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**Teachers' Perceptions of Social and Academic
Competence and Self-Identity Development among
Deaf and Hard-of-Hearing Children in Mainstream
and Special Education Frameworks**

LONG ABSTRACT

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December, 2022

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ABSTRACT

This research explores the teachers' perceptions towards the inclusion of students with special needs, particularly Deaf and Hard-of-Hearing students [hereinafter – “Deaf/HoH”]. This research focuses on mainstream/special education teachers' perception of social competence, academic competence, and self-identity development of Deaf/HoH students learning in mainstream/special classes, as well as the teachers' ways of coping with the inclusion of these students into the educational frameworks. This research is conducted according to the mixed methods paradigm. Seventy-eight teachers have participated in the quantitative research. Ten teachers of the 78 participants have been interviewed, five mainstream and five special teachers who work with Deaf/HoH students in a special class designated only for them. The research tools are three questionnaires that examine the effect of including the child with special needs, the effect of inclusion on the normal child, the teacher, the acceptance of the inclusion principle and the willingness to include. In-depth semi-structured interviews were conducted with the teachers, with the aim of investigating the perceptions of the teachers who went through the intervention program regarding their involvement, authority and ways of dealing with Deaf/HoH students integrated in their regular/special class. The research has yielded three main findings. The first concerns to the importance of the intervention program for all teachers from regular and special education, which had a positive effect on the teachers' perceptions of integrating students with special needs in general and especially integrating special education students, while understanding their personal world and their needs. The second concerns the importance of training teachers from special and regular education to the resources required for optimal inclusion and imparting knowledge that will help to know and understand the special education population and their needs. The third concerns the importance of cooperation between all the teaching staff, parents and students involved in the inclusion. The factual conclusions relate to the importance of a continuous teachers' training and to the preliminary preparation of included and including students, school staff and management towards the inclusion of Deaf/HoH students in mainstream classes. To the importance of synchronization and cooperation between the including home-class teacher, the special education teacher in the special education class and parents whose children are included, and the intervention program built for this study that included access to knowledge and concrete, tangible and experiential information that helped to significantly understand the students and to change their perceptions which directly affect how they deal with it. From this, it can be said that the comprehensive intervention program developed by the researcher can contribute to better inclusion of students with special needs in general and the Deaf/HoH in particular. The Conceptual Conclusions concern the significant effect of the intervention program on the way the teachers deal with the inclusion of students with special needs out of understanding and empathy for their needs and to improve their abilities to deal with and include these students in the best possible way. Hence, the intervention program "Hear the Hard-of-Hearing" is a significant factor affecting Teachers' perceptions of inclusion. The contribution of this study is by developing an intervention program that experientially and practically demonstrates the Deaf/HoH students' personal needs, and the way of facilitating their optimal inclusion. It can constitute an inseparable part of education systems policy both in Israel and worldwide, as a means of providing teachers with theoretical and practical knowledge for optimal inclusion.

Keywords: special education, inclusion, deaf, hard-of-hearing (HoH), social competence, academic competence, self-identity.

INTRODUCTION

Research Background

This research aims to explore the effect of the intervention program on the perception of the inclusion of the teachers from the mainstream and special education, and their willingness to include students with special needs and deaf and hard-of-hearing [hereinafter – “Deaf/HoH”] students in mainstream classes. Moreover, this study examines the relationship between the learning framework (inclusion in mainstream class or learning in special class), and teachers’ perception of social competence, academic competence, and self-identity development of these students.

The researcher of this research decided to explore the inclusion of Deaf/HoH students from viewpoint of mainstream and special education teachers. She chose this topic on the basis of her interest in this population as a teacher of students aged 3-21 years old. She has been teaching this population on a regular basis for more than a decade, and understands both sides, teachers from the mainstream and special education, and the Deaf/HoH population, in particular, and the importance of fulfilling their personal needs in order to optimally include them into the natural environment in which they live.

Gap in Knowledge

Research Originality

The originality of the research is reflected in an original intervention program that was developed especially for the purposes of this research, and this in light of the existing gap in the research literature.

Specific questionnaires were selected that were adapted to the research topic and original questionnaire was developed on the subject of self-identity at Deaf/HoH, which was not used in previous studies and adds insights to the existing knowledge.

Research Aims

This research has five main aims:

1. To explore the effect of a teachers’ intervention program on their perceptions of inclusion and their willingness to include Deaf/HoH students in mainstream classes.
2. To explore the effect of a teachers’ intervention program on their perceptions of the social and academic competence of Deaf/HoH students included in mainstream or special classes.
3. To explore the effect of a teacher’ intervention programs on their perceptions of the self-identity development of Deaf/HoH students included in mainstream or special classes.

4. To explore teachers' perceptions of including students with special needs and Deaf/HoH students in particular, being a means of teachers' professional development as part of their role perception of optimal inclusion of these students in mainstream classes.
5. To explore the relationship between the learning framework (inclusion in mainstream/special classes) and teachers' perceptions regarding competence (social and academic) and self-identity development of Deaf/HoH students.

Research Importance

The importance of this research resides mainly in its contribution to the world of mainstream and special education, particularly for Deaf/HoH students in Israel and around the globe. This research enhances the understanding of Deaf/HoH students' needs as far as social competence, academic competence, and self-identity development are concerned. It assists teachers from mainstream and special education in the comprehension of the personal needs of special needs populations and Deaf/HoH students, the importance of using FM sound system along with hearing aids, and optimal inclusion of these students in their natural environment within the mainstream education framework.

CHAPTER I: LITERATURE REVIEW

I.1 Special Education in Israel

The Ministry of Education in Israel was established in 1949 and defined the role of the educator (both in regular education and in special education) as a significant educational figure responsible for an entire class while accompanying students in learning processes (Wiedislavski, 2021). The Special Education Law (Ministry of Education, 1988) stipulates that children with special needs between the ages of 03 and 21 are entitled to special education free-of-charge (Kol Zchut, 2019a; Ministry of Education, 1988).

The Law of Inclusion in Chapter D, Amendment No. 7 to the Special Education Law, stipulates that all children have the right for mainstream education in a "less restricting environment" (Byrnes, Sigafos, & Rickards, 2002, Kol Zchut, 2019b, 2019d). The mainstream classes are preferable for most students with special needs, since they constitute a center of academic and social activity, as well as a source of belonging and identity development for these students (Agran et al., 2020). A student with special needs is entitled to receive adapted teaching methods, varied learning methods, as well as therapy by different discipline experts, such as occupational therapy, speech therapy, physical therapy (Ministry of Education, 1988). The Deaf/HoH population is part of the special education system and is

divided into varying degrees of hearing disability (Kim et al., 2021; Wiesel & Zandberg, 2002).

Special Education is designed for the promotion, development, and improvement of physical, cognitive, mental and behavioral competences, as well as skills of children with special needs, in order to include them in the life of regular society and, in future, in the labor market (The National Insurance Institute, 2010). The Special Education Law is underpinned by a dynamic concept, which sees the exceptions as a fact that can be changed. A longer period of appropriate treatment may advance the children with special needs towards their integration into regular society. The goal was to include and reduce as much as possible the isolation of children with special needs, in order to facilitate their future inclusion as adults with equal rights in the society where they live (Ben-Yehuda & Last, 2004; Firsteter & Lahav, 2011). A focused and directed intervention with the aim of blurring the differences between the including and including students, while removing environmental barriers can help their optimal integration into social life (Bolborici and Bódi, 2018).

I.2 Inclusion of Children with Special Needs and Deaf/HoH in Education Systems

I.2.1 Definitions of Hearing loss

Hearing disability is defined from a functional, communicational, and medical aspect. It indicates people's degree of hearing and the way they use their auditory sense in order to develop and use the spoken language (Niv, 1987). The hearing disability is divided into hard-of-hearing or deaf disorder. It damages the regular functioning of the auditory system along the auditory pathway, from the auricle of the outer ear and up to the auditory cortex in the brain. There are three main types of hearing disability: Conductive - damage to the outer or middle ear; Neuro-sensory - damage to the cochlea in the inner ear or damage in the conduction of neuro stimulus from the inner ear to the brain; and Mixed - a conductive and neuro-sensory damage. Individuals who are deaf and hard-of-hearing [hereinafter – “Deaf/HoH”] are distinguished by the way they are defined. Audiological definition ranks the severity of the hearing disability - slight, mild, moderate, severe, and profound, while functional definition is based on the degree of using the auditory sense for the purpose of developing a spoken language and using it (Plaut, 2007; Wiesel & Zandberg, 2002).

Hearing disability can affect the entire life of Deaf/HoH children (Anderson, 2001), crucially impacting their development, their ability to establish social relationships, and the development of emotional difficulties (Eliyahu, 2007). Spoken communication is

instrumental in the establishment of social relations. Moreover, a problem in conducting a fluent dialogue might result in a difficulty to form friendship relations, leading to social isolation and emotional hardships (Anderson, 2001). Deaf/HoH children frequently experience delays in their linguistic development (Plaut, 2007). This is due to the lack of auditory stimulation at initial life stages that inhibit the spontaneous development of the children's auditory system (Dromi & Ringold-Frimerman, 1996). Children's initial relation and connection with their parents are essential and meaningful for the children's development (Hoshen & Korach, 2006). The way and extent of the parents' acceptance of their children affect the capability of Deaf/HoH children and adults to accept and cope with disabilities in a regular and healthy way, enabling them to grow personally and socially (Ministry of Education, 2001).

1.2.2 Inclusion of children with special needs in the Israeli and European Education system

The State of Israel and Western Europe countries are the most developed countries regarding special education services, legislation, and enforcement of the law in the education system (Atamni, 2013). The Israeli inclusion policy has been consolidated at the same time with the changes in the definitions of children with special needs and special education (Bar & Kizel, 2015; Ronen, 1997), that have brought about the enactment of the Special Education Law in 1988. This Law emphasized the inclusion of children with special needs in mainstream classes, while providing a "support envelop" adapted to their needs (Atamni, 2013; Ronen, 1997). In recent years, many countries around the globe have determined a policy of inclusion, containment, and integration of special needs children in learning frameworks. This inclusion policy has become more accessible to all children.

In Romania, the inclusion policy is implemented. Nevertheless, not all the schools have adopted the issue of inclusion in mainstream classes, since the inclusion of special needs children creates many difficulties and challenges (Frumos, 2018). In Italy, there is a framework of full inclusion of children with special needs in mainstream schools, while providing assistance, welfare services, and medical services. In Austria, mainstream schools have both special classes and integrated classes of mainstream and special education students. In Luxembourg, special needs students are entitled to assistance by a special teacher for up to eight weekly hours in their mainstream class. In Ireland, special needs students learn within special education framework or in a special class in a mainstream school, according to their type of disability. In Belgium, there is a special education framework, and home schooling in special cases. However, most of the schooling is conducted in a mainstream school, while

receiving support by special education teachers. In Denmark, there are options of special class in a special or mainstream school, inclusion in a mainstream class, going out to a special class in a mainstream school, or inclusion in a mainstream class with added special lessons. In England, the options are an inclusive class, special education class in a mainstream school, inclusion in a mainstream class together with a support unit outside the school, or a special education class in a mainstream school. Only in extreme cases, the learners referred to special education frameworks. In Greece, there are options of special classes, inclusive classes, individual inclusion of a single student in a mainstream class, or inclusion in inclusive campuses (Meijer & Watkins, 2019).

1.2.3 Inclusion of Deaf/HoH children in the Education system

In Israel, the need for solutions and treatment of hearing disability has become evident during the last decade and many hearing treatment institutes have been set up. With the growing public awareness of this issue, it became clear that Deaf/HoH individuals should be helped in being integrated in every social, educational, and occupational framework (Audiophone, 2017). Deaf/HoH students can be fully included in a mainstream class or in a mainstream school, or partly in separate classes; partly included in a mainstream school, or included in a separate special education system (Yonah & Ben-Asher, 2017). The Israeli education system created special classes that are accessible and adapted by means of acoustic ceiling, adapted lighting, curtains, soundproof windows and class door, gaskets on the chair legs in order to prevent movement noises, silent air-condition installation, and a special class sound system (FM). All these are designed to enable the Deaf/HOH students to be included in mainstream education frameworks (Stove & Pendegraft, 2005).

