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LONG ABSTRACT

**The Development of a Sense of Coherence in Teaching
Situations among Special Education Pre - Service Teachers**

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Abstract

The research engages in the development of a Sense of Coherence in Teaching Situations (SOCITS) among special education pre-service teachers in the first year and the third year of their studies.

The research includes 136 undergraduate special education pre-service teachers from a college in the center of Israel, first year and third year students.

The researcher is a pedagogical instructor in the domain of Special Education, teaches and mentors pre-service teachers both on the professional and personal level.

Research Goals: examining the development of the special education pre-service teachers' Sense of Coherence in Teaching Situations; finding characteristics of the three components of SOCITS- comprehensibility, manageability and meaningfulness; identifying the factors which have enhancing and inhibiting influence on SOCITS.

Methodology: Mixed-methods Research. Research tools: SOCITS' questionnaire, reflective diaries.

Main findings: In the examination of each of the SOCITS components, sense of Meaningfulness in teaching situations was found as the highest, most intensive and the most dominant of the three SOCITS components both in the first year of special education pre-service teachers' studies, and in the third year of their studies. The sense of Comprehensibility in teaching situations was found to be better reflecting SOCITS in the third year of studies than in the first year. Sense of Manageability in teaching situations and its connection to the sense of Meaningfulness in teaching situations were found as reflected in the special education pre-service teachers' SOCITS already in their first year of studies, and they were more clearly reflected in their third year of studies. The level of SOCITS and of each SOCITS' component did not change from the first year of special education pre-service teachers studies to their third year of study. Characteristics of SOCITS and factors which have enhancing and inhibiting influence on SOCITS were found.

Conclusions: The conclusions include a new practical model which can develop and enhance SOCITS. The model includes two major components: (1) characteristics of SOCITS; (2) factors which have enhancing and inhibiting influence on SOCITS and its three components - comprehensibility, manageability and meaningfulness in teaching situations.

The model is designed so as to serve as a guiding tool and can help pedagogical instructors in focusing and advancing their work. The model enables to construct an intervention program where SOCITS, its meaning, its components, and the relationship among them will be taught.

The change and development in Sense of Coherence in Teaching Situations (SOCITS) of the third year special education pre-service teachers were found to be reflected in the connections between the three components of the Sense of Coherence in Teaching Situations (SOCITS) but not in the level of the Sense of Coherence in Teaching Situations (SOCITS) in each component and in the general score.

Key words: special education pre-service teacher, special education training program, stress and coping, SOC, SOCITS, characteristics and factors of SOCITS.

INTRODUCTION

The research engages in Sense of Coherence in Teaching Situations among special education pre-service teachers. It focuses on the development of Sense of Coherence in Teaching Situations (SOCITS) in the first year and the third year of the special education pre-service teachers' studies.

The researcher is a pedagogical instructor in a college in the domain of Special Education, and teaches and mentors pre-service teachers both on the professional and personal level. The need to find the appropriate way to support the pre-service teachers and enable them to develop their teaching process emerged from the field.

College or university students perceive academic life to be stressful and demanding (Wan, 1992, Hammer, Gribbsby & Woods, 1998 at Heiman, 2004). For many of them the pursuit of higher education is a transition time that is marked by a set of requirements relevant to the setting. They report high levels of academic stress which considers the relationship between individual and environment, the qualities of the individual and the nature of the environmental event all together (Lazarus and Folkman, 1984). Special education pre-service teachers must adapt not only to their role as students, but also to the obligations inherent to their chosen profession (Dziegielewski, Roest-Martl, & Turnage, 2004; Kamyra, 2000 at Wilks, 2008).

Internationally, research studies have confirmed that teaching has become one of the more stressful occupations in recent years (Billingsley, 2004; Borg 1990; Eloff, Engelbrecht, Swart & Oswald, 2002; Pithers & Soden, 1998 in Jacobs, 2010). In addition, research has found special education to be more demanding than general

education and mainstream education (Brown, Howcroft and Jacobs, 2006). The process of teaching is complex and requires academic, emotional and behavioral coping. This complexity establishes a pressuring factor, which makes it hard for the pre-service teachers to withstand the stress and cope.

CHAPTER I:

THE SPECIAL EDUCATION PRE – SERVICE TEACHER IN THE WORLD AND IN ISRAEL

I.1.The Special Education Concept, Characteristics and Teacher's Role

The special education frameworks in the western world have developed gradually, from segregation to full inclusion.

Special teaching and education methods started developing in the early years of the 19th century, under the influence of the humane ideology of human rights. It was then that medical-learning frameworks, special schools and special classes which operated alongside regular schools on a daily basis were developed (Burak, 2007).

In the first half of the 20th Century, special classes were added in the normative education system. The notion of integration started spreading and developing in the 1970's. In the 1980's the Regular Education Initiative movement (REI) was established, advocating the integration of special education into the normative education system. Since the 1990's, the tendency to abolish segregation and fully integrate children with special needs into normative classes has been on the increase.

The process described above has been characterized by a perceptual change and a transition from the traditional "teaching the book" to the new "teaching the pupil" approach. This approach enables pupils to connect that which has been learnt to "real life" (Fuhai and Wenxue, 2008). The change was accompanied by various approaches to special education, starting with the medical model, which is historically the earliest, to contemporary approaches. Each approach has implications on diagnosis, categorization and education methods.

Following changes in values and human knowledge, there have been developments in the perception of special education; approaches to teaching have changed and the characteristics of teaching in special education have been shaped accordingly.

The following model presented in figure 1.I describes the development of the different approaches and methods deriving from them:

