.

### **Parallel topics in the ecological perception and in the perception of IEP between the two types of preschools**

It was found that in both types of preschools, team attitudes ranged from a tendency to positive attitudes that have not yet reached full acceptance of the ecological perception as a means of professional interpersonal communication and organizational professional efficacy. For example, the mean on the professional interpersonal communication questionnaire was  $M = 5.72$  ( $SD = 1.04$ ) on a scale from 1 to 7, where 5 = agree to a moderate extent, 6 = agree to a large extent, 7 = agree to a very large extent. The mean on the organizational professional efficacy questionnaire was  $M = 3.73$  ( $SD = 0.62$ ) on a scale from 1 to 5, where 3 = agree to a moderate extent, 4 = agree to a large extent, 5 = agree to a very large extent.

This finding can be explained using the World Health Organization's multi-professional model for collaboration (WHO, 2010). This model includes two components:

interprofessional professional education (IPE) and interprofessional collaborative practice (IPP) which were assimilated among the multidisciplinary teams in the Ministry of Education's advanced training courses. The model indicates improvement in the collaboration of multidisciplinary teams from health professions with different professional backgrounds, through shared learning and providing quality care service in all patient environments.

However, the results indicate that the teams do not yet express full agreement, and their attitudes are not completely positive for all of the questionnaire's items. Fullan and Miles' (1992) model for implementing change serves as an explanation for this finding. According to this model, the multidisciplinary teams are in the process of assimilating the ecological perception and the perception of IEP as means for formulating common goals and promoting students. However, the process has not yet been completed. This model indicates that the implementation of these changes is a long-term process, due to the fact that each educational framework needs to produce a unique solution tailored specifically to its needs. Tensions and challenges may arise between members of the interdisciplinary teams during the process of change, ranging from a desire to maintain routines and the desire for change.

### **Differential topics in the ecological perception and in the perception of IEP between the two types of preschools**

**Differences with reference to the type of preschool (for children with DD/for children with ASD):** A two-way MANOVA (2\*4) was performed and it was found that the ecological perception is higher among multidisciplinary teams in preschools for children with DD compared to those in preschools for children with ASD. These differences are explained by the three-step collaboration model (King-Sears et al., 2015; Manor-Binyamini, 2003; Pfeiffer et al., 2019). According to this model, teams in preschools for children with DD are in the "transdisciplinary" stage of knowledge. Collaboration at this level is characterized by the ability to produce a common language between all partners, while providing a holistic view of the learners' functioning. This builds a complete knowledge map about the functioning of the learners and the construction of joint treatment plans. In contradistinction, the multidisciplinary teams in preschools for children with ASD are in the "interdisciplinary" stage which is

characterized by cooperation of the multidisciplinary team in order to reach a common agreement in setting goals, but the assessment and treatment continue to be carried out independently (Friend & Cook, 2013; Manor-Binyamini, 2003; Pfeiffer et al., 2019; Shapiro & Sayers, 2003).

Additional explanations for differences in the ecological perception between the two types of preschools lie in the background variables (population characteristics, team background variables, work patterns and employment). These will be explained in the main body of the thesis.

## **Part B: Differences in the ecological perception and in the perception of IEP with reference to the role of the members of the multidisciplinary team in special education preschools**

**The aim** of this part was to examine whether differences exist in the ecological perception and in the perception of IEP with reference to the role among multidisciplinary teams in the two types of special education preschools.

**We hypothesized** that the ecological perception and the perception of IEP would be higher among the preschool teachers and health professionals than among the assistants. In the absence of studies that would point in a certain direction, we preferred to pose a research question: Will a difference be found in the ecological perception and the perception of IEP of the preschool teachers and the health professionals?

**Differences with reference to the role of team members:** We performed a two-way MANOVA (2\*4) with a post-hoc Scheffe analysis and found that the assistants' ecological perception was the lowest, compared to other professionals. These differences are explained by employment conditions and as well as by incongruence between the assistants' expectations from the role constructed during their training and the many roles they must fulfill in practice. It was further found that preschool teachers' ecological perception was higher than that of the health professionals in two factors: communication and coordination and ethical leadership (the ability to promote proper behavior among the children). It was also found that preschool teachers' perception of IEP was higher than that of the health professionals in three measures: focusing on support to advance the student, constant information gathering for IPE planning, and

evaluation of changes and adjustments according to progress. These differences are explained by differences in training, in role definition and in the scope of work of preschool teachers compared to health professionals.

### **Part C: Contribution of the participants' ecological perception and background variables to explaining the variance in the perception of IEP of multidisciplinary teams in special education preschools**

**The aim** of this part was to examine the contribution of the ecological perception (professional interpersonal communication and professional organizational ability) and the background variables (profession, level of education, general seniority, seniority within the framework) to the explained variance in the perception of IEP.

Two step-wise hierarchical regression analyses were performed in order to examine the contribution of the ecological perception and the background variables to explaining the different measures of the perception of IPE for formulating common goals, as well as the perception of IPE with reference to student advancement. In both regressions, it was found that the attitudes and values of the multidisciplinary teams towards the ecological perception in terms of professional interpersonal communication and organizational professional efficacy ( $\beta = 1.5\%-26\%$ ) are the main factor contributing to the perception of IPE as a means for formulating common goals and advancing the students. Background variables ( $\beta = 1.5\%-9.8\%$ ) explained only a small part of the perception of IPE as a means for formulating common goals and advancing the students.

#### **Theoretical contribution**

The main factors that contribute to the perception of IPE as a means for formulating common goals and advancing the students among multidisciplinary teams in preschools for children with DD and in preschools for children with ASD are **the values of the preschools: the ecological perception in terms of professional interpersonal communication and organizational professional efficacy**. However, the background variables explain only a small part of the variance.

A difference exists in the ecological perception and in the perception of IPE with reference to the role of the team members. The perception of the assistants is the lowest compared to the other members of the multidisciplinary team. This difference can be explained by employment conditions and expectations constructed during the training of the assistants and the many roles required of them in practice. In some of the measures, the perception of preschool teachers is higher compared to that of the health professionals. These differences are explained by differences in training, in role definition and in the scope of work of preschool teachers compared to health professionals.

### **Educational contribution**

It is recommended to strive to promote the ecological perception and the perception of IEP in both types of special education preschool settings (for children with DD, for children with ASD). It is recommended to create advanced training among multidisciplinary teams in both types of special education preschool settings in order to reach full implementation of the ecological perception in terms of professional interpersonal communication and organizational professional efficacy, as well as the perception of IPE as a means for formulating common goals and promoting the students. It is further recommended to improve the pedagogical function of the assistants by proper training for developing their therapeutic perception with reference to the type of population with which they work.