In many countries around the globe, deaf/HoH students are included as part of the education and inclusion policies. In Ethiopia, the right to education is universal (according to the Ethiopian constitution). Consequently, special schools for children with vision disability, hearing disability, and limited mental development, have been set up (Desalegn & Worku, 2016). In Romania, the education system introduced changes in the field of teaching methods that were adapted to the students' needs in both mainstream and special education. Moreover, the teachers attended in-service training courses on this issue, and this greatly contributed to the Deaf/HoH students. In Japan, the inclusion policy has developed in recent years, encouraging the inclusion of Deaf/HoH students in mainstream education. Yet, teachers' awareness of the personal needs of these students is defective and their attitudes are not positive (McGuire, 2020). In Denmark, there is awareness of the Deaf/HoH students'

inclusion in the education system. Today, as a result of the growing popularity of the cochlear implant in the country, almost all the Deaf/HoH students are learning in mainstream education in local communal schools. Most of these students have such an implant and use the spoken language without sign language (Dammeyer & Ohna, 2021). In Norway, the law enacted in the 1990s, acknowledges sign language as the natural language of the deaf. Furthermore, the government defined an inclusion policy on the basis of the adapted education concept, i.e., Deaf/HoH students are included in mainstream schools and benefit from adapted teaching and assistance according to their needs (Dammeyer & Ohna, 2021).

1.2.4 Inclusion Frameworks

In Israel, there are three main models for the inclusion of children with special needs in the mainstream education system: individual inclusion, inclusion in special classes in a mainstream school, and inclusion in inclusive classes. Moreover, there are special schools for the blind, deaf, communication-disabled, and children with a developmental mental disability (State Comptroller Office, 2013). Within the framework of individual inclusion, Deaf/HoH students are included in a mainstream class and go out for individual and personal learning according to the number of hours allocated to them on the basis of their hearing disability type (Cambra, 2002; Wiesel & Zandberg, 2002). Within the framework of inclusion in special classes in a mainstream school, the students learn in their class most of the learning hours and, in addition, are included for several hours in a mainstream class for events and ceremonies (Plaut, 2007). Within the framework of inclusive classes, a small number of disabled students learn together with mainstream students. In this class there are two teachers, one is a special education teacher and the other is a mainstream education teacher and, together, they determine the syllabus (Har, 2000).

Many European countries have been influenced by the Salamanca Statement that underscores the obligation of effective education, learning development, and adaptation of schools for all the students, regardless of framework differences (Meijer & Watkins, 2019). In Italy, most of the special needs students are included in mainstream schools, yet there are special schools for the blind and deaf students. There is a framework of full inclusion with a special education teacher for four students with special needs, and the included children receive assistance from welfare and medical services. In Luxembourg, included students in a mainstream class, are entitled to eight weekly hours' assistance by a special teacher. In Ireland, students learn in a special class in a mainstream school or in a special education framework. In Austria, there are inclusive classes that provide full assistance by a teacher who helps the included students, as well as a special class in a mainstream school. In

Denmark, there is an option of a special class in a mainstream or special school, and there is an option of inclusion in a mainstream class with assistance and additional lessons. In England, most of the students learn in mainstream frameworks that include students with special needs in mainstream education and, only in extreme cases, in special education. The inclusion takes place in a mainstream school that has an inclusive class or a special education class, or in a support unit outside the school (Meijer & Watkins, 2019). In Romania, the Law of Education considers special education as an inseparable part of the education system, namely inclusion of special needs students in mainstream schools and in the community. Special needs students are included in two ways: special groups or special classes, and individual inclusion by providing support forms and structures (Barth et al., 2019).

I.3 Teachers Perceptions of Including Children with Special Needs in Inclusion Frameworks

The inclusion policy advocates acceptance of different individuals and their integration in society, based on the belief that all people have an equal right to be part of the society in which they live (Samara & Abu-Hassin, 2007). The Special Education Law (Ministry of Education, 1988), as well as the amendments and additions thereof, underscore the principle of special needs children's inclusion in mainstream learning frameworks (Romy et al., 2009). Since the legislation of the Law of Inclusion, many students with special needs from special education frameworks have been included in mainstream classes and schools (Crispel & Kasperski, 2019). The inclusion success and implementation in practice depend on several key factors, mainly on the teachers who implement the inclusion in their teaching routine in class, i.e., their perceptions, skills, and competences (Cohen & Lazer, 2004). In general, teachers' attitudes towards inclusion are positive, but most of the teachers feel they lack the knowledge, training, and means required for optimal inclusion (Samara & Abu-Hassin, 2007; Tomer & Malachi, 2015).

In countries which had a legislative framework for the inclusion of students with special needs, the teachers expressed more positive perceptions of inclusion than did teachers in countries which did not have a binding legal framework. Moreover, both the principals and the school policy constitute a factor that affects teachers' perceptions of inclusion (Avramidis & Norwich, 2002). Another factor that impacts teachers' positive perceptions of inclusion is their teaching experience. Teachers who engaged in the inclusion of students with special needs and acquired experience, had more positive perceptions of inclusion (Avramidis & Norwich, 2002). Schools that realized that the mainstream class did not provide the necessary

response to the inclusion of children with special needs (Matityahu, 2016), re-organized the educational environment so that it was adaptively accessible to children with special needs. The teachers' perceptions of inclusion became more positive, and teachers who, during their work, received support and mentoring they needed for coping with students with special needs, developed more positive perceptions of inclusion (Avramidis & Norwich, 2002).

The factors that entailed teachers' negative perceptions of inclusion, related to two major areas: workload and lack of appropriate training. Teachers who include students with special needs are required to prepare educational programs that are adapted to these students' needs, in addition to the regular programs they have to prepare, resulting in additional workload (Tomer & Malachi, 2015). The education system demands compliance with goals and curricula, but does not take into consideration the adaptations needed in inclusive teaching. Hence, many teachers are frustrated by their work and their ability to successfully include students with special needs in their class (Crispel & Kasperski, 2019). Special education is different from mainstream education, and teachers who lack appropriate training in special education and have poor knowledge of students with special needs, their complexity, and ways of coping with them, develop negative perceptions of inclusion (Crispel & Kasperski, 2019). Teachers' training is one of the most important mainstays of the inclusion of educational factors, and a way of rationalizing the education system services. It should be grounded in inquisitive learning and satisfy the real and complex needs of the included and including students (Bolborici and Bódi, 2018). Hence, the training and development of teaching staffs constitute the key to a successful inclusion (Avramidis & Norwich, 2002).

I.4 Main theories in this research

This study is based on three main theories: the first is the Bio-Ecological Theory conceived by Bronfenbrenner (1979, 1986, 1992); the second is the Evolution Theory conceived by Vygotsky (1978, 2004); and the third is the Psycho-Social Theory conceived by Erikson (Clayton, 1975; Kerpelman & Pittman, 2018).

Bronfenbrenner's Bio-Ecological Theory (1979, 1986, 1992)

This theory examines the effect of the social environment on the individuals and on the shaping of their identity as part of the socialization process. It also explores how individuals are affected by their environment. This theory manifests the effects of the social environments on the individuals and vice versa. Social environments consist of the family, school, peers' group, extra-curricular courses, youth movements, and so on, playing an

important role in the individuals' development, social experiencing, and norms and values assimilation.

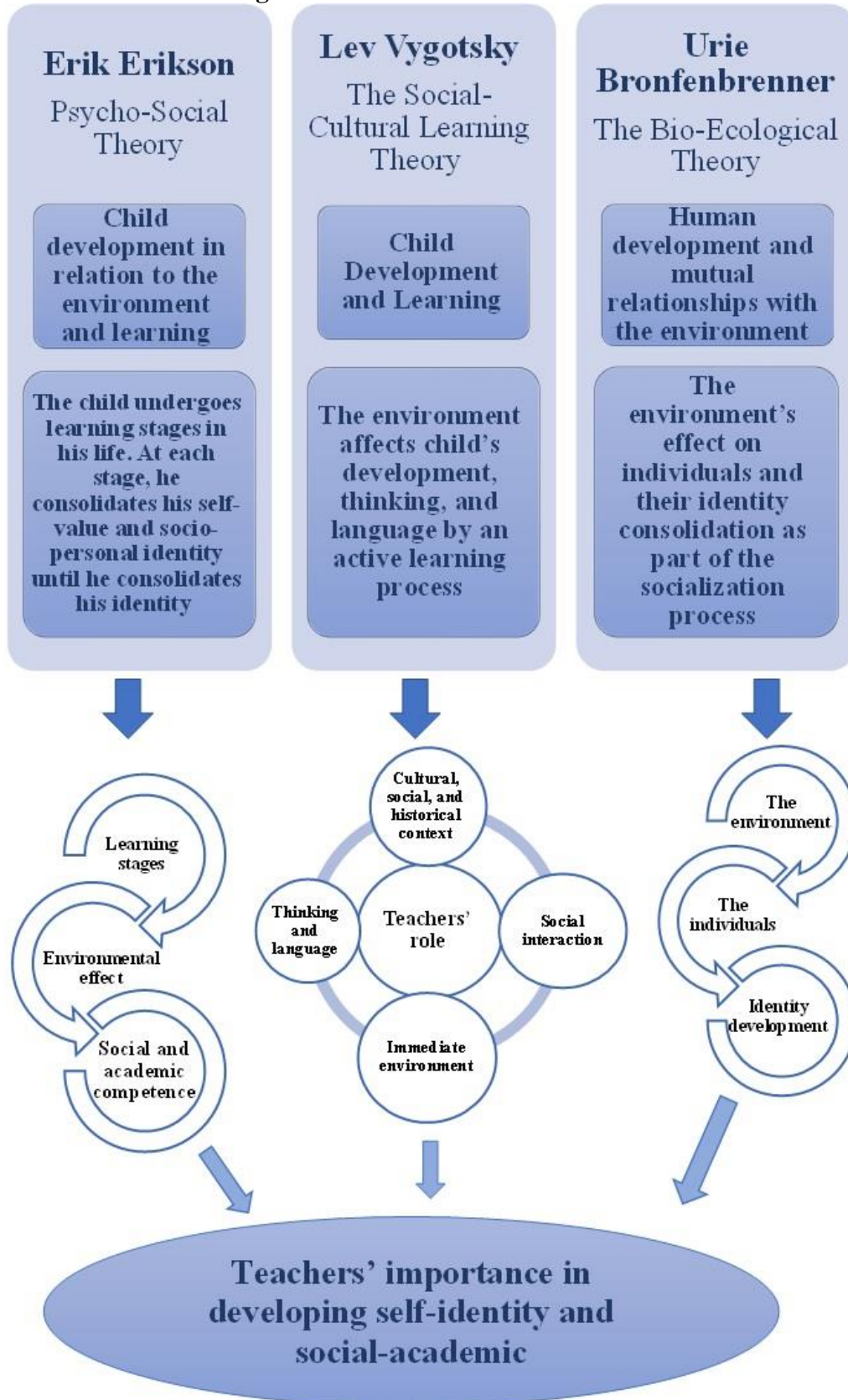
Vygotsky's Evolution Theory (1978, 2004)

This theory is based on the socio-cultural learning theory. It is affected by the environmental culture that orients and impacts children's development. The development of thinking and language transpires by social interactions with the environment and the development of social relationships. Vygotsky argues that mental development is constant and exists at every stage of life. Social interaction enables development through learning, language use, acquisition of tools for solving problems and conflicts, planning and execution, as well as control over impulsive behavior and actions.