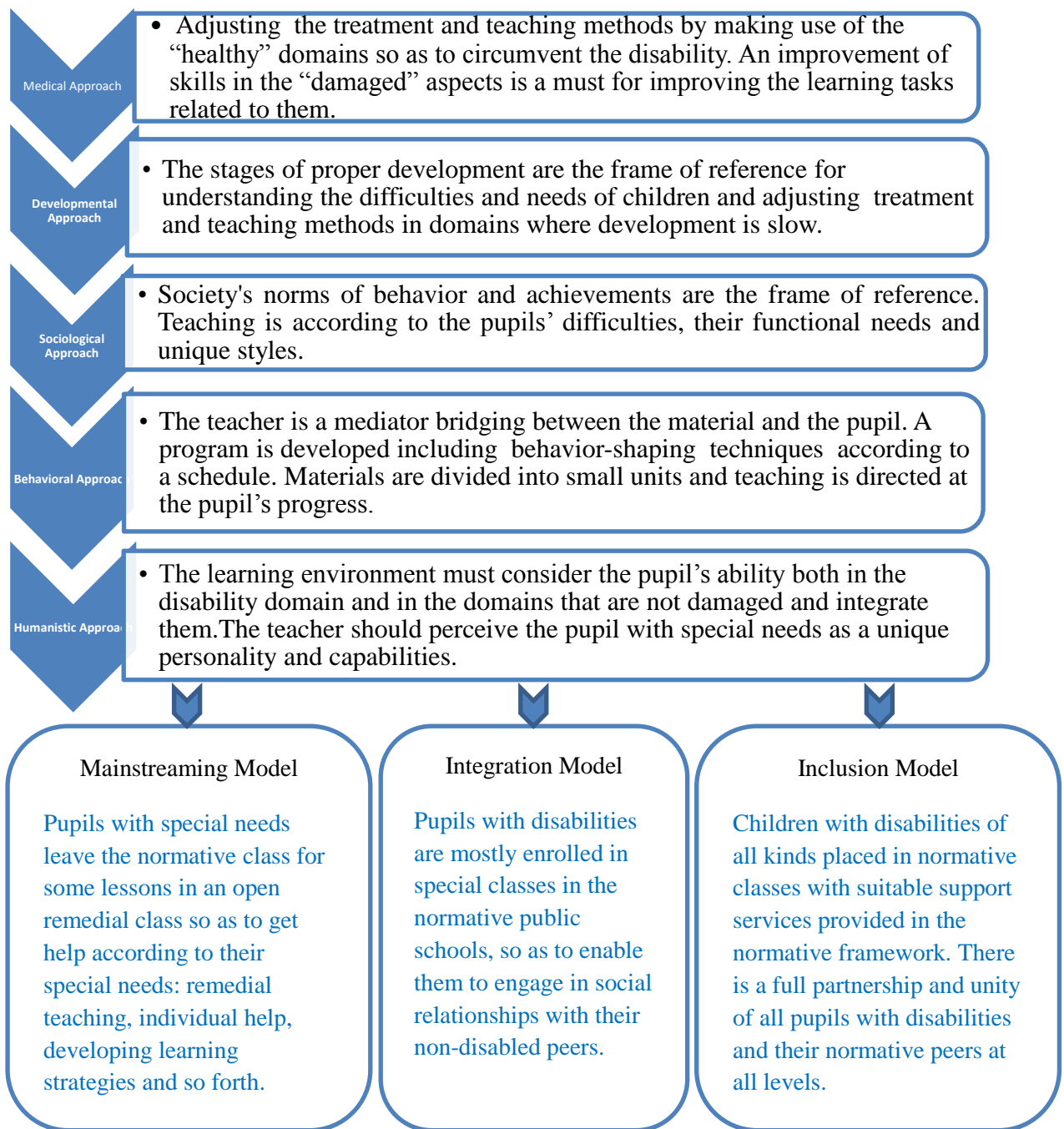


Figure 1.I: Development of different special education approaches

In light of the development of the different approaches and methods, teacher's roll had to go through changes as well. The diversity among learners requires proper attention which will enable them to realize their potential. The teacher has to address these needs and refer each pupil as an individual, get to know the pupil’s strong and weak points and adjust the teaching and education methods to the pupils’ special needs.

The next two sections will describe the special education as exists today worldwide and in Israel.

I.1.1. Special Education in the World

The United Nations and its agency, UNESCO, have played a significant role in promoting inclusive education. In June 1994 representatives of 92 governments and 25 international organizations met in Salamanca, Spain. The resulting agreement, known as "the Salamanca Statement", demonstrates an international commitment to inclusive education. With the incentive provided by the UN and UNESCO, it is not surprising that virtually all countries have policies on inclusive education, or are in the process of developing them. Most countries make use of an **individual educational program** for students with special needs. It serves both as an expression and specification of the degree and type of adaptations to the mainstream curriculum and as a tool for evaluating the progress of pupils with special needs. It may also serve as a contract among the different participants: parents, teachers and other professionals. Conclusions drawn from different studies (Klinger and Vaughn, 2002, Fisher, Frey & Thousand, 2003) led to the development of a new perception of the teacher's role in special education: a teacher with specific expertise that can move around different schools according to the schools' needs. Teaching special education involves communicating and coordinating with others involved in the child's well-being, including parents, social workers, school psychologists, occupational and physical therapists, school administrators, and other teachers. They all have to meet the individualized needs of the student within an inclusive environment and the special education teacher is the "case manager".

I.1.2. Special Education in Israel

Avisar and Layser (2000) describe the developments in Israel, which were similar to the developments in the world, but occurred later.

The Special Education Law was published in Israel in 1988. The law relies in its spirit and requirements on the American law of 1975. The essence of the law is the responsibility placed on the state for providing education to children with special educational needs. The various approaches to special education have dictated different types of teaching over the years, but the goal of teaching in special education has remained the same – to advance the pupils academically, socially and emotionally and prepare them for their future lives as mature persons who are integrated into society and their communities (Israel, The Ministry of Education Director General circular 66/3a, November 2005).

In Israel, the advancement of pupils with special needs is done with the **class curriculum** - a core special education curriculum which is mandatory in all special education frameworks and the **personal curriculum** that is determined by the pupil's needs in the domains of education, learning and treatment in the educational framework where he or she is enrolled. As of 2012, in the framework of a Ministry of Education strategic program, a new goal was set, which is known as the "inclusion goal", which engages in the integration of learners and their advancement within general education, while expanding the ability to include them and providing various solutions to their needs (The Inclusion Book, 2012). The inclusion model accepted today pertains to the concept of "quality of life"- each pupil has different needs and the appropriate education can be provided in the normative class, with a multi-level curriculum and different contents of the same curriculum. Special education teachers play an important role in the implementation and process of inclusion in schools, as the special education field is being reshaped as result of the current challenges and demands. Characteristically, the special education teacher's role has largely focused on providing specialized instruction to students with disabilities; spend time assessing students and supporting their behavior. Moreover, special education teachers have several roles and responsibilities that extend beyond working directly with children. They interact with students' families and work collaboratively with other professionals. Specific responsibilities include instruction, management of behavior, coordinating support services, working with paraprofessionals, maintaining positive parent relationships, and advocating for children with disabilities. Special educators also work with other professionals on interdisciplinary teams in order to address students' unique needs. They have to provide a holistic picture of the child's personality and the child's functioning in his/her family environment as well as the school's social environment (Raiter, 2006).

I.2. Training Special Education Pre-Service Teachers In the World and In Israel

I.2.1. Models and Features of Special Education Teacher Training Programs in the World

The review of literature pertaining to teacher education depicts the complexity of the special education teacher training programs that stems from the changing perception

of special education and reflects both similarities and difference between the programs. The review reveals that special education teacher training programs realized that extensive, well-planned field experiences are important if teachers are to apply content from their teacher education programs. Additionally, there is an awareness of the importance of ensuring that pre-service teachers have opportunities to practice what they learn in well-supervised settings so that they can make connections between theory and practice. Thus, special education teacher educators have worked to craft programs that integrate course work with well-designed and supervised fieldwork. Furthermore, special education programs have stressed the importance of collaboration between faculty, school personnel, and pre-service and in-service teachers. The collaboration can also help prepare teacher education graduates to meet the needs of a diverse student population. Special education programs in teacher education, however, are quite diverse in terms of program orientation. Some programs maintain a more positivist view of educational practice and others have moved toward more constructivist views. The programs tend to focus on more generic pedagogy -instructional methods; assessment; individualized education plans; collaboration; and not emphasis on subject-matter pedagogy. Different studies suggested that the existing separation between normative and special education in teacher education programs, does not serve the educational approach regarding education for all, including pupils with special needs. An additional demand for making changes in teacher education programs derives from the need to adjust schools to the dynamic and changing reality in which they operate and allow for the implementation of “contemporary pedagogy”. “Contemporary Pedagogy” defines the goals of education and the image of the learners in the 21st Century education system and describes the components of the 21st Century school (including programs for adjusting teacher education colleges to education in the 21st Century – State of Israel, Ministry of Education, Department of Teachers’ Professional Development, 2011, Schleicher, 2012).