Erikson's Psycho-Social Theory (1968)

This theory relates to people's life from infancy and up to older age by eight stages (infant, toddler, pre-schooler, grade-schooler, teenager, young adult, middle-age adult, and older adult). It explores the contribution of the educational and social effects on people's development and personality throughout their life. At every stage, people face a unique conflict between their personal needs and the demands of society. They have to cope with and navigate between these crises by using the tools they have acquired in the course of their life (Clayton, 1975; Kerpelman & Pittman, 2018).

Figure 1: Main theories in the research



I.5 Social and Academic Competence and Self-Identity Development

Social competence is an integrative concept that relates to the ability to create, be adjusted to a situation, and adapting oneself to a given social situation (Calderon et al., 2011). Social competence emphasizes the wish to belong to one's peers' group (Dehart et al., 2004), with reference to social interactions, their quality, and the conduct efficiency of those interactions. Children's ability to be integrated in the peers' group is a function of social competence (Tal, 2002). School is considered as having a strong impact on children's worldview, and it constitutes the basis of knowledge inculcation and acquisition of numerous skills. The objective is to establish academic, social, and behavioral relationships, as well as maintain contact with the peers' group that affects children during their life (Calderon et al., 2011; Tal, 2002). Children learn to identify and interpret social behaviors through their interactions with other children and, thus, they acquire meaningful social competences. Consequently, these individuals encounter a difficulty in establishing social relationships, like in the case of Deaf/HoH children whereby, as a result of their disability, the ability to learn these behaviors is compromised (Antia & Kreimeyer, 2015).

Academic competence implies compliance with academic requirements and capability of performing learning tasks in an efficient and optimal way (Mussen et al., 1998). This is an academic competence that is acquired and developed with age, particularly in a learning environment such as nursery school or school (Schwarzman & Rubin, 2014). For the purpose of acquiring academic competences, students should be available and aware of it, the more so deaf/HoH students who need these competences (Alshutwi et al., 2020). Deaf/HoH students find it difficult to acquire competences and abilities of language development. Due to their disability, they encounter difficulties in producing the spoken language and in verbally communicating with those around them (Ingber et al., 2008). As a result, The hearing disability affects the students' academic competence, as well as their writing and reading skills (Luckner & Ayantoye, 2013). The learning framework plays a considerable role in the acquisition of learning competences and the teaching staffs are an inseparable part of it (Alegre de la Rosa & Angulo, 2019). The auditory deprivation causes communication and language problems, leading to many academic hardships and challenges. HoH children are likely to experience attention difficulties and distractions, because they find it difficult to persevere in the listening task that is based mainly on the auditory pathway. Unlike hearing people, they cannot distract their mind partly from the learned subject, since they are unable to complete the missing information through all the senses (Hoff, 2013).

Identity Development: People's identity is developed and consolidated throughout their life in a consistent and continuous process. Self-identity grows out of the collective identity, allowing individuals to look for the similarities and differences in the group and, thus, build their own identity (Talmi, 2017). The clearest definition of identity is by contrasts, e.g., hearing versus hard-of-hearing or deaf (Epstein, 2002), however in many cases, deaf people feel alienated from society (Belényi, 2014). Deaf individuals view themselves culturally different from the entire population. The Deaf/HOH consider themselves as a community with a language, culture, and norms, feeling they belong to this community on which they can rely (Epstein, 2002). The sense of belonging to the group helps individuals in developing their identity (Acuña & Bugas, 2010). The process of self-identity development of the Deaf/HoH and their integration into society comprises four main strength factors that facilitate the process: support by society, support by family, acceptance of the disability as an inseparable part of the self-identity, and inner motivation (Yonah & Ben-Asher, 2017). Hence, great importance is attributed to the identity development process, since the concept of self plays an important role in the development of personality, behaviors and social capabilities. Moreover, self-perception serves as a basis for people's beliefs and attitudes in every human interaction, as well as an essential factor in people's way of coping with their disabilities and with their environment (Neeraja & Leelavathi, 2014).

To sum up, Deaf/HoH students can receive social support and confirmation of their identity through interaction with Deaf/HoH friends. Yet, this requires a syllabus and teachers who are sensitive and encourage the development of self-identity and self-confidence (Epstein, 2002). Educational programs should offer these students a social-emotional learning, innovations for auditory perception, access to the variety of basic competences that are vital for social and academic attainments. All these will assist in the development of identity among this population (Alshutwi et al., 2020).

I.6 The Intervention Program "Hear the Hard of Hearing"

One of the goals of intervention programs in education is to help students in the development and acquisition of positive experiences from an academic, social, and emotional aspect (Levin-Epstein, 2015). They constitute one of the tools for the promotion of social-emotional learning (Benbenisti & Friedman, 2020) and can provide varied tools, knowledge, information, competencies, and strategies (Ministry of Education, 2021). The key to a successful intervention program starts with the training of teachers who are the strong link between the students' success and optimal teaching (Levin-Epstein, 2015).

The empirical literature focuses on mainstream and special education teachers' perceptions of including special needs students. However, there are but a few studies that have investigated teachers' perceptions of including Deaf/HoH students in mainstream classes from the viewpoint of social competence, academic competence, and self-identity development. This is the gap in knowledge that led to the building of the "Hear the Hard-of-Hearing" intervention program, developed by the researcher of this study.

Intervention program aims

1. Enrich teachers' knowledge about the inclusion of students with special needs in general, and Deaf/HoH students in particular.
2. Bridge and connect the world of mainstream education with the world of special education, nurturing positive attitudes towards inclusion in mainstream classes.
3. Raise the anti-stereotypical awareness and inculcate knowledge and practical tools to the teachers for the purpose of coping with the inclusion process.
4. Provide practical tools for the promotion of social competence, academic competence, and self-identity development of Deaf/HoH students.
5. Enhance collaboration between the entire educational staff of the school (principals, counsellors, home-class teachers, subject teachers, coordinators and inclusion package teachers, para-medical team, assistants).

The program encompasses experiential practicum designed to create understanding and empathy for the needs of Deaf/HoH students.

The program participants

The participants in the intervention program were 78 mainstream and special education teachers, working in mainstream/special education classes for special needs populations in general, and Deaf/HoH population in particular. All the teachers worked in mainstream schools in the northern and southern districts of Israel.

The program - learning subjects and activities

The subjects learned in the intervention program were: the Law of Inclusion and its amendment, the inclusion population, as well as dilemmas experienced by teachers and their way of action. The researcher presented examples from her knowledge and personal experience in working with Deaf/HoH students.


The intervention program consisted of frontal lectures, group workshops, discussions, and provision of a toolbox required for implementing the inclusion in class as presented in table

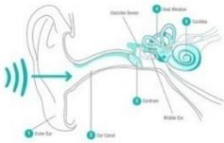
1. The program was accompanied by unique videoclips, designed to render practical


knowledge accessible to the teachers for the purpose of achieving optimal inclusion of Deaf/HoH students in mainstream classes.

Table 1: Example of sessions from The intervention program "Hear the Hard-of-Hearing"

* All workshop sessions lasted two hours.

Sessions	Topics	Goals	Activities
3.	<p>The relationship between mainstream education and special education</p> 	<p>Mediate and explain the relationship between mainstream education and special education in Israel compared to other countries around the world</p>	<ol style="list-style-type: none"> Opening: "The path of the "Shalva" band from Israel to recognition in the world: https://www.youtube.com/watch?v=WZhmq4jSNkc. The relationship between mainstream education and special education in Israel compared to the rest of the world - a presentation. Dividing into groups: study of countries - the special education law in the different countries around the world. Reflective discourse and creative presentation of the products while comparing them to the law in Israel. Ending with the song: Shalva Band - A Million Dreams - Eurovision 2019 https://www.youtube.com/watch?v=4HWaldJt5Bc.
5.	<p>Lecture and Workshop: The influence of the social environment on the individual - (Bronfenbrenner 1979, 1986), learning and development of social processes (Vygotsky, 1978), psychological and social development of the child (Erikson, 1968).</p>	<p>To increase teachers' awareness of the influence that the social and educational environment has on the individual.</p> <p>To understand the psychological and social development of the individual</p>	<ol style="list-style-type: none"> Question for the meeting - can we, as teachers, influence our students? how? Division into groups - group discussion on the question presented. Presentation of insights from the discussion. Video (English): "Rita Pierson: Every kid needs a champion TED" https://www.youtube.com/watch?v=SFnMTHhKdkw Discussion and insights from the video - how we as teachers influence our students and can develop social, educational and psychological processes in them. Presentation and explanation of Bronfenbrenner's model, Vygotsky's and Erikson's theory. Task for the next meeting - try to think of one teacher who influenced you and

			how it influenced you.
10.	<p>Lecture - A hard of hearing and/or deaf children - what are their needs?</p> <p>How the environment can help inclusion?</p> 	Acquaintance with the needs of the hard of hearing and deaf population - including information about hearing aids and amplification.	<ol style="list-style-type: none"> 1. Opening session - introduction to the hard of hearing and deaf population (the structure of the ear and problems that can cause hearing impairment) and also includes videos of - "What it sounds like when there is a mild hearing impairment", and simulator videos - "How does a hard of hearing/deaf student hear when the teacher moves away from him and when the class is noisy". "How does a student with a cochlear implant hear", and "How does a hard of hearing/deaf student hear with or without an FM amplification system". How will we help a hard of hearing/deaf student? 2. A "KAHOOT" quiz to conclude the lecture. 3. Meeting summary - listening circle + note one important thing that the meeting renewed
11.	Workshop - hard of hearing and deaf - how to integrate them optimally in the regular classroom.	To encourage a spatial vision for ways of optimal inclusion of this population in the regular classroom	<ol style="list-style-type: none"> 1. Repetition of the information from a previous meeting. 2. Presenting a case study. 3. Dividing into three groups - each group will analyze a case, discuss and present according to its scheme how should the hard of hearing student be included in the mainstream class. 4. Reflective discourse in the circle - how to behave when inclusion a hard of hearing or deaf student - do and don't do according to the teacher's assessment. 5. Video on how to include hard of hearing and deaf students: https://www.ndcs.org.uk/information-and-support/being-deaf-friendly/information-for-professionals/here-to-learn/watch-our-here-to-learn-videos/positioning/
12.	A lecture combined with a creative workshop - a	Equip the teachers with practical tools to	<ol style="list-style-type: none"> 1. Repetition of what was said in previous meetings. 2. Presentation of a toolbox with the ten keys to the inclusion of students with

	<p>practical toolbox for optimal inclusion and promotion of students with special needs in general and the hard of hearing and deaf in particular</p> 	<p>integrate and advance the student with special needs in general and the hard of hearing and deaf student in particular.</p>	<p>special needs in general and the hard of hearing and deaf in particular and how this is reflected in the field - in the mainstream classroom + the ten rules of "do's and don'ts" in the inclusion of deaf and hard of hearing students.</p> <ol style="list-style-type: none"> 3. The workshop for creating the ten keys - each teacher prepares for herself the ten keys and the "do's and don'ts" rules, which she can hang in her classroom and will be used for optimal inclusion. 4. Summary of a meeting and workshop, presentation of products and a listening circle in which each teacher will state one thing that she learned and will apply in her next lesson with the hard of hearing/deaf student included in her class
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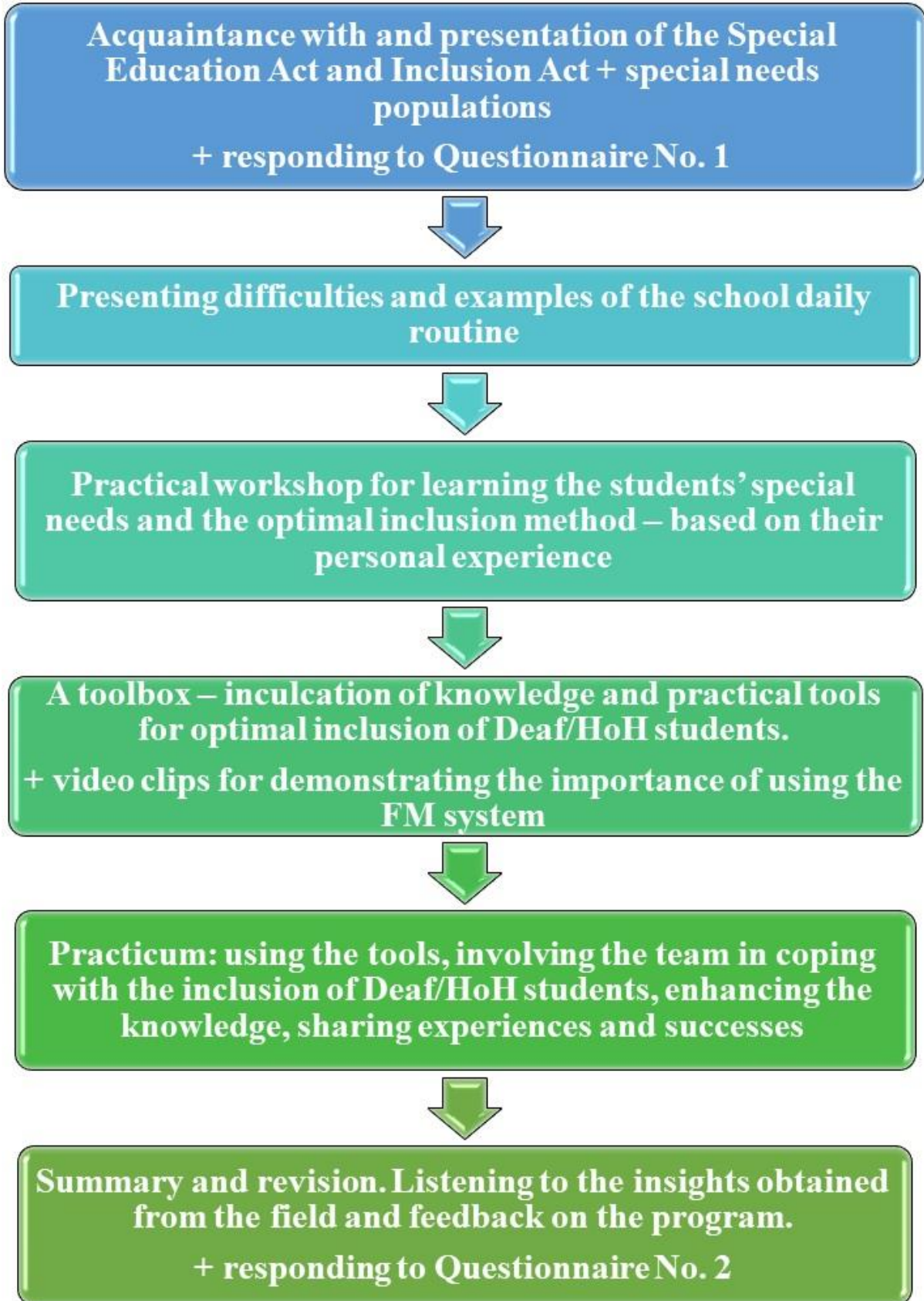
The program framework – Time and place

The program comprised 15 weekly sessions, each lasting two hours, a total of 30 weekly hours that were divided over four months. The sessions were conducted in the schools at the end of the school day, as part of in-service training hours customary in Israel.

The program uniqueness

The program uniqueness resides in its focus on Deaf/HoH students included in the mainstream education system. It engaged in knowledge accessibility, concrete information, and practical tools for coping with the personal and individual needs of Deaf/HoH students included in mainstream classes as described in figure 2.

Figure 2: The Intervention Program



I.7 The Impact of the COVID-19 Pandemic on the education system, the transition to distant learning and the teachers' copings with Deaf/HoH students

The COVID-19 pandemic that started round the globe, resulted in a massive shutdown of commercial businesses and schools in order to prevent the spreading out of the virus and the illness. Approximately 186 countries worldwide shut down the schools, shifting more than 1.5 billion students to distant learning. On 15.3.2020 the schools in Israel shifted to full online learning by digital devices. Although the Israel schools engaged in a regular yearly exercise of distant learning, preparing for a case of emergency, no one assumed the transition to distant learning would be so quick, sharp, and long. According to publications by the OECD and UNESCO, the transition to distant learning caused inequality among the students, increasing the gaps between them, mainly among weak populations that had been exposed to an academic damage (Weissblei, 2020). The entire education system had to shift to distant learning overnight, and make special adaptations of the teachers' role. As a result of the transition to distant learning during the COVID-19 pandemic, the education system faced new and complex challenges with which it had not coped before. Hence, in addition to the complex teaching and learning by computerized means, people had to deal with the familial complexity of learning during periods of lockdown. Nevertheless, side-by-side with these challenges, this period offered quite a few opportunities (Blinder, 2020).

Many teachers indicated the option of conducting in-depth discussions about academic topics, presenting and sharing learning materials, and allowing all students to make progress by themselves and, thus, develop capabilities of independent learners. Yet, there was a real and meaningful difficulty in the academic follow-up of the students' progress, the supervision of tasks performance, additional burden on the teachers' work and, obviously, the absence of personal contact with the students (Kulal & Nahak, 2020).

There were perceptions that supported distant learning, but there were also many difficulties, challenges, and failures that came up in the field during the COVID-19 pandemic. The teachers manifested a difficulty in coping with the students who lacked the skills necessary for independent learners. This made it extremely hard to delegate authorities and transfer part of the responsibility for the learning to the students. Another difficulty related to the system's demand from teachers to apply innovative technologies that were unfamiliar to them and for which they had not been trained. Another issue was the teachers' difficulty in monitoring the students' performance of tasks. The last difficulty was related to technological problems with

the link to the Internet and the technological means. Nevertheless, the greatest difficulty most of the teachers experienced was the lack of personal interaction with the students (Yang, 2020).

Based on the researcher's professional experience as a teacher of Deaf/HoH students for the past 18 years, most of the difficulties Deaf/HoH students encountered in learning in general, and distant learning in particular, revolved around attention maintenance and focusing that relied on lips reading and eye contact that were hardly possible in distant learning. Moreover, these students found it difficult to learn with the background noises when all the students' microphones were on.

CHAPTER II: RESEARCH DESIGN AND METHODOLOGY

This chapter presents the research methodology, aims, questions, hypotheses, as well as the researcher's considerations for choosing this research design and methodology.

II.1. Research Aims, Questions, Hypotheses, Variables

This part presents the compatibility between the research objectives, the research questions and hypotheses.

II.1.1. Research Aims

1. To examine the impact of the intervention program "Hear the Hard of Hearing" on teachers' perceptions of inclusion and their willingness to include Deaf/HoH students in mainstream classes.
2. To examine the impact of the teachers' intervention program "Hear the Hard of Hearing" on their perceptions of the social and academic competence of Deaf/HoH students included in mainstream or special classes.
3. To examine the impact of the teachers' intervention programs "Hear the Hard of Hearing" on their perceptions of the self-identity development of deaf/HoH students included in mainstream or special classes.
4. To examine teachers' perceptions of including students with special needs in general, and deaf/HoH students in particular, being a means of teachers' professional development as part of their role perception of optimal inclusion of these students in mainstream classes.
5. To examine the relationship between the learning framework (inclusion in mainstream/special classes) and teachers' perceptions of social competence, academic competence, and self-identity development of deaf/HoH students.

II.1.2. Research Questions

1. What are the teachers' perceptions of including deaf/HoH children in mainstream classes, social competence, academic competence, and self-identity development of children with special needs in general and Deaf/HoH students in particular, who learn in special or mainstream education framework?
2. What are the changes that will transpire among teachers attending the intervention program, regarding perceptions of including deaf/HoH children in mainstream classes, social competence, academic competence, and the students' self-identity development?
3. What is the relationship between the learning framework (special education / inclusion in mainstream classes) and teachers' perceptions of the inclusion of Deaf/HoH children in mainstream classes, social competence, academic competence, and self-identity development of these students?
4. What is the relationship between teachers' background variables (gender, training, teaching seniority, advanced training in this field, number of Deaf/HoH children in the class, and other children in the class), their perceptions of including students with special needs in mainstream classes, and self-identity development of these students?
5. How do teachers perceive (a) the implications of including Deaf/HoH students in mainstream or special education class, (b) their involvement in the inclusion of Deaf/HoH students in mainstream or special education class, (c) and how do teachers cope with the inclusion of these students in their class?

II.1.3. Research Hypotheses

1. The perceptions of including students with special needs in mainstream classes will be more positive following the intervention program among the two teacher groups – mainstream and special education.
2. Teachers will perceive the social competence, academic competence, and the students' self-identity development as higher, following the intervention program.
3. Teachers who work in special education schools will demonstrate a more positive perception of including students with special needs in mainstream classes than teachers in mainstream schools.
4. Teachers who work in special education schools will perceive students' social competence, academic competence, and self-identity development as higher than teachers in mainstream schools.

II.1.4. Research Variables

Independent variables:

- Intervention program for teachers.
- Time of measurement (before / after intervention).
- Type of education (special education / mainstream education).
- Teachers' background characteristics: gender, seniority training in special education, number of deaf/HoH children in class.

Dependent variables:

- Attitudes towards inclusion of special needs students in mainstream classes
- Teachers' perception of special needs students' social competence; academic competence; self-identity development.

II.2. Research Paradigm - Mixed Methods Research (MMR)

The study used a Mixed Methods approach (Creswell & Plano Clark, 2011), which combines quantitative and qualitative methodologies that allow researchers to simultaneously include results from a population sample and to understand in depth the investigated phenomenon. From a statistical analysis of the questionnaire, the quantitative data emerged, and from the interviews the qualitative data emerged.

II.3. Research Participants (in the Quantitative/Qualitative part)

In the first measurement before the intervention program, 78 teachers from the two groups responded to the questionnaire. In the second measurement, following the intervention program, out of 78 teachers, 55 mainstream and special education teachers responded to the questionnaire. The researcher intended choosing a large research population. However, some teachers did not agree to fill in the questionnaires following the outbreak of the COVID-19 pandemic due to lack of time, despite repeated requests. The teachers were randomly chosen from various schools in the northern and southern districts of Israel.

II.4. Research Methods and Tools

This research uses several research instruments, both quantitative (three questionnaires) and qualitative (Semi-structured in-depth interviews). The questionnaires were administered to the teachers before the intervention program and after attending in the intervention program, they completed the same questionnaires again in order to examine the impact of the program on their perceptions. The comparison indicated whether this intervention program could assist and affect a change in teachers' perceptions of including students with special needs in general, and deaf/HoH students in particular, in a mainstream or special class.

First Questionnaire - Teachers' perceptions towards inclusion

Name: Teachers' perceptions towards inclusion and their willingness to include [students] (Shechtman et al., 1993), based on the questionnaire of Gans (1985) and Scruggs and Mastropieri (1996), designed in the United States.

Purpose: To examine teachers' perceptions toward the inclusion of students with special needs in mainstream classes.

Structure: The questionnaire is divided into three sections: section one covers ethics and informed consent; section two covers demographics; section three examines teachers' attitudes towards inclusion and willingness to include.

Second Questionnaire - Social competence and academic competence

Name: Social and academic competence (Gresham and Eliot, 1990).

Purpose: To assess students' social competence and academic competence.

Structure: The questionnaire consists of two sections:

Part 1 focuses on social competence in the aspects of cooperation, initiative, self-control, as well as introvert and extrovert behavior. The questionnaire contains 46 items that examine social competence.