I.2.2. Special Education Training Program of the Population under Study in Israel

The curriculum of the B.Ed. studies in special education (the special education teacher training program) in the college where this research was conducted is anchored in a humanistic approach which respects human diversity and regards it as a resource for advancing each individual in the educational domain. It is also based in the inclusive

educational approach and the integration of special needs children into mainstream school life. The special education teacher training program offers two areas of specialization: the only Route and the Dual-Major Route: Special Education and another discipline. It grounds knowledge in the area of the characteristics of populations and disabilities in special education, unique treatment approaches for children with light, moderate and severe disabilities, engaging in integration and inclusion of children with special needs in mainstream frameworks, work with multi-disciplinary teams, relationships with the parents and more. The program emphasizes the relationship between the different teacher education components. In the course of training, the pre-service teachers experience teaching in framework which offers solutions to the children's special needs, in both segregated and mainstream frameworks emphasizing the inclusion of the special needs children. In each of the teacher education years, the students take a mentoring course which accompanies their practice teaching, and enables them to acquire tools for developing programs for special needs populations, developing remedial teaching and assessment methods, becoming familiar with alternative communication methods and with unique curricula and technologies in special education. As well as their formal studies of curricula in special education, the second and third year pre-service teachers participate in five days schools' preparatory sessions in the schools, before the school year starts. In order to become a special education teacher the pre-service teacher is required to engage in extensive training in pedagogy, instructional methods, foundations of education, classroom management, instructional accommodations, behavior support, effective lesson planning using various methods for instructional purposes, choosing materials related to the curriculum and communication skills that complement verbal ability and subject knowledge expertise and use advanced technologies. These requirements create pressure and stress among special education pre-service teachers. The next chapter will explain the concept of stress and will demonstrate its implications in the educational practice.

Chapter II:

STRESS AND ITS IMPLICATIONS IN THE PROCESS OF TRAINING TEACHERS AND IN THE EDUCATIONAL PRACTICE

II.1.The Concept of Stress and its Implications in the Educational

Practice

Beginning in the 1960s and 1970s, stress designated bodily processes created by circumstances that place physical or psychological demands on an individual (Selye 1976). Later, stress was considered to be a transactional phenomenon dependent on the meaning of the stimulus to the perceiver (Lazarus, 1984; Antonovsky, 1998). When stress is perceived as a challenge, it is often associated with positive, energizing emotions (Brannon & Feist, 2000 in Jacob 2010). A certain degree of stress is necessary to survive, as it motivates a person to perform constructively and achieve things, and to adapt to a particular situation (Snyders 1998 in Jacob 2010). The various ways of understanding the term "stress" have been portrayed by theorists as models of stress. The following table summarizes the models of stress and their explanation: **Table 1.II: Models of Stress**

Models of stress	Conceptualization of stress	Conceptualization of coping
Response-Based Model (Selye ,1976)	Stress is the nonspecific response to any noxious stimulus. It is an internal reaction. The physiological response is always the same regardless of stimulus—the general adaptation syndrome (GAS).	There is no conceptualization of coping. Selye used the concept of a “resistance stage” to describe the resist of damage (this concept is part of the GAS).
Stimulus-Based Model (Holmes & Rahe, 1967)	Stress is equal to “life event.” Life events are “stress” that require adaptation efforts.	Coping is not defined.
Interaction Model (Lazarus, & Folkman, 1984)	Stress is the result of the imbalance between the environment and the person. It is described as a complex series of subjective phenomenon, including cognitive appraisals, stress emotions, coping responses, and reappraisals. Stress is experienced when the demands of a situation tax or exceed a person’s resources and some type of harm or loss is anticipated.	Coping is conceptualization as efforts to improve the perceived threat or to manage stress emotions (emotion focused coping and problem-focused coping).
Conservation of Resources Model (Hobfoll, 1989)	Stress is the result of a loss of resources, or a threat of loss. Resources are defined as objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for having these objects, personal characteristics, conditions, or energies.	When confronted with stress, individuals cope by attempting to minimize net loss of resources.

Teaching can be a stressful profession. **Teachers' stress** was defined as a response to negative affect with diverse psychological, physiological and behavioral changes, an uncomfortable feeling, and negative emotions such as anger, anxiety and pressure which originated from the teachers' work (Kyriacou and Sutcliffe, 1978, in Van dick and Wagner, 2001, Maslach & Jackson, 1981 in Schaufeli, Leiter and Maslach, 2009). Teacher turnover, low teacher satisfaction, and high teacher burnout, along with negative physical and psychological health may all be outcomes of stress. Contrary to experienced teachers who have the ability to employ direct approaches to cope with various stressors and reduce them, pre-service teachers lack that experience and the knowledge it entails. Their dual role as students and as pre-service teachers requires appropriate references to how students cope in both roles.

II.1.1. Academic Stress

College students perceive academic life as stressful and demanding (Wan, 1992, Hammer, Gribbsy & Woods, 1998 at Heiman, 2004). Many of them feel they pursuit higher education and have to cope with its many requirements and demands. **Academic stress** is the product of a combination of academic related demands that exceed the adaptive resources available to an individual. Students attending academic studies, in college or universities, report high levels of stress with academic performance, school work, finances, interactions with faculty; personal goals; social activities; adjustment to the campus environment; lack of support networks, assistantships and job as the issues contributing most to their levels of stress (Stecker, 2004, Oswalt and Riddock,2007).

II.1.2. Special Education Teachers' Stress

According to many studies, teaching is an exceptionally stressful profession and often leads to illness and high turnover (Borg, 1990; Lazuras, 2006; Montgomery & Rupp, 2005 in Dickerson, 2008). Special education teachers were found to experience stress and high levels of burnout (Lazuras, 2006 and Embich, 2001 in Dickerson, 2008) due to three primary reasons: role ambiguity, perceived lack of administrative support, workload. The factors reported vary between teachers. In different studies the special education teachers reported they felt frustration, anger, anxiety and misery when they were stressed, felt exhausted, felt ill, felt that they had no one to talk to, felt stress in

relationships with parents, felt stress in cooperation and interactions with regular education teachers and inappropriate student behavior. (Williams and Gersch, 2004, Elitharp, 2005). The understanding of the many skills and abilities required of them and what are the expectations are of them create stress among the special education teachers.

II.1.3. Stress among Special Education Pre- Service Teachers

Special education pre-service teachers are entering one of the most stressful, and therefore more challenging, areas of teaching. They engage both in academic studies and teaching practice in the course of their special education teacher education program and have to present their professional development both in college or university and in teaching practice (Fimian & Blanton, 1987 in Fives, Hamman and Arturo, 2007). Several researches (Dickerson, 2008; Segal, Ezer and Gilat, 2011) detailed categories of stress-inducing events with pre-service teachers: external pressures, academic pressure, stage-fear, loneliness, maintaining personal and intimate relationship with the supervisor (pedagogical instructor) and the mentor of the student-teachers. These pressures are added to the fact that the pre-service teachers are young people, in the first stage of their independent adult life, pressures typical of “late adolescence” (Elitzur, Tiano, Munitz and Neuman, 1987 in Segal, Ezer and Gilat, 2011). In addition, special education pre-service teachers have to cope with pressures related to the population they work with. The feeling of special education pre-service teachers that they understand their present modes of instruction, they are capable of managing them and they are important to them, is part of the pre-service teachers' process of development which requires some time (Seabrook and Dienes, 2003, Christensen, 2005; Fox, 2007).