Part 2 focuses on academic competence in the field of reading and writing skills, mathematical skills, application and understanding of home-class teachers' instructions, students' motivation to succeed, students' intellectual functioning and general behavior. The questionnaire consists of nine items.

Third Questionnaire - Self-Identity of deaf/HoH students.

Name: Self-identity of deaf/HoH students.

Purpose: To examine the self-identity of deaf/HoH students. The questionnaire was developed by De-Markesh and Ulianitski - the researcher (2014) and focuses on social competence and self-identity of Deaf/HoH Deaf students. This questionnaire is in addition to the questionnaire developed by Gresham and Eliot (1990).

Structure: The questionnaire consists of two sections.

Part 1 comprises a teachers' guide regarding the frequency of the deaf/HoH students' behavior in relation to social competence and self-identity development.

Part 2 consists of 14 items questions answered according to a Likert scale from 1 to 5.

Interviews

The interviews in this study were Semi-structured in-depth interview with several guiding questions. 10 teachers were interviewed, five mainstream education teachers who teach in mainstream classes that include several students with special needs including deaf/HoH, and five special education teachers who teach in special education classes for the deaf/HoH. The teachers have different levels of experience and teach in either the north or south of Israel. The interviews were analyzed in a qualitative content analysis according to themes and categories.

II.5. Research Design

The research design and methodology are shown in Table 2.

Table 2: *Research design and methodology*

	Research stage	Research aim	Research Participants	Research instrument	Data analysis
1.	Developing and validating the questionnaires (A pilot study)	To develop, assess, and validate the questionnaire in a pilot study, in order to examine its implementation potential	Pilot- 40 teachers who experience inclusion of special needs students	The research questionnaires: 1. Teachers' perceptions towards inclusion. 2. Social competence and academic competence. 3. Identity of Deaf/HoH students.	Descriptive statistics, frequency analysis, exploratory factor analysis, Cronbach's alpha for internal consistency
2.	Development and implementation of an intervention program and examining teachers' perceptions before and after the intervention program, regarding social competence, academic competence, and self-identity development of special needs students.	To examine if there is a change in the perceptions of teachers of mainstream and special education students in mainstream special classes, as an impact of the program on teachers' perceptions.	78 teachers who had attended the intervention program, from both mainstream and special education frameworks	Method – Survey; Instrument – Teachers' Perceptions questionnaires	Regression models for hypothesis testing
3.	In-depth interviews with teachers who attended the	To examine teachers' perceptions of inclusion and the	10 teachers - five of them include Deaf/HoH	Method - In-depth interviews with open-ended items	Content analysis by themes and categories

	program:	effectiveness of inclusion in-depth and the contribution of the intervention program.	students in a mainstream school at a mainstream class, and five teachers that include Deaf/HoH students in a mainstream school at special class for these students.	Instrument - Interview guide	
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II.6. Data Analysis

The findings of stages one and two were statistically analyzed and stage three was analyzed using a qualitative content analysis of themes and categories.

Triangulation

In qualitative research, researchers acknowledge that they cannot separate themselves from the study, as they bring their own experiences, values, and perspectives (Fusch, Fusch & Ness, 2018). The research results are achieved by triangulation, making sure that the study does contribute to knowledge.

CHAPTER III: RESEARCH MAIN FINDINGS

This chapter presents the main quantitative (Questions 2, 3, 4) and qualitative (Questions 1, 5) results, relating to each of the research questions and hypotheses.

III.1. Quantitative Findings

III.1.1 Findings relating to research question 2

Findings related to Research hypothesis No. 1: Following the intervention program, the perceptions towards the inclusion of students with special needs in mainstream classes will be more positive among the two groups of teachers – mainstream and special education.

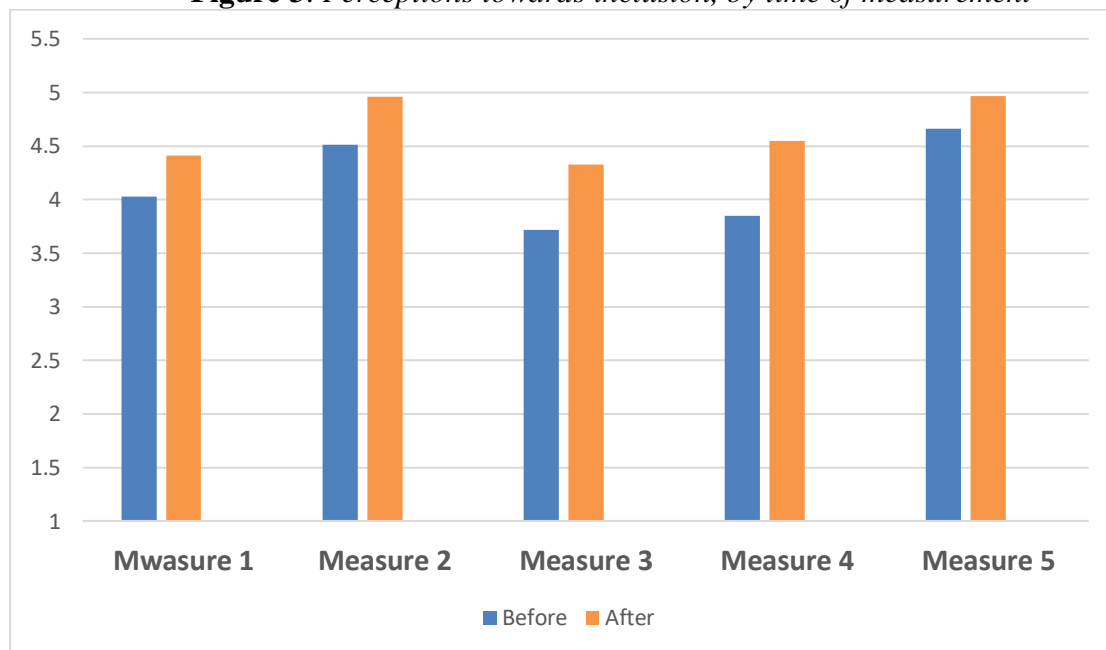
In order to test this hypothesis, a MANOVA (Multiple Analysis of Variance) was performed with measurement of time (Before / After intervention) as the independent variable, and the five measures of perception towards inclusion as the dependent variables. The mean values and standard deviations of the measurements are presented in Table No. 3.

Table 3: means and standard deviations of attitudes towards integration, by time of measurement (N=51)

Variable	Time of measurement	Mean value	Standard deviation
The effect of inclusion on children with special needs	Before intervention	4.03	.80
	After intervention	4.48	.63
The effect of inclusion on mainstream children and the class	Before intervention	4.51	.79
	After intervention	4.95	.61
The effect of inclusion on teachers	Before intervention	3.72	.68
	After intervention	4.33	.69
Acceptance of the principle of inclusion	Before intervention	3.84	.92
	After intervention	4.54	.72
Willingness to include students with special needs in mainstream classes	Before intervention	4.65	1.18
	After intervention	4.97	.874

A comparison between the two times of measurements is also presented in Figure No. 3:

Figure 3: *Perceptions towards inclusion, by time of measurement*



Measure 1: The effect of inclusion on children with special needs.

Measure 2: The effect of inclusion on mainstream children and the class.

Measure 3: The effect of inclusion on teachers.

Measure 4: Acceptance of the principle of inclusion.

Measure 5: Willingness to include students with special needs in mainstream classes.

The results of the MANOVA are presented in Table No. 4.

Table 4: Results of MANOVA testing the effect of intervention on perceptions towards inclusion ($df=1,100$)

Variable	F	Sig.
The effect on children with special needs	10.05	0.009
The effect on mainstream children and the class	20.10	0.002
The effect on teachers	18.27	0.001
Acceptance of the principle of inclusion	2.31	0.001
Willingness to include	1.25	N.S

With respect of research hypothesis No. 1, the analysis showed a significant increase in teachers' perceptions, following the intervention program. The increase was manifested in four out of five perceptions as follows:

- The effect of inclusion of children with special needs.
- The effect of inclusion on mainstreams children.
- The effect of inclusion on teachers.
- Acceptance of the principle of inclusion.

No significant change was indicated in the variable of willingness to include, which was already fairly high before the intervention.

Findings related to Hypothesis No. 2: Teachers will perceive the social competence, academic competence and the students' self-identity development as higher, following the intervention program.

In order to test this hypothesis, a MANOVA was performed, with time of measurement (Before / After intervention) as the independent variable, and the special needs children's social competence and academic competence as the dependent variables. The means and standard deviations of the measurements are presented in Table No. 5.

Table 5: Mean values and standard deviation of social competence and academic competence of children with special needs, by time of measurement ($N=51$)

	Time of measurement	Mean	Std. Deviation
Social competence of children with special needs	Before intervention	2.84	.44
	After intervention	2.85	.39
Academic skills of children with special needs	Before intervention	3.04	.90
	After intervention	3.06	.97
Self-identity	Before intervention	2.44	.37
	After intervention	2.53	.64

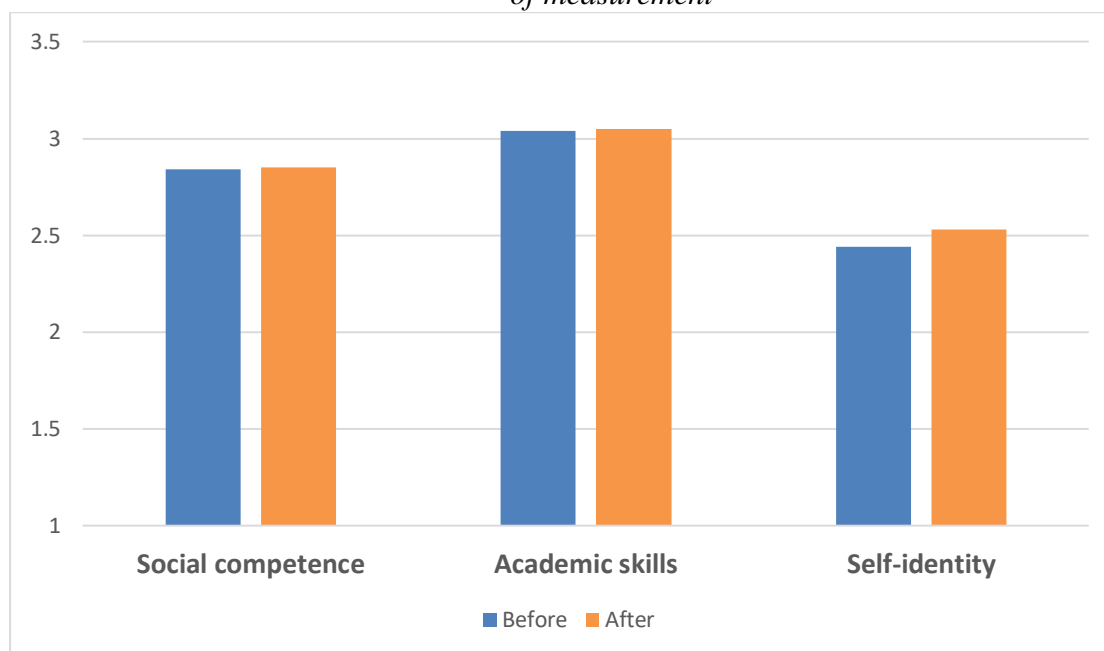
The results of the MANOVA are presented in table No. 6.

Table 6: Results of MANOVA testing the effect of intervention on social and academic competence ($df=1,100$)

Variable	F	Sig.
Social competence of children with special need	0.04	N.S
Academic skills of children with special need	0.01	N.S
Self-Identity of children with special needs	0.42	N.S

The results yielded no significant effect on the two measures of children’s competence. Thus, there was no change between the measurement performed before and the measurement performed the intervention, with respect of children with special needs social competence and academic competence. The comparison between the two times of measurements regarding social competence, academic competence, and self-identity, is presented also in Figure No. 4.