Due to the difficulties listed above, the question which arises is what are the resources that will enable special education pre-service teachers to cope with the teaching tasks facing them in the course of teacher education?

II.2. Coping Models Used by Teachers

There are several models that can be of assistance in the examination of coping resources available to teachers as to all human beings.

Lazarus and Folkman (1984) described the **coping process as two phases**: appraisal and coping. Straub (2002) discerned **two other coping types**: problem-focused coping and emotion focused coping. Dunham (2002) presented an approach which

distinguished **four basic types of resources**: personal, interpersonal, organizational and community, each with its own implications regarding the individual's coping patterns. Although each teacher has unique coping methods for withstanding stress according to his or her personality, few key stress reduction strategies, relating to the models discussed earlier, were found in several studies (Punch and Tutteman, 1996, Griffith, et al., 1999, Schonfeld, 2001, Kyriacou, 2001 in Reese, 2003; Admiraal, Korthagen, & Wubbels, 2000, Kyriacou, 2001 in Montgomery & Rupp, 2005; Hemmings and Hockley, 2002, Kyriacou and Chien, 2004 in Zedan and Bitar, 2013). Table 2.II presents the various strategies for coping with stress, suggested by teachers in general and special education teachers in particular.

Table 2.II: Strategies for coping with stress

Personal strategies	Interpersonal strategies	Organizational strategies
<ul style="list-style-type: none"> ❖ Identifying a problem and developing a strategy to solve it. ❖ Positive reevaluation and Comparisons. ❖ Positive attitudes. ❖ Positive self-talk. ❖ Preparations for the lessons. ❖ Defensive strategies like avoidance, minimization, and distancing. ❖ Mental or physical palliative techniques. ❖ Humor. ❖ Time for solitude, reflection, hobbies. ❖ Continuing professional training and development. ❖ Drawing from previous successes. 	<ul style="list-style-type: none"> ❖ Close, trusting relationships with colleagues. ❖ Relationships with supportive family and friends. 	<ul style="list-style-type: none"> ❖ Administrative support. ❖ Teacher preparation programs. ❖ Mentoring programs by veteran colleagues to novice teachers.

The table shows that teachers, in their coping with stress, resort to their personal resources and rely on them. The table emphasizes the need for developing the personal domain as a source of coping among teachers. This may help teachers cope in stressful teaching situations. Sense of Coherence (SOC), a concept developed by Antonovsky (1998), is one of the personality components which influence the individual's ability to cope.

Sense of Coherence

Antonovsky (1998) defined SOC as a crucial personality component which influences the individual's ability to cope. It is a global orientation to view the life as structured, manageable, and meaningful or coherent and expresses the extent to which the individual has an enduring and constant but dynamic feeling of confidence in the context of the predictable, familiar and explicable environment. The strength of SOC is connected to a variety of coping mechanisms which Antonovsky refers to as Generalized Resistance Resources (Drageset, Nygaard, Eide, Bondevik, Nortvedt & Natvig, 2008). SOC includes behavioural, emotional and cognitive components pertaining to life as a whole, rather than to specific domains, situations or times. The uniqueness lies in the combination of the three components (Antonovsky, 1998): Comprehensibility - cognitive component: Manageability - behavioural component: Meaningfulness – emotional component. According to Antonovsky (1998), when individuals score high on these components, they can be identified as having a high Sense on Coherence, and when they score low, they have a low Sense of Coherence. The three components of SOC are closely linked but remain three distinct concepts.

Antonovsky (1986) believed that the three SOC components are essential but they are not of the same importance. Meaningfulness, the motivational component, seems to be more critical than Comprehensibility and Manageability. The second most important component is Comprehensibility, since high Manageability is a product of understanding. Therefore coping successfully draws on all the SOC components. The

Sources and Stability of SOC

Antonovsky claimed that the development of SOC is inherent in the psychological, social, cultural and historic contexts of an individual's life, such as childhood experiences, social roles, personal characteristics, genetic factors, parenting style and socioeconomic factors (Sullivan, 1993 in Griffiths, 2010). The three important determinants of the SOC according to Antonovsky (1990) are:

- ❖ The nature of the society in which one lives.
- ❖ The given historical period in which one lives.
- ❖ The particular social role complexes in which one is embedded.

The stability of SOC is an ongoing debate. Few empirical findings have suggested inconsistency regarding how SOC varies by age - increase with age or decreases with age (Lindström and Eriksson, 2005).

SOC is shaped by life experiences and the strength of one's SOC is dependent on three kinds of life experiences (Antonovsky, 1998): (1) Consistency; (2) Underload/overload balance; (3) Participation in socially valued decision making.

The three components of SOC are linked to the three elements central to life experiences. Thus, if life is consistent and predictable, it gives rise to comprehensibility; if life has a good overload/underload balance it feels manageable, and if one is allowed to participate in decision-making, life is meaningful.

SOC Questionnaire

Antonovsky put his theory into practice in the form of the Orientation to Life Questionnaire (OLQ), comprising 29 questions (SOC-29). The instrument was found to be consistent and reliable (Antonovsky and Sagy, 1986).

Sense of Coherence as a coping resource for students from different areas of knowledge has been examined in several studies.

Grayson (2008), demonstrated in his comparative analysis of a limited number of research studies that have found diverse findings: students with a high SOC are more able than others to cope with stressful situations; SOC varies by race; the SOC of both native and foreign born Chinese students is negatively affected by discrimination; students with a high SOC are more able than others to deal with the career decision process; students with a high SOC are more likely than others to report a general feeling of wellness. With regard to the population of the pre-service teachers, there is very little research on the resources that help them cope with stresses in their teaching practice at schools (Murray-Harvey, 1999, Pinder, 2008), and even less refer to SOC as a coping resource.

The next section will deal with Sense of Coherence as a coping resource available to teachers and pre-service teachers in teaching situations.

II.3. Sense of Coherence in Teaching Situations

In an attempt to understand the coping resources available to teachers and pre-service teachers, Sense of Coherence (SOC) formed the basis to the concept "Sense of Coherence in Teaching Situations" – SOCITS. This concept was coined by Bracha & Hoffenbatal (2011). The development of this concept was based on Antonovsky's concept "Sense of Coherence" – SOC that was described in the last chapter.

SOC orientation is global but in order to understand a Sense of Coherence in specific situations like teaching, it is imperative to understand the uniqueness and complexity

of teaching that is viewed by policy makers, educators and researchers as a complex, multidimensional and dynamic profession (Donald, Lazarus & Lolwana, 1997; Barrett Kutcy& Schulz, 2006; Chan, 2007; Karsenti et al. 2008; Romano, 2008; Tuval and Or, 2008; Hillel-Lavian, 2008; Buchanan, 2010; Schatz-Oppenheimer, 2011; Skaalvik & Skaalvic, 2011).

In order to examine the Sense of Coherence in specific teaching situations, the Sense of Coherence components were adjusted to teaching characteristics and a suitable questionnaire was composed. This adjustment enabled a clear identification and a unique description of a coping resource available to teachers / pre-service teachers during their teaching – SOCITS (Sense of Coherence in Teaching Situations).

The current study based on a previous research which validated the existence of a Sense of Coherence in teaching situations as a concept.

SOCITS as a concept defines the extent to which the pre-service teacher / teacher has a sense of confidence in predictable, familiar teaching situations, and the belief that one can cope so that teaching situations will be managed in the best way.

The SOCITS has three components:

Comprehensibility - the extent to which a pre-service teacher / teacher perceives teaching situations as cognitively meaningful and predictable.

Manageability - the extent to which the pre-service teacher / teacher perceives the available resources as satisfactory in the attempt to meet the demands placed by both external and internal stimuli on the problems in teaching situations.

Meaningfulness – the extent to which the pre-service teacher / teacher feels that teaching situations are emotionally meaningful, and that at least some of the daily requirements pose more of a challenge than a heavy burden.

The entire questionnaire and each component revealed a satisfactory level of reliability. Validity was indicated by a significant correlation between the SOCITS and Antonovsky's questionnaires. Examination of validity shows that Sense of Coherence in Teaching Situations is different from general Sense of Coherence and has a unique significance.

It is important to clarify that the concept "SOCITS -Sense of Coherence in Teaching Situation" focuses on teachers' feelings in contrast to the concept "Coherence in Teaching" which focuses on the teachers' doing. In other words, SOCITS as a concept focuses on teachers' feeling about their ability to cope with different teaching

situations whereas the term "Coherence in Teaching" describes the teachers' practical ability.

II.4. Gap in Knowledge

Little is known about the coping resources and Sense of Coherence as a coping resource of special education teachers; even less is known about these latter among special education pre-service teachers. The description above indicates a lack of knowledge on both the theoretical and practical aspect.

The theoretical aspect - This research will shed light on SOCITS - Sense of Coherence in Teaching Situations, a concept that was based on Antonovsky's SOC concept. It will focus on the Special Education pre-service teachers' understanding of their sense of coherence in teaching situations and its development in the course of teacher education. This will allow for gaining knowledge about SOCITS as a coping resource, its' characteristics and the factors that enhance and inhibit it.

The practical aspect - this study will use SOCITS' questionnaire as a quantitative tool, in order to understand the pre-service teachers' SOCITS and its' development. The use of the questionnaire will expand the practical knowledge of using it. The use of quantitative tool is followed by use of qualitative tools in a mixed methods research. This will enable the pedagogical instructors and their special education pre-service teachers to gain knowledge about the capabilities and difficulties of coping with various teaching situations.

II.5. Conceptual Framework of the Research

The conceptual framework represents the specific theories or their components underpinning the research. Consequently, the conceptual framework of this research pertains to four interrelated components: special education pre-service teachers, special education teacher training, teaching in special education, stress and coping models.

The concept **SOCITS**, the fifth component, describes the **special education pre-service teacher's** Sense of Coherence in Teaching Situations which can be used as a **resource for coping with stressful teaching situations**. These situations can occur when the pre-service teacher is **teaching in special education** while practicing teaching as part of the **special education teacher training**.

The concept SOCITS' positioning in the model emphasizes its importance as it is

connected to all four components of the model and it helps explain the differences between special education pre-service teachers' Sense of Coherence in teaching situations. The model in figure 3.II presents the components of the model and the way they interact and influence each other:

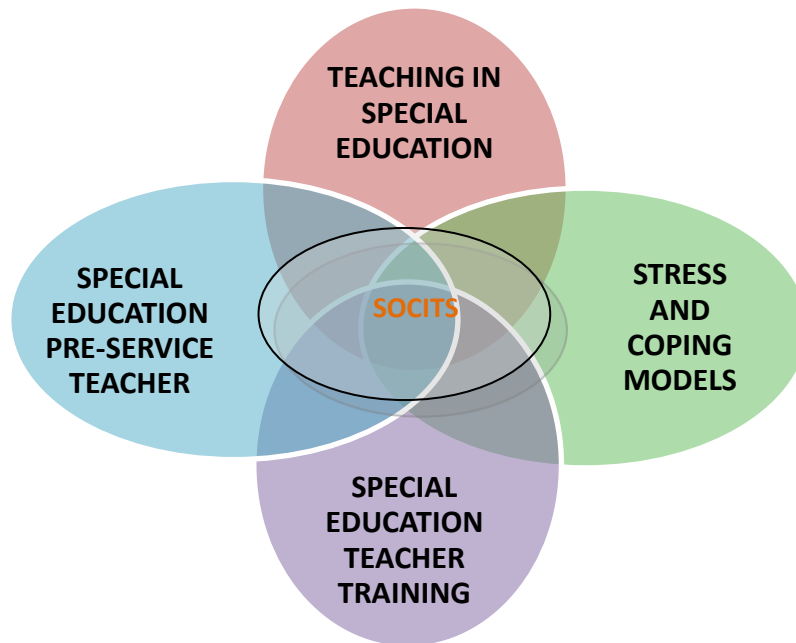


Figure 3.II: The conceptual framework

CHAPTER III

THE DESCRIPTION OF THE RESEARCH: "THE DEVELOPMENT OF A SENSE OF COHERENCE IN TEACHING SITUATIONS AMONG SPECIAL EDUCATION PRE- SERVICE TEACHERS"

III.1. The Research Goal

The research goal is to examine development of the special education pre-service teachers' Sense of Coherence in Teaching Situations, in their first and third year of academic studies.

III.2. Research Questions

The study was a mixed method study and questions were formulated for both the quantitative and qualitative approaches. The questions were:

1. Does "Sense of Coherence in Teaching Situations" (SOCITS) among Special Education pre-service teachers change over the three years of teacher education? (quantitative question)

2. What are the characteristics of the three components - Comprehensibility, Manageability and Meaningfulness in teaching situations as indicators for the Sense of Coherence in Teaching Situations among special education pre-service teachers, in their first and third year of studies? (qualitative question)
3. What are the factors, which enhance and inhibit SOCITS? (qualitative question)

III.3. Research Hypothesis

Base on the review of the literature, the research hypothesis is:

The level of Sense of Coherence in Teaching Situations among third year pre-service teachers will be higher than that of first year pre-service teachers in each component and in the general score.

III.4. Research Variables

- ❖ Variable No. 1- year of study: first year of study vs. third year of study.
- ❖ Variable No. 2 - the global SOCITS and the three components of the SOCITS of the participants: Comprehensibility, Manageability and Meaningfulness in teaching situations.

III.5. Research Participants

The survey questionnaire was administered to 136 undergraduate special education pre-service teachers from a college in the center of Israel, of which 57 were first year students and 79 were in the third year of their studies.

III.6. Research Methodology

This study adopted a mixed methods approach that was designed to gather information about the development of the SOCITS among special education pre-service teachers. The quantitative research reflected pre-service teachers' SOCITS and the qualitative research explored the explanation of SOCITS' development.

III.7. Research Paradigm

A mixed-method approach was used in this research. This approach was selected for this research based on the characteristics: a systematic manner in collecting and analyzing both qualitative and quantitative data; combining, merging, or embedding the two forms of data simultaneously; emphasizing one or both forms of data; using these procedures in a single study or in multiple phases of a program of study.