Figure 4: Special education children’s social competence and academic competence, by time of measurement



III.1.2 Findings relating to research question 3

Comparison between teachers who work in special education schools and mainstream schools

Findings related to Research hypothesis No. 3: Teachers who work in special education schools will show more positive perceptions towards the inclusion of students with special needs in mainstream classes than teachers in mainstream schools.

In order to examine this hypothesis, Multiple Analysis of Variance (MANOVA) was performed, with type of education (special education / mainstream) as the independent variable and the perceptions towards the inclusion of students with special needs in mainstream classes as the dependent variables. The mean values and standard deviation of the measurements are presented in Table No. 7.

Table 7: Mean values and standard deviation of the perceptions towards the inclusion of students with special needs in mainstream classes among special education teachers (N=41) and mainstream education teachers (N=36).

Variable	Type of education	Mean	Std. Deviation
The effect of inclusion of children with special needs	Special education	3.93	.75
	Mainstream school	4.08	.78
The effect of inclusion on mainstream children and the class	Special education	4.56	.77
	Mainstream school	4.59	.73
The effect of inclusion on teachers	Special education	3.70	.60
	Mainstream school	3.99	.83
Acceptance of the principle of inclusion	Special education	3.76	.91
	Mainstream school	4.07	.78
Willingness to include students with special needs in mainstream classes	Special education	4.30	1.22
	Mainstream school	4.72	.99

The results showed a difference between the two groups regarding the effect of inclusion on the teachers' approach. Mainstream teachers demonstrated a more positive perception than did special education teachers. The difference between the groups with reference to the other perceptions was not significant.

Findings related to Research hypothesis No. 4: Teachers who work in special education schools will perceive students' social competence, academic competence, and self-identity development higher than teachers in mainstream schools.

In order to examine this hypothesis, Multiple Analysis of Variance (MANOVA) was performed, with type of education (special education / mainstream) as the independent variable and the social competence and the academic competence of children with special needs as the dependent variables. The comparison on the self-identity was performed by t-test examining the change between the two measurements.

No significant difference between the two groups was found with regard to the social competence and academic competence of children with special needs. Moreover, no

significant difference between the two groups was found with reference to self-identity ($t(60) = 0.83, p > .05$).

III.1.3 Findings relating to research question 4

Findings related to the relationship between teachers' background variables (gender, training, teaching seniority, advanced training in this field, number of deaf/hard of hearing (Deaf/HoH) children in the class, and other children in the class), their perceptions of including students with special needs in mainstream classes, and self-identity development of these students. Below are presented the results obtained with reference to this question.

Gender: No analysis was performed due to a small number of male teachers in the sample.

Years of teaching: Pearson correlation coefficient was computed between years of teaching and each one of the dependent variables. The results are illustrated in Table No. 8.

Table 8: *Correlations between years of teaching and the dependent variables*

Variable	Years of teaching
The effect on children with special needs	-.24*
The effect on mainstream children and the class	-.04
The effect on teachers	-.13
Acceptance of the principle of inclusion	-.10
Willingness to include	-.21
Social competence of children with special needs	-.23
Academic competence of children with special needs	-.04
Self-identity	-.24*

A significant negative correlation with low intensity was found with regard to the effect of inclusion on children with special needs. The more experienced teachers perceived the effect of inclusion on children with special needs lower than did less experienced teachers. The more experienced the teachers, the lower their view of the self-identity of the students with special needs. No significant correlations were found in relation to the other variables, indicating that the perceptions of the teachers towards the impact of the inclusion, as well as their perception of identity development of Deaf/HoH students in mainstream classes, did not change with the growing experience of the teachers.

The results showed no significant differences between teachers had who attended special education training programs, and teachers who had not attended them.

T-test for independent samples was performed in order to compare teachers who had Deaf/HoH students in their class and teachers who did not have such students in their class. The results indicated that teachers who had Deaf/HoH students in their class, perceived these students' academic competence as higher, compared to teachers who did not have such students in their class. No significant differences were found with regard to the other variables.

III.2 Qualitative Findings

This sub-chapter presents findings obtained from teachers' interviews that related to inclusion of Deaf/HoH students in mainstream and special education schools.

III.2.1 Findings relating to research question 1

The findings below relate to research question No. 1: "What are the teachers' perceptions of including deaf/HoH children in mainstream classes, social competence, academic competence, and self-identity development of children with special needs in general and Deaf/HoH children in particular, who study in special or mainstream education framework?"

Content analysis of this question gave rise to two key issues:

1. Teachers' perceptions for and against inclusion.
2. Optimal inclusion in a mainstream class.

Theme 1: Teachers' perceptions for and against inclusion

The mainstream education teachers that included Deaf/HoH students in their classes, stated that they themselves were in favor of inclusion when it had added value for both the including and included students:

"It is important to include special education children in mainstream education. They do not live in a bubble, they go out into the street later, and even the "mainstream" children need to know and include them, as well as interact with them. It starts at young age" (Orit, mainstream education).

Nevertheless, the teachers pointed out that some of their colleagues were against the inclusion because it involved additional workload in class teaching, making teachers' work more difficult: *"For some teachers, inclusion is a burden, it is more difficult. They say that classes are challenging in themselves as it is. If you consider the additional complexity of an included child in the class, it becomes very difficult"* (Odelia, mainstream education).

The special education teachers that taught classes of Deaf/HoH students, indicated similar arguments in favor of inclusion in mainstream classes, emphasizing the need of these students to meet hearing people in their natural environment:

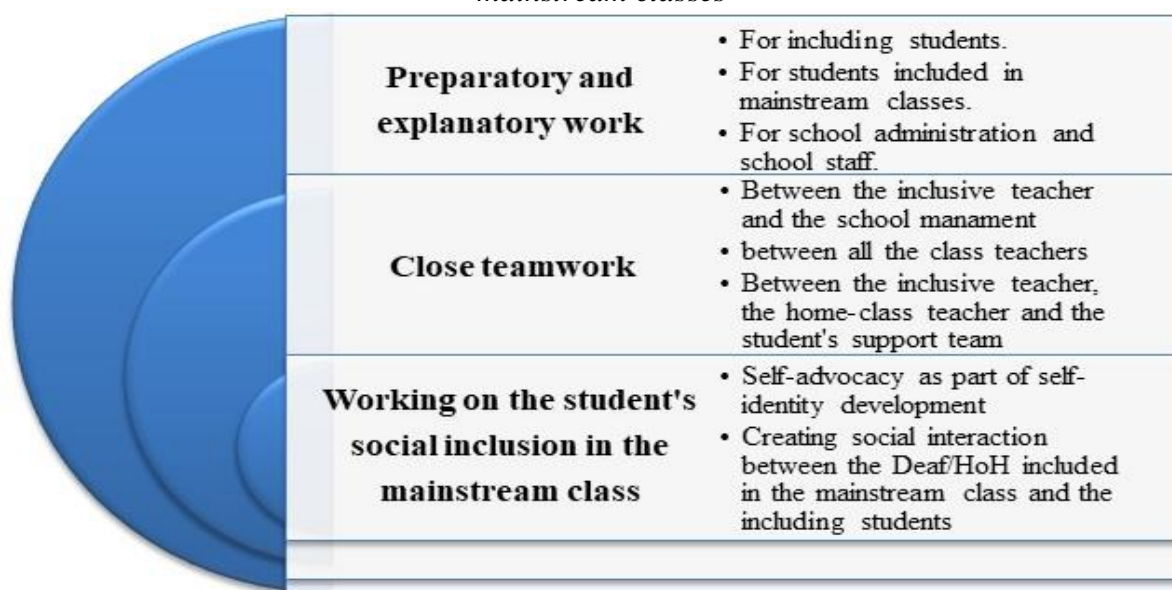
"I am in favor of inclusion. Somewhere along the way, these students with special needs deserve to be in the environment to which they are accustomed. This is due to the fact that they, too, come from hearing homes, with hearing friends and neighbors. This is their natural environment" (Noa, special education for Deaf/HoH students).

However, another teacher said that they children in the Deaf/HoH class objected to inclusion in a mainstream class and were afraid of it: "The inclusion is rather artificial. The children do not really want to be included and go out of their special classes. We convince them to do it... it is like a punishment for them" (Daniel, special education teacher of Deaf/HoH students).

Theme 2: Optimal inclusion in a mainstream class

Figure No. 5 depicts the categories regarding the optimal inclusion that were obtained from the content analysis. In their remarks, the teachers referred to factors that promoted the children's optimal inclusion in mainstream classes

Figure 5: Teachers' perceptions of the optimal inclusion process of Deaf/HoH students in mainstream classes



Preparatory and explanatory work	<ul style="list-style-type: none"> • For including students. • For students included in mainstream classes. • For school administration and school staff.
Close teamwork	<ul style="list-style-type: none"> • Between the inclusive teacher and the school manament • between all the class teachers • Between the inclusive teacher, the home-class teacher and the student's support team
Working on the student's social inclusion in the mainstream class	<ul style="list-style-type: none"> • Self-advocacy as part of self-identity development • Creating social interaction between the Deaf/HoH included in the mainstream class and the including students

Both mainstream and special education teachers indicated that, achieving an optimal inclusion, required first and foremost an appropriate preparation towards inclusion on the level of the included students, the including students, and the management and mainstream class staff. The teachers underscored the importance of preparation to the including students so that they could understand the disability and the way of including the students in the society of the class, and demonstrate empathy. Moreover, they specified that in order to have a successful inclusion, it was necessary to have a constant and in-depth teamwork, involving the inclusive teacher and the other class teachers and school staff. Another aspect that came up in the interviews was the essential need for social inclusion of Deaf/HoH students in a

mainstream class, being another layer in their optimal inclusion: *"It is very important to start with the social aspect. If they succeed in social inclusion, then there will also be learning"* (Maya, special education teacher for Deaf/HoH students).

Furthermore, the teachers mentioned the importance of self-advocacy as part of the self-identity development of the Deaf/HoH students. These students should know how to engage in self-advocacy, comprehend their disability and its implications, and maintain the rights they deserve, so that they would be able to be optimally included in a hearing environment. Such an environment could support and assist them in the inclusion process:

It is important to let them be independent, so that when they go out into the world, they will be able to cope with it, with their disability and what it entails (Daniel, special education teacher of Deaf/HoH students).

Moreover, the special education teachers who taught in a special education class for Deaf/HoH students, and took some of their students out for inclusion in a mainstream class, emphasized that their contact with the inclusive teachers was very important. It facilitated a proper and good communication between them, the inclusive teachers, and the included students and their parents.

III.2.2 Findings relating to research question 5

Findings related to the implication of Deaf/HOH students' inclusion in mainstream and special Education classes

The findings below relate to research question No. 5a: "How do teachers perceive the implications of including Deaf/HoH students in mainstream or special education classes?"

The teachers in mainstream and special education indicated that the inclusion of Deaf/HoH students in a mainstream class had some implications. Sometimes, the inclusion contributes to the students and their environment, and sometimes less. However, the inclusion undoubtedly had an impact and the included students and their environment should know how to cope with these implications. Furthermore, the teachers said that the special education framework was smaller and more containing, being more suitable for satisfying the needs of every child: *"I think that the inclusion should be adjusted to each student. I believe that not all special education students can be included in mainstream classes"* (Maya, special education teacher of Deaf/HoH students).

Findings related to home-class teachers' involvement in Deaf/HoH students' inclusion in mainstream classes

The following findings relate to research question No. 5b: "How do teachers perceive the involvement of home-class teachers in Deaf/HoH students' inclusion in mainstream classes?"