Advantages - this method was recognized as an accessible approach to inquiry which allowed the researcher to combine the strengths of both qualitative and quantitative research approaches, while the combination of strengths of one approach makes up for the weaknesses of the other approach (Creswell and Plano, 2011).

Disadvantages and Limitations - mixed method research design can be very complex. It takes much more time and resources to plan and implement this type of research and the researcher has to learn the two methods and be able to know how to mix each method effectively. Since the interpretations of the findings in the qualitative research are subjective, the researcher should acknowledge explicitly the possibility of personal bias (Creswell, 2009, Creswell and Plano, 2011).

Triangulation - by approaching the phenomenon from different observation points, using different methods and techniques, triangulation allows the researcher to identify aspects of a phenomenon more accurately (Creswell, 2009).

III.8. Research Strategy

A cross-sectional research method was designed in this study. The cross-sectional study allows the researcher to compare two different groups within the same parameters at a particular point in time and not over an extended period of time (Leedy and Ormrod, 2001).

III.8.1. Research Stages

The design of the research was a two-phase mixed methods design - an explanatory design. Information from the first quantitative phase was explored further in the second qualitative phase. In this research, data were collected in two phases:

Quantitative data: the questionnaires were handed out to the two groups (first year and third year pre-service teachers) towards the end of the academic year, after the pre-service teachers' full week of practice in schools.

Qualitative data: the reflective diaries were collected from the two groups (first year and third year pre-service teachers) at the end of the academic year.

Sampling - to address the research questions and hypothesis, the quantitative and qualitative data were collected without sampling, from all the pre-service teachers in the first year and the third year of their studies.

III.8.2. Data Analysis

The data in this research were collected from two sources; each source was analyzed in accordance with its appropriate research method and approach.

Quantitative source-SOCITS - Sense of Coherence in Teaching Situations questionnaire. **Questionnaires reliability** was tested using Cronbach's alpha for each component and for the entire questionnaire. **Validity** was tested by intercorrelations between the three components. Moderately high values were expected to indicate that each component has a unique meaning.

ANOVA - To examine the development of the SOCITS among the pre-service teachers and determine the impact the year of study – first vs. third year (variable No. 1) have on the SOCITS (variable no. 2), a 2 X 3 analysis of variance was conducted: Year (first, third) X component of SOCITS (Comprehensibility, Manageability, Meaningfulness) with repeated measure in the variable of component.

Qualitative source - Reflective diaries. Data were analyzed using Content Analysis. The purpose of the content analysis in this research was to identify the three components of the SOCITS (Comprehensibility, Manageability and Meaningfulness in teaching situations) and characterize them. Furthermore, the factors which enhance and inhibit SOCITS were identified and analyzed. Analysis was guided by a data driven approach. In this approach no pre- determined categories were defined. The categories that were identified emerged from the data itself. The purpose of the analysis was to identify the three SOC components as indicators of SOCITS (Weber, 1990, Creswell, 2009). Data were collected through reflective diaries that the pre-service teachers were instructed to write as a part of their academic duties in the end of the course.

III.9. Data Collection Methods

III.9.1. Quantitative Approach and Tools

SOCITS - Sense of Coherence in Teaching Situations Questionnaire

SOCITS is a valid and reliable questionnaire developed and piloted by Bracha and Hoffenbartal (2011, 2012, and 2013). The questionnaire seeks to measure and assess the global Sense of Coherence in teaching situations (SOCITS) and its three components – Comprehensibility, Manageability and Meaningfulness to the participants. The questionnaire was based on a questionnaire developed by

Anotonovsky (1998), which measures general sense of coherence (SOC) and was adapted to teaching situations by Bracha and Hoffenbartal (2011).

The SOCITS includes 25 items on a 6-point Likert scale (Clark and Watson, 1995, Schuman and Presser, 1996 in Lam, Allen and Green, 2010) from 1 (not at all) to 6 (to a great extent). The global score ranges from 25 to 150. Higher scores indicate greater sense of coherence in teaching situations. The items are divided according to the three components, namely Comprehensibility, Manageability and Meaningfulness in teaching situations. The grading of the item that was phrased negatively has been changed to equalize it with the general direction of the scale (Item 25).

III.9.2. Qualitative Approach and Tools

Reflective diaries

The writing of reflective diaries, before and after teaching episodes, is an ongoing developmental process in teacher education (Cohen-Sayag & Fischl, 2012). In this research the pre-service teachers were instructed to write reflections on their teaching practice, as a part of their academic duties in the end of the course. Teacher education programs operate on the basis of the notion that reflection is a critically important characteristic of a professional teacher and that promoting reflection is vital to pre-service teachers' professional learning.

CHAPTER IV

THE RESULTS OF THE RESEARCH AND THEIR INTERPRETATION

IV.1. RESULTS

IV.1.1 Quantitative Data Analysis

The first research question was - **Does Sense of Coherence in Teaching Situations (SOCITS) among Special Education pre-service teachers change over the three years of teacher education?**

Table 1.IV and figure 1.IV present the means and standard deviations of the three components by year (N= 136)

Table 1.IV: Means and standard deviations of the three components by year (N= 136)

	First year (N=57)		Third year (N=79)		Total (N=136)	
	Mean	SD	Mean	SD	Mean	SD
Comprehensibility	3.35	1.15	3.54	1.12	3.46	1.14
Manageability	4.37	0.82	4.31	0.57	4.33	.68
Meaningfulness	5.01	0.71	4.93	0.65	4.96	.65
Total	4.24	.074	4.26	.063	4.26	0.78

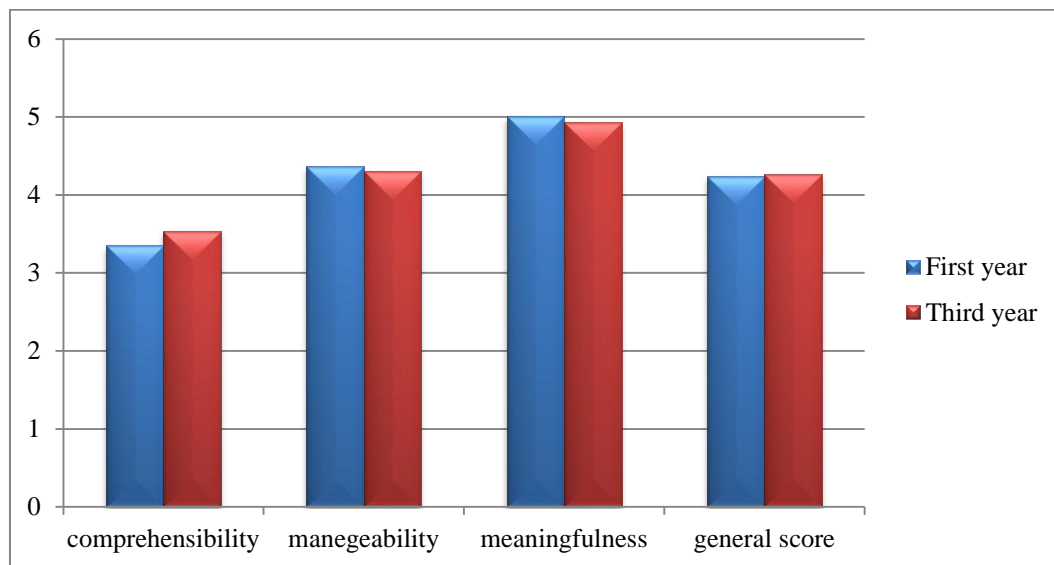


Figure 1.IV: Means and standard deviations of the three components by year (N=136)

The analysis yielded a main effect of component ($F(2, 134) = 123.14, p < 0.001$). To examine the specific differences between the three components, multiple comparisons were conducted using Bonferoni test ($p < 0.05$). The results show that Meaningfulness is significantly higher than the other two components (Comprehensibility and Manageability) and Manageability is significantly higher than Comprehensibility.

No significant effect of year was found ($F(1.134) = 0.03, P > 0.05$) revealing that the level of the general score of SOCITS among Special Education pre-service teachers did not change from the first year to the third year of teacher education. In addition, no significant effect of interaction between year and component was found ($F(2.134) = 1.11, P > 0.05$) revealing there are no differences between the years on each component and that the differences between the three components appear in both years. These results do not lend support to the first hypothesis.

Correlations between the Components

In order to examine whether the inter-relationships between the three components of SOCITS changed between first and the third year of Special Education teacher education, Pearson coefficients were calculated between the score of the three components of SOCITS and the general score for each year separately. The results are presented in table 2.IV: **Table 2.IV: Pearson coefficients**

	First year			Third year		
	Manage- -ability	Meaning- -fullness	General score	Manage- -ability	Meaning- -fullness	General score
Comprehensibility	0.004	-0.07	0.21	0.13	0.08	0.31**
Manageability		0.55**	0.67**		0.57**	0.83**
Meaningfulness			0.88**			0.88**

The correlation between the score in Comprehensibility and the general score of SOCITS has changed between the first year and the third year of study. Whereas the score was not significant in the first year, it became significantly moderate in the third year. Furthermore, in both years there was a moderate-high significant correlation between the score of Manageability and the score of Meaningfulness. Correlations between the general score and the scores of Manageability and Meaningfulness were high and significant.

IV.1.2. Qualitative Data Analysis

The second research question was: What are the characteristics of the three components - Comprehensibility, Manageability and Meaningfulness in teaching situations as indicators for the Sense of Coherence in Teaching Situations among special education pre-service teachers, in their first and third year of studies? The analysis was conducted by content analysis that was guided by a data driven approach, where no pre- determined categories were defined. The categories emerged from the data itself (Weber, 1990, Creswell, 2009). The following table presents the characteristics found for each SOCITS component, in the first year and third year of study. The analysis of the data revealed the same characteristics both in the first and the third year of study.

Table 3.IV: The characteristics for each SOCITS component

Comprehensibility in teaching situations	Manageability in teaching situations	Meaningfulness in teaching situations
Understanding the pupils and his/her needs	Planning in advance	Feeling of personal satisfaction
Understanding the population and its needs	Varied activities	Setting goals and accomplishing them
Understanding teaching methods and their implementation	Adjustment to the learner's style	Developing personal relationships with the pupils
	Varied experiencing	

The third research question was: What are the factors which enhance and inhibit SOCITS? A content analysis was conducted and was guided by a data driven approach to identify the factors which enhance and inhibit SOCITS. The data obtained from the analysis of both years show that there are similarities and differences between the influential factors enhancing or inhibiting SOCITS, in the first year and third year of study of the special education pre-service teachers. Table 6.IV presents the appearance or absence of the factors in the two years.

Table 6.IV: Appearance or absence of the influential factors enhancing or inhibiting SOCITS in the two years.

Factors		First Year of Study		Third Year of Study	
		Enhancing Influence	Inhibiting Influence	Enhancing Influence	Inhibiting Influence
Figures	Pedagogical Instructor	+	-	+	-
	Mentoring Teacher	+	+	+	+
	Peers	+	-	+	-
Overall Practice	Practicing Teaching in Class	+	+	+	+
	Connection between practice and Studies	+	+	-	-
	Duration of Practice	-	+	+	-
	Critical one-time experience	+	-	-	-
	Place of Practice	+	-	-	-
	Subject of Study	-	-	+	+

CHAPTER V CONCLUSIONS

V.1.The Conclusions of the Research

The Answer to the First Research Question: Does Sense of Coherence in Teaching Situations (SOCITS) among Special Education pre-service teachers change over the three years of teacher education?

Summary of the conclusions emerging with regard to the first research question presents the following conclusions:

- ❖ **Sense of Coherence in Teaching Situations** - According to the quantitative source there was no development in the level of the Sense of Coherence in Teaching Situations (SOCITS) among third year special education pre-service teachers compared to that of first year special education pre-service teachers in

each component of Sense of Coherence in Teaching Situations and in the general score. According to the qualitative source, there was a change in the Sense of Coherence in Teaching Situations (SOCITS) and its components.

- ❖ **Sense of Meaningfulness in teaching situations** - The intensity of this sense does not change for special education pre-service teachers between their first and third year, and characterizes them from their first year of their studies. It has a significant weight in the SOCITS strength hierarchy in both years of study.
- ❖ **Sense of Manageability in teaching situations** - The intensity of this sense does not change for special education pre-service teachers between their first and third year, and is less significant than the sense of Meaningfulness in teaching situations, yet higher than the sense of Comprehensibility in teaching situations. It characterizes students from their first year of studies and is connected to the sense of Meaningfulness in teaching situations from that year on. It has greater significance in the SOCITS strength hierarchy in the third year of study than it does in the first.
- ❖ **The sense of Comprehensibility in teaching situations** - the intensity of this sense has not changed for special education pre-service teachers between the first year and third year of their studies, and is the least intense compared to the sense of Meaningfulness and Manageability in teaching situations. It is characterized by special education pre-service teachers starting from their first year, and in the SOCITS strength hierarchy it has more significance in the third year than it does in the first year of studies.

These conclusions indicate that there was a change and a development in the connections between the three components of the Sense of Coherence in Teaching Situations (SOCITS) according to the qualitative measures, but development was not found in the level of the Sense of Coherence in Teaching Situations (SOCITS) in each component and in the general score according to the quantitative measures. There are various processes in SOCITS and its components indicating the beginning of a process of change, of the development of SOCITS in special education pre-service teachers in all its components, from the first year of their studies to the third year. This process requires a thorough examination using various analytic tools, both quantitative and qualitative, to be exposed.

The Answer to the Second Research Question: What are the characteristics of the three components - Comprehensibility, Manageability and Meaningfulness in teaching situations as indicators for the Sense of Coherence in Teaching Situations among special education pre-service teachers, in their first and third year of studies?

The characteristics found for each component in teaching situations are indicators of the existence of SOCITS among special education pre-service teachers, and have led to the construction of an applicable model. This model will be used to examine the SOCITS of the pre-service teachers in each characteristic depending on the factors for its development, the pre-service teachers' academic year of study, and their needs.

The Answer to the Third Research Question: What are the factors which enhance and inhibit SOCITS?