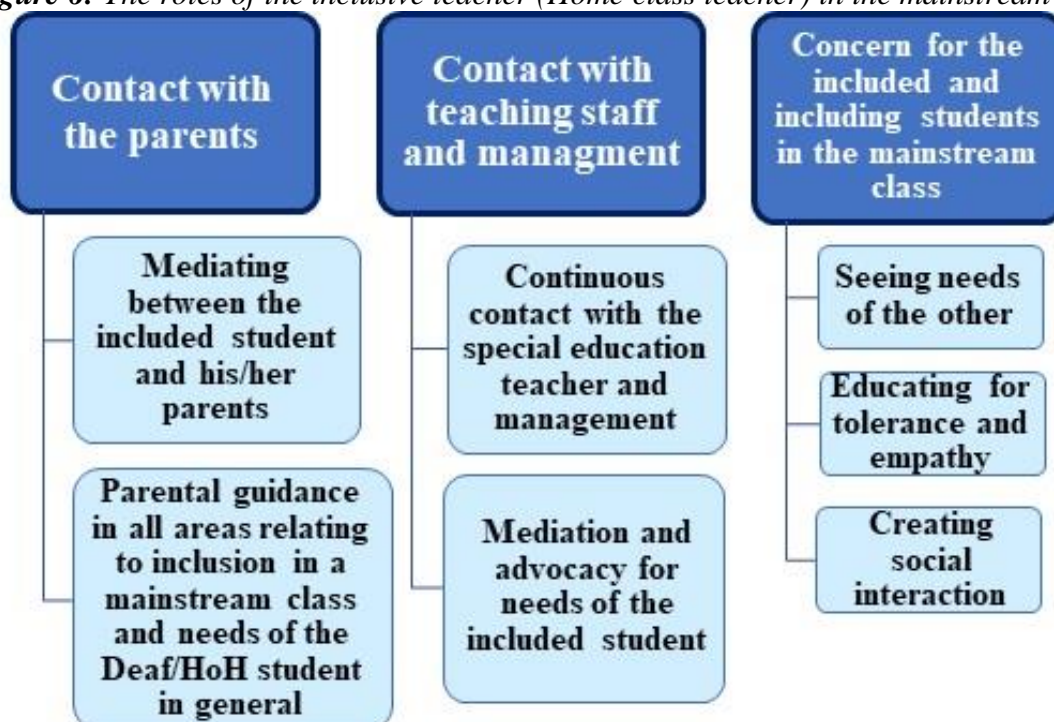
The teachers in mainstream and special education pointed out that the including teacher, namely the home-class teacher in the mainstream class, played the most meaningful role in creating the optimal inclusion for Deaf/HoH students included in a mainstream class. The home-class teacher of the mainstream class welcomes the Deaf/HoH students and includes them in her class. She has to contain the included students as well as the other class students, giving explanations both to the class and the included students. She must be highly aware and ensure that these students are optimally included in the class.

In case of a problem, the home-class teacher has to report to the home-class teacher of the Deaf/HoH students and to the therapeutic team so that they can help her and the included student. She is the mediator between the mainstream teaching staff and the school management, the included students, and their parents:

"My role as home-class teacher of the Deaf/HoH class is to mediate between my student who is included in the mainstream class, the teachers in the mainstream class, and the parents. I have to guide and direct everyone just like on a ship, of which I am the captain" (Noa, special education teacher of Deaf/HoH students).

Figure No. 6 illustrates the categories and subcategories obtained from the content analysis.

Figure 6: The roles of the inclusive teacher (Home class teacher) in the mainstream class



The findings indicated the need for mediation between the included students and their parents, their guidance about everything related to the importance of inclusion in a mainstream class, and their recruitment as partners to a successful inclusion. Another aspect

that came up was the need for mediating and advocating the students' needs to all the school management and teaching staff: "My function as a home-class teacher for the Deaf/HoH is, primarily, to defend their needs, trying to explain to the teachers, the school staff and to the children who include them, how eventually they are normal children, only with special needs" (Maya, special education teacher of Deaf/HoH students).

Another aspect related to the degree of concern for the included and including students regarding educating for tolerance and patience, developing empathy, seeing the needs of the included children, creating social interactions and common social games for an optimal social inclusion of included students in a mainstream class, together with the including students, as well as providing explanation to including students.

Findings relating to difficulties in inclusion a Deaf/HoH student in a mainstream class

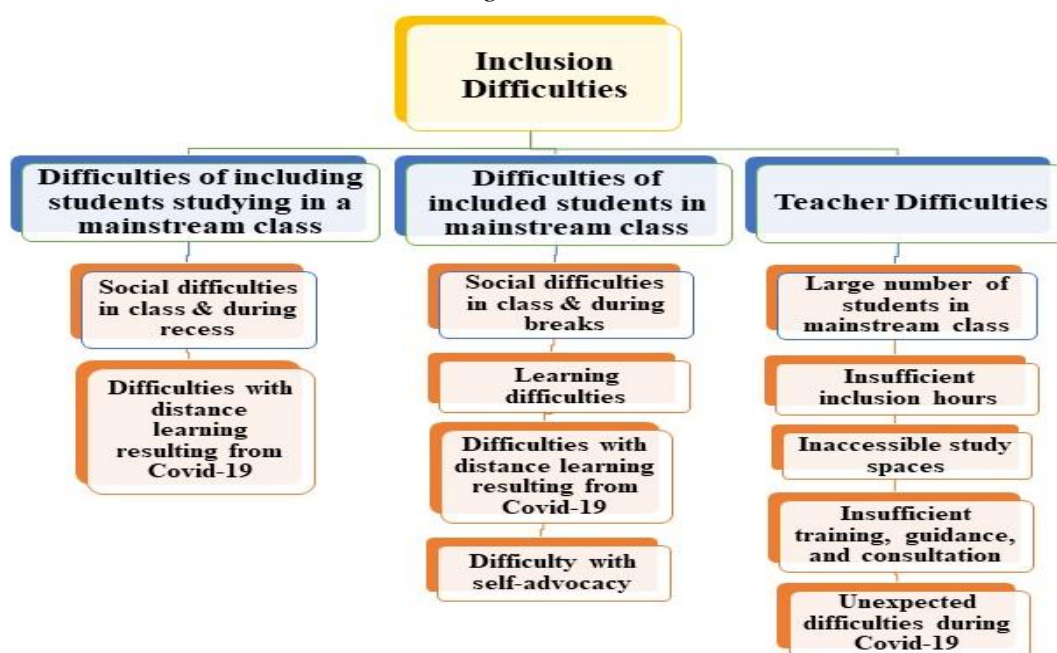
The findings below relate to research question No. 5c: "How do teachers cope with the inclusion of Deaf/HoH students in their class?"

The content analysis of this question yielded three main categories associated with the difficulties of inclusion:

1. Difficulties encountered by the including students
2. Difficulties encountered by the included students
3. Difficulties encountered by the teachers.

Figure No. 7 illustrates categories and sub-categories obtained from the content analysis regarding inclusion difficulties.

Figure 7: Difficulties of teachers, of included students and of including students in the regular class



The difficulties encountered by the including students - referred to social, communicational, and emotional difficulties of the included students in and out of the classroom. They have to consider the others, contain them, assist them and, at the same time, overcome their own personal difficulties and meet the expectations of the teachers who gave them a role that includes responsibility and help for the included student.

The difficulties encountered by the included students – related to social difficulties in class, during breaks, in the academic field, distance learning following the COVID-19 pandemic, self-identity development, and self-advocacy. They have to be able to cope with all these factors, face social situations that are difficult to resolve, establish friendships and maintain them, explain their difficulty, their wishes, engage in self-advocacy, ask/receive help, flow with system changes, receive criticism/authority from all their environment, cope with all these factors, and be strong. In order to do so, they need help.

The difficulties encountered by the teachers – the teachers attested that they coped with various difficulties in the system. These included knowledge acquisition, in-service training courses that were dictated to them by the system and that were not always relevant to the field, coping with a big heterogeneous class, with a limited number of inclusion hours for children with special needs, with classes that are inaccessible from an acoustic and technological aspect, and with difficulties of including students with special needs, parents, system constraints, as well as many other difficulties caused during the COVID-19 pandemic.

Findings related to the coping with inclusion process difficulties

The content analysis of the teachers' interviews regarding different ways of coping with inclusion process difficulties yielded various coping methods that the teachers developed.

Figure 8: *Coping with Inclusion Difficulties*



The teachers in both mainstream and special education were very creative. They found varied solutions to the difficulties they encountered in the inclusion of Deaf/HoH children in a mainstream class.

Developing adapted teaching methods - working in groups:

In order to manage very big classes with a high number of students with different and varied needs, the teachers changed their teaching methods so that they could reach the included students. Some teachers decided to teach in groups and create a group of strong students who helped included students who encountered difficulties. Some of them switched to working with the included students while the rest of the class worked independently.

Dealing with accessibility of the learning space:

The special education teachers for Deaf/HoH students attributed great importance to the issue of accessibility, specifying it required much consideration when choosing the class and adapting it to the learning needs of the Deaf/HoH students.

Coping with inadequate training, guidance, and tutoring:

The teachers stated noted that they had often needed to include students in their mainstream class without any appropriate training or instruction.

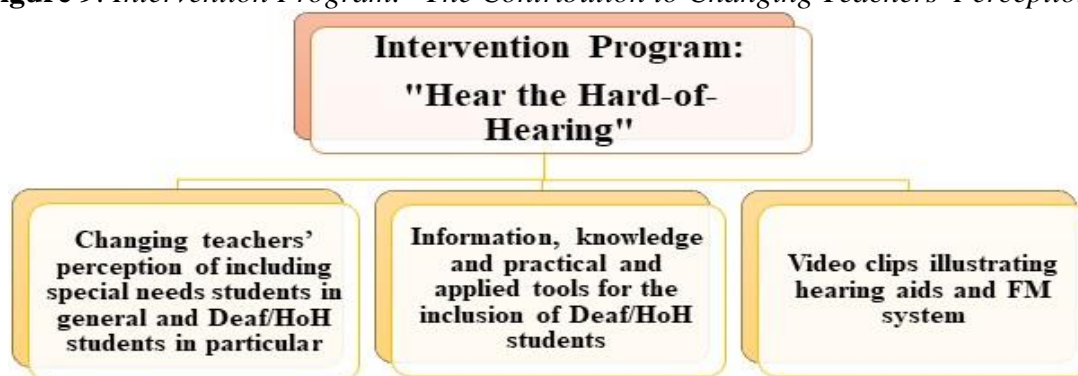
Coping with distance learning during the COVID-19 pandemic:

The teachers found varied meaningful ways of coping with the constraints stemming from the outbreak of the COVID-19 pandemic like learning in capsules (classes with a small number of students), and with students who did not always agree to participate in lessons via Zoom. Most of the interviewed teachers attested that they tried paying more attention to the socio-emotional aspect, in addition to the academic aspect.

III.3 Intervention Program - The Contribution to Changing Teachers' Perceptions

Mainstream and special education teachers expressed their satisfaction with and support of the intervention program, built particularly for this study. Most of the teachers underscored the video clips that contributed to the illustration and in-depth comprehension of the individual and systemic needs of the Deaf/HoH students. Some interviewees indicated the information, knowledge, and tools they had received in the in-service training programs that they applied in their class. They reported that they were successful and that the information had served them until now and had changed their perception. Figure 9 describes the contribution of the intervention program to the change in teachers' perceptions, as emerged from the analysis of the interviews.