The factors that were found focused on two areas: figures and the experience as a whole, both in the first and the third year of their studies. The impact of these factors on the enhancing or inhibiting SOCITS is demonstrated by a continuum which shows that an enhancing factor could also be an inhibiting factor, and vice versa. The factors have led to the construction of an applicable model that will test the influence of each factor on the SOCITS according to its characteristics, the academic year, and the pre-service teacher's needs. Mapping the two domains – the characteristics of SOCITS and its components and the factors enhancing and inhibiting SOCITS with regard to the population examined in this research, and their integration- created a matrix. The matrix allow for a clear organization of the information and will constitute an applied model for teacher trainers, pedagogical instructors in particular, which will help them plan their instruction of special education pre-service teachers. The model is described in the following figure:

Figure 2.IV: An applied original model- Characteristics and Factors Influencing SOCITS

Characteristics of SOCITS		Influential factors enhancing or inhibiting SOCITS								
		Figures			Overall Practice					
		Pedagogical Instructor	Mentoring Teacher	Peers	Practicing Teaching in Class	Duration of Practice	Connection between practice and Studies	Critical one-time experience	Place of Practice	Subject of Study
Sense of Meaningfulness in teaching situations	Feeling of personal satisfaction									
	Setting goals and accomplishing them									
	Developing personal relationships with the pupils									
Sense of Manageability in teaching situations	Planning in advance									
	Varied activities									
	Adjustment to the learner's style									
	Varied experiencing									
Sense of Comprehensibility in teaching situations	Understanding the pupils and his/her needs									
	Understanding the population and its needs									
	Understanding teaching methods and their implementation									

The dynamics between the SOCITS components and the interaction among them allows us to broaden and deepen our understanding of the development of SOCITS among special education pre-service teachers, which was the focus of this research. We cannot be satisfied with just testing the level of the SOCITS; we must also examine the reference to each SOCITS component in terms of power compared to the other components, its weight in SOCITS compared to the weight of the other components, and its relation to the other components.

V.2.General Conclusions

This research is the first research of its kind that uses the term SOCITS and a SOCITS questionnaire as a research tool. The results indicate the importance of the SOCITS components in the development of SOCITS, the importance of the relationship among them, and the importance of each of them for the SOCITS as a whole.

The analysis of the development of SOCITS shows a primary process of development, of change, among special education pre-service teachers, between the first and third year of their studies. In addition, SOCITS is a concept that is not culture-dependent; therefore SOCITS can be a possible coping resource for pre-service teachers and can be considered as a theoretical framework for a coping model used by pre-service teachers. It enables the identification of the components of SOCITS, the interactions between them, the connections and hierarchy which determine the general sense of coherence in teaching situations.

The applicable model which represents the characteristics and factors for promoting and developing SOCITS will help pedagogical instructors in focusing and advancing their work. It is possible to construct an intervention program where SOCITS, its meaning, its components, and the relationship among them will be taught. The special education pre-service teachers will become aware of SOCITS and the way in which they can use SOCITS as a resource and as a model for coping with different teaching situations.

Recommendations for Further Research

- ❖ Conduct similar research in larger populations of pre-service teachers in various programs in order to establish the existence of SOCITS and provide a broader picture of the way SOCITS develops during the years of studies.
- ❖ Conduct research in the fourth year (internship), and after three years when the special education pre-service teachers become teachers in the field in order to

identify the characteristics and factors of SOCITS among young and more veteran teachers. The results will allow for a comparison between the findings and conclusions about the development of SOCITS over years of teaching.

- ❖ Conduct the aforementioned studies in special education pre-service teacher populations in universities and colleges around the country and around the world, in order to establish and expand the concept of SOCITS and its components.

Research Limitations

- ❖ The research tools - A mixed methods approach was chosen to enable the researcher to overcome the limitation arising from the use of a new research tool and gather information about the development of SOCITS among special education pre-service teachers from both quantitative and qualitative tools.
- ❖ Year of studies of the research's - The researcher limited the research to the end of the third year, thinking that during their fourth year, the special education pre-service teachers become classroom teachers in addition to their studies in college, and that their reality during that year changes. In retrospect, it appears that it was possible to conduct the research among special education pre-service teachers in their fourth year - the year in which the development of SOCITS can be expressed fully in teaching situations.
- ❖ Generalizability - This research is a preliminary research in the concept of SOCITS and using a questionnaire for determining its level. The research population consisted of special education pre-service teachers, a population which only a few studies addressed. Therefore, practical recommendations can be made, but the results are hard to generalize. In order to minimize this limitation a mix method approach was used and the quantitative research part presented a valid and reliable research tool.

Contribution to Knowledge

This is the first research which examines the development of SOCITS (Sense of Coherence in Teaching Situations) among the special education pre-service teachers in the first year and the third year of their studies.

Theoretical contribution - the research helps us understand SOCITS and its components, the connections and the relations among them. It is a personality-internal

resource for coping with teaching situations which is additional to the resources for coping with stressful situations among teachers.

Practical contribution -the SOCITS questionnaire which is a valid and reliable tool in this research is a new tool in the researchers' toolbox. No research has yet been conducted using this tool and its use will expand knowledge on ways of using it and the information that can be produced through its use. The findings of the research and the subsequent model that deals with the characteristics and factors promoting and developing SOCITS can enrich the training program of the pedagogical instructors, who accompanies the pre-service teachers during their experiences in the field and can even form a basis for an intervention program in the field.

Originality and Innovations in the Research

- ❖ The research topic - the topic is innovative and preliminary, and no specific research has been conducted regarding this topic.
- ❖ Innovative findings - some of the findings in this research are innovative as the topic has not been researched before.
- ❖ A new model that was constructed showing the characteristics and factors promoting and developing SOCITS can be used as a working tool or as a basis for an intervention program in the field.
- ❖ Developing new insights- the process that the special education pre-service teachers undergo during their three years of college education when coping with teaching situations is complex and multi-dimensional. Close attention must be paid to the pre-service teachers' feelings in order to promote SOCITS, so that the pre-service teachers feel they are able to cope with teaching situations.

The originality of the research stems from it being innovative and primary in the concept that it examined - SOCITS - and the questionnaire used in order to identify SOCITS levels. Even the population in this research was unique and only a few studies were conducted on it - special education pre-service teachers .

V.3. The Importance of the Research

The significance of this research lies in the examination of the development of the concept Sense of Coherence in Teaching Situations among special education pre-service teachers. The main research findings indicated that SOCITS components are significant to the understanding of SOCITS as a whole and how it develops from the

first to the third year of studying. The findings of the research allow us to understand the feelings of the special education pre-service teachers through the various SOCITS components, and how they contribute to their feelings when coping with teaching situations. They expose the characteristics of SOCITS and show the factors that either enhance or inhibit it.

In Israel, this research is academically significant in training programs for teaching pre-service teachers. The research will specifically contribute to pedagogical instructors when training pre-service teachers in practical experience frameworks. The universal significance of the research is its contribution to the knowledge in the theoretical field. The SOCITS concept expands the concept of Sense of Coherence and refers to its existence in specific situations. In addition to SOCITS being examined in teacher training frameworks around the world and its consolidation as a culture-independent concept, this concept allows for examining SOC in other specific stressful situations – Medicine, Psychology, Para-medical professions, etc.

The contribution to knowledge in the practical field is in the questionnaire on assessing SOCITS and the model that was constructed consequently. The questionnaire for assessing SOCITS is valid and reliable (Bracha and Hoffenbartal, 2011), but using it extensively will establish it as a quantitative tool for researchers to use. The model built in light of the results of the research, which deals with the characteristics and factors that enhance SOCITS, can become universal after examining SOCITS among pre-service teachers in training frameworks around the world. The model can be applied according to the practical implications and recommendations presented in this chapter.

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