Figure 9: Intervention Program: "The Contribution to Changing Teachers' Perceptions"



III.3.1 Changing teachers' perceptions of including special needs students in general and Deaf/HoH students in particular

The findings obtained from the interviews illustrated that the intervention program that was specially built for this study, included accessible concrete knowledge and information about Deaf/HoH students, and that was accompanied by video clips, was very meaningful for the teachers. The interviewees mentioned that the intervention program had opened their eyes and had changed their perception of coping and addressing Deaf/HoH students. Roni, a mainstream teacher, emphasized that the intervention program, delivered by the researcher at his school, was meaningful for him and changed his perception of including Deaf/HoH students: *"only your in-service training course was meaningful and provided me a response that greatly helped me with the Deaf/HoH students included in my class. It changed my line of thought about the students and their needs"*. Orit, a mainstream teacher, supported Roni's words, stating that the intervention program gave her a lot of knowledge and tools that changed her perception of including Deaf/HoH students. She implemented these tools and kept the special bookmark handed out during the workshop. Rita, a mainstream teacher, identified with her mainstream education colleagues. She underscored that she believed all teachers should attend the intervention program built particularly for this study:

"I think that every teacher must attend your program. It is extremely important and useful, particularly when you include Deaf/HoH students at school and in your class. I myself am hard-of-hearing and this only made me realize that I have to be meticulous and when I inculcate learning material, I must put on me the FM system that is really essential for these students".

Similarly, the special education teachers highlighted the importance of the intervention program and the change of perception it evoked in them. Maayan, a special education teacher for Deaf/HoH students, pointed out that, due to the intervention program she had attended, she understood the importance of inclusion, the social needs of Deaf/HoH students, and this

changed her pattern of thinking. Maya, a special education teacher for Deaf/HoH students, supported her and underscored the importance of the intervention program as mentoring of special education teachers, and the more so of mainstream education teachers:

"If for special education teachers it is not enough, then mainstream teachers ... need more training... Only then, in your program, I realized how important it was for teachers to always put on the FM system, and that the students take the FM system with them also to physical education lessons, as well as to the including classes ... I remember this as something significant that I have taken from your workshop, that I remember very well from this aspect, and it actually changed my line of thinking".

As shown by the findings, both mainstream and special education teachers emphasized the importance of the intervention program, its meaning and contribution to the change in the way of thinking about the inclusion of mainstream education in general, and Deaf/HoH students in particular.

III.3.2 Information, knowledge, practical and applied tools for the inclusion of Deaf/HoH students

The intervention program sessions consisted of common activities for implementing the provided knowledge and tools. The interviewees indicated that the applied knowledge encompassed in the program was very meaningful for them. During his interview Roni, mainstream teacher for Deaf/HoH student, pointed out that the information and tools he received in the intervention program assisted him personally: *"We had your in-service training course that dealt with the inclusion of Deaf/HoH students. The information you shared with us, greatly helped me personally".*

Orit, a mainstream teacher, identified with Roni's words and emphasized that the information provided in the intervention program was essential and made a great contribution to her: *"The information you gave us and the various tools for an optimal inclusion... really helped me ... I had no knowledge of this topic, you came with a lot of energy, enthusiasm, as well as knowledge, it was great".* Maya, a special education teacher for Deaf/HoH students, reinforced the teachers' words, highlighted the importance of the information and tools provided in the intervention program: *"... You came to our school and delivered your program. It was amazing and meaningful. I remember that during the workshop, you showed us many things about the Deaf/HoH... I thought I knew everything and then I realized I didn't...".*

The interviews illustrated that the information, knowledge, and practical and applied tools, provided by the intervention program built especially for the purpose of this study, were very

meaningful for both mainstream and special education teachers, changing their worldview about the inclusion of Deaf/HoH students.

III.3.3 Video clips illustrating hearing aids and FM system

The intervention program comprised sessions in which unique video clips were broadcast. They illustrated the way Deaf/HoH students heard with/without a hearing aid and a FM system. Maayan, a special education teacher for Deaf/HoH students, pointed out that the video clips helped her understand how important it was to install the FM system. It assisted the students in optimally understanding what was said in class or in a noisy environment in which learning or activity took place: *"You came to us and delivered your ... training ... with explanations and video clips that made it easier for us to comprehend the world of my students and the importance of implementing the FM system..."*.

Maya, a special education teacher of Deaf/HoH students, supported the teachers' words and underscored more than anyone else the importance of the video clips that were most essential for her: *"You illustrated how the children heard with and without a hearing aid, and ... the FM sound system that amplified the sound, and how meaningful ... for our students. This really surprised me and I remember it very well"*.

The interviews showed that the video clips made a meaningful illustration to the teachers who attended the intervention program. Yet, the tools and the knowledge provided in the program were also very significant to them and helped them in coping with the inclusion of Deaf/HoH students.

CHAPTER IV: CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the factual and conceptual conclusions drawn from the research findings, the implications of the research, the limitations, the contribution to knowledge and the recommendations for further research.

IV.1. Main Factual and Conceptual Conclusions

IV.1.1 Factual conclusions

On the factual level, the research findings gave rise to several conclusions:

1. In contrast to what was expected, the quantitative findings of the study showed that there was no substantial change in the teachers' perceptions towards the integration of students with special needs within the framework of regular and special education even after an

intervention program due to their initially high perception. As well as their perceptions towards social and academic competence and the development of self-identity.

2. The background variables of the teachers (such as gender, training, teaching seniority) do not have an effect on their perceptions towards the integration of students with special needs in general and the hard of hearing and deaf in particular.
3. The most essential and important conclusion of this study was the importance of the intervention program, built especially for this study. The program made concrete knowledge and information accessible to Deaf/HoH teachers, and was accompanied by unique video clips that illustrated the way of hearing of the students. The intervention program was highly meaningful to the teachers. It changed their perception of coping and including Deaf/HoH students in their class. Hence, the comprehensive intervention program, with an emphasis on social, academic skills and self-identity development, developed by the researcher, could contribute to a better inclusion of students with special needs in general, and Deaf/HoH students in particular.
4. Importance is attributed to the preliminary preparations of the included and including students, as well as the entire school staff and management, towards the inclusion of Deaf/HoH students in special education mainstream frameworks. Concern for satisfying the needs of all the students by education for patience, tolerance and empathy, creating social interaction and common games, and acquiring tools to identify social abilities and strengths of self-identity, will facilitate a successful inclusion.
5. Emphasis should be placed on the parents' cooperation and training and on providing tools to identify social abilities and strengths of self-identity, and to develop them among the children, since parents are an integral part of integrating their children into regular classes.
6. It is important to adapt the learning framework to the needs of the deaf/hard of hearing students, in order to create an optimal and empathetic climate through consideration, reciprocity, positive communication and social interaction between the included and inclusive students. The accessibility of learning spaces and the development of adapted teaching methods are necessary for the included deaf/hard of hearing students in the education system, since not every framework is suitable for every student.
7. The teachers must be trained in the field of special education and inclusion already in teacher training institutions, as well as during the teaching occupation in the school. Thus, they will acquire more extensive knowledge in this field.

8. Great importance is attributed to the synchronization and cooperation between the including home class teacher and the special education teacher in the deaf/hard of hearing class. This will improve inclusion, help recognize the social skills of special education students and develop the self-advocacy of the included students in general and the hard of hearing and deaf in particular.
9. The teachers encountered difficulties related to the integration of deaf/HMS students, especially during the period of this study, that is, the COVID-19 epidemic. This required the teachers to build and deliver lessons in new ways that were not accessible to all students. These methods included technological means and techno tools -Pedagogues that emphasized social-emotional learning. The involvement of all students in remote teaching was poor, and the special education students had difficulty following the lessons delivered via Zoom.

IV.1.2 Conceptual conclusions

On the conceptual level, the research findings gave rise to the conclusion that attendance of the intervention program affected the perceptions of both mainstream and special education teachers. It made them more understanding and empathic to the included and including students, knowing how to instruct the including students in the needs of the included students. The intervention program helped the teachers in a professional way after having acquired the tools and knowledge of optimal inclusion. Moreover, it improved the teachers' capabilities of understanding the special and personal needs of the Deaf/HoH students. This leads to the conclusion that the intervention program "Hear the Hard-of-Hearing" constitutes a meaningful factor that impacted the perceptions of the attending mainstream and special education teachers, regarding the inclusion of special needs students in the various inclusion frameworks.

IV.2. Research Contribution to Knowledge - Theoretical, Methodological, and Practical

IV.2.1 Contribution to theoretical knowledge

Previous studies focused on the difficulties encountered in the inclusion of Deaf/HoH students, inclusion that constituted a key issue in the latter's life with respect of social, academic, and educational aspects. Other studies focused on the needs of included students as far as language development was concerned. However, only few studies explored the issue of Deaf/HoH students in mainstream classes, and even a smaller number of studies focused on social-emotional aspects of the students' development. Moreover, a small number of studies

related to teachers' perceptions of social competence, academic competence, and self-identity development of Deaf/HoH students included in mainstream and/or special education frameworks.

Consequently, the researcher developed a new intervention program "Hear the Hard-of-Hearing" designed to make inclusion accessible in a practical and experiential way. The findings of this study shows that it assisted mainstream and special education teachers in acquiring vital knowledge by practical workshops, video clips and practical tools in order to understand the personal needs of these students, as well as the methods of optimal inclusion. The intervention program demonstrated the gap between the existing knowledge of mainstream and special education teachers, and their empathic comprehension of those included students.

This study contributes to theoretical knowledge in the field of inclusion. It suggests a change in policy regarding teachers' training in education institutions, without separating between knowledge acquisition of mainstream teachers and special education teachers. Thus, all teachers and nursery school teachers can acquire knowledge in the field of special education and make it accessible.

IV.2.2 Contribution to methodological knowledge

This study applied an original questionnaire, developed by De-Markesh and Ulianitski [the researcher] (2014), aiming to explore the self-identity development of Deaf/HoH students. The questionnaire focused on social competence and self-identity of Deaf/HoH students. This questionnaire can be used also in other cultures and countries in studies that investigate the inclusion of Deaf/HoH children in various inclusion frameworks.

IV.2.3 Contribution to practical knowledge

On the practical level, the intervention program "Hear the Hard-of-Hearing" developed for the purpose of this study, can be an inseparable part of the education system' policy, serving as a means for training both mainstream and special education teachers, regarding special needs populations in general and Deaf/HoH students in particular. The program can constitute a knowledge-based in-service training course for teachers who are working now in the education system and include Deaf/HoH students in their class. It can provide theoretical and practical knowledge, as well as practical tools, for an optimal inclusion, contributing to pre-service teachers who learn in teacher education frameworks. In countries that include students with special needs in mainstream classes, this program can be implemented and be adapted to additional countries and cultures.

IV.3. Research Limitations

The first limitation related to a geographic location. This study was conducted in the northern and southern districts of the State of Israel. The central district was not investigated and this limited the research population to two main foci and prevented a wider perspective. The second limitation related to the level of generalizability. The intervention program was assimilated successfully. However, a considerable part of it was delivered during the COVID-19 pandemic. This made it extremely difficult for the researcher to come to the schools that participated in this study and were located in the north and south of the country, due to the lockdown periods. Consequently, the researcher had to visit the same school many times in order to finish the research procedure and have the teachers respond to the questionnaires after the intervention program. The third limitation related to the researcher's position. The researcher is an expert in the field of Deaf/HoH students and actually teaches students from this population and is very close to the research topic. The researcher was aware of this limitation, followed the interviewees' words, gave them room to express their opinion freely, and did everything possible in order to avoid the effect of her affinity to the research topic (Shkedi, 2003, 2011).

IV.4. Recommendations

The following recommendations are based on the research conclusions.

1. It is recommended training teachers about the population with special needs in special education already in teacher education institutions and, thus, limit the gap between mainstream and special education teachers.
2. It is recommended building a long-term practical intervention program for both teachers and students, while listening to the participants before, during, and after the program.
3. It is recommended involving and mobilizing the parents to the inclusion process of their children, and plan unique instruction programs for the parents.

IV.5. Future Directions

Based on the findings and conclusions of this study, there are several directions for future studies:

1. Conduct future study in several locations in Israel and around the globe.
2. Explore different sectors and make a multicultural comparison.
3. Investigate from the viewpoint of included and including students in their learning environment – the class – can shed additional light on social competence, academic

competence, and self-identity development of students with special needs in general, and Deaf/HoH students in particular.